# Draft
# Supplemental Environmental Impact Report

# Panoche Valley Solar Project

CUP No. UP 1023-09-A
State Clearinghouse No. 2010031008

**County of San Benito**
Department of Planning and Building Inspection Services
Hollister, California 95023

Prepared by:

Aspen Environmental Group

**December 2014**

**11665**

# Notice of Availability
## Draft Supplemental Environmental Impact Report

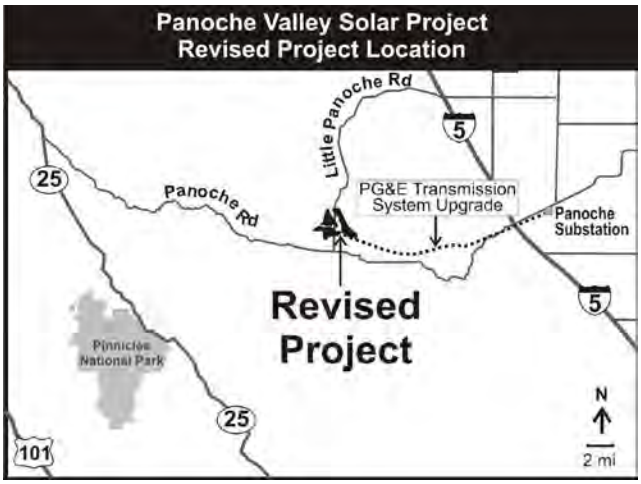
## Panoche Valley Solar Project

**CUP No. UP 1023-09-Amended**
**State Clearinghouse No. 2010031008**

**December 23, 2014**

The County of San Benito (County) has prepared a Draft Supplemental Environmental Impact Report (SEIR) as Lead Agency under the California Environmental Quality Act (CEQA) for the Panoche Valley Solar Project. In 2010, the County certified a Final Environmental Impact Report and approved the conditional cancellation of Williamson Act contracts, Use Permit 1023-09, and Development Agreement for the project ("Approved Project"). The purpose of the Supplemental EIR is to analyze proposed changes to the Approved Project and whether these changes result in any new significant environmental effects that were not previously analyzed and disclosed in the 2010 Final Environmental Impact Report or substantially increase the severity of significant environmental impact previously analyzed and disclosed.

## Description of the Proposed Project




The applicant, Panoche Valley Solar LLC, proposes modifications to the Panoche Valley Solar Project Use Permit 1023-09 approved in 2010. In general, the project has been reduced in size from a 399 MW project to a 247 MW project and will be constructed over a shorter 18-month timeframe as opposed to the previously approved 5-year construction period. The applicant is also proposing revisions to various project components based on the reduced project size and revisions to previously approved Applicant Proposed Measures and Mitigation Measures based on more refined engineering and construction techniques. In addition, PG&E has identified specific telecommunication upgrades that are required to serve the project and are under the jurisdiction of California Public Utilities Commission that will be located partially in San Benito County and partially in Fresno County. The SEIR assesses the environmental impacts that may result from the incremental changes to the 2010 Approved Project and from the PG&E upgrades, and where appropriate updates the analysis in the previously certified Final EIR . The SEIR does not and is not required to reanalyze the environmental impacts of the approved project as a whole.

The Draft SEIR is available for public review online at the County's website: http://www.cosb.us/

The Draft SEIR is being circulated for review and comment to the public, agencies, individuals, and interest groups who have requested to be notified. Per Section 15105 of the State CEQA Guidelines, San Benito County will provide for at least a 45-day public review period on the Draft Supplemental EIR. The public comment period for the Draft Supplemental EIR ends on **Tuesday, February 10, 2015**. **Comments should be limited to the incremental changes in the project and the environmental impacts of these incremental changes that are analyzed in the SEIR as opposed to the previously certified Final EIR.**

During the public review period, the County Planning and Building Department will hold a public meeting to explain the contents of the Draft SEIR and to receive oral and written comments on the Draft SEIR. The public meeting will be held at the time and location shown on the following page.

| PUBLIC MEETING ON THE DRAFT SUPPLEMENTAL EIR | |
|---|---|
| Tuesday, January 27, 2015<br>6:00 PM | San Benito County Board of Supervisors Chambers<br>481 Fourth Street, Hollister, CA 95023 |

## Impacts of the Revised Solar Project and PG&E Upgrades

Overall, the Revised Project would result in less severe impacts than the 2010 Approved Project. Impacts remain significant and unmitigable in the issue areas of aesthetics and noise. Impacts related to traffic and groundwater would be more intense due to the shorter construction timeframe. However, these more intense impacts and the other environmental impacts resulting from the incremental changes in the project would be reduced to a level that is less than significant with implementation of the previously recommended and adopted mitigation measures, modifications to these measures, or would be adverse but not require mitigation. Impacts related to the PG&E Upgrades are less than significant due to PG&E's avoidance and minimization measures.

## How to Comment on the Draft SEIR

Please submit comments on the Draft SEIR in person at the public meeting, by email, or postmarked by **Tuesday, February 10, 2015**, as follows:

| EIR TEAM CONTACT INFORMATION | | |
|---|---|---|
| Via email to:<br><br>panochesolar@aspeneg.com | Via mail to:<br>Michael Krausie, Associate Planner<br>c/o Aspen Environmental Group<br>235 Montgomery Street, Suite 935<br>San Francisco, CA 94104 | Via fax to:<br><br>**(888) 467-1863** |

## Project Application Materials

Hard copies of the Executive Summary of the SEIR, compact disc of the entire contents of the SEIR, and hard copies of the entire contents of the SEIR may be ordered and purchased from:

Design Line & Granger Printing
435 San Benito Street
Hollister, CA 95023

Phone: 831-637-3347
Fax: 831-637-6332
Hours of Operation: 8:30 AM to 5:00 PM
Monday through Friday

Hard copies of the entire contents of the SEIR are available for persons with special needs upon request. Hard copies of the entire contents of the SEIR are available for review at the repository sites listed below.

| REPOSITORY SITES | |
|---|---|
| Panoche Inn | 29960 Panoche Road, Paicines, CA 95043 ..... (831) 628-3538 |
| Planning, Building Inspection Services and Code Enforcement Department | 2301 Technology Parkway, 1st Floor<br>Hollister, CA 95023-9174 ..... (831) 637-5313 |
| San Benito County Free Library | 470 5th Street, Hollister, CA 95023..... (831) 626-4107 |
| San Benito County Administration Building | 481 4th Street, 1st Floor, Hollister, CA 95023..... (831) 636-4000 |

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# Appendices

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Appendix 2 Panoche Solar Farm Traffic Study – November 2014
Appendix 3 Mitigation Measures and Applicant Proposed Measures Unchanged from 2010 Final EIR

# DRAFT

## Supplemental Environmental Impact Report

# Panoche Valley Solar Project

CUP No. UP 1023-09-A
State Clearinghouse No. 2010031008

Prepared for

**County of San Benito**
**Department of Planning and Building Inspection Services**
**Hollister, California 95023**

Prepared by

Aspen Environmental Group

**December 2014**

**11679**

# Executive Summary

In 2010, Solargen Inc., the predecessor in interest to current applicant Panoche Valley Solar, LLC's (PVS or Applicant), , applied to the County of San Benito (County) for a Conditional Use Permit (CUP) to construct and operate a solar photovoltaic project in the Panoche Valley. The Applicant also applied to the County for whole or partial cancellation of nearly 7,000 acres of California Land Conservation Act of 1965 ("Williamson Act") contracts. The County prepared a Final Environmental Impact Report (2010 Final EIR) that included a comprehensive analysis of the project's environmental impacts pursuant to the California Environmental Quality Act (CEQA). In October and November 2010, the County Board of Supervisors ("Board") unanimously certified the 2010 Final EIR, approved the CUP, approved the cancellation of the Williamson Act contracts, and approved a Development Agreement. Rather than approving the project as originally proposed and analyzed in the 2010 Draft EIR, the County approved Alternative A Revised, which was a reduced density alternative that was described and analyzed in the 2010 Final EIR. Alternative A Revised is referred to as the "Approved Project" in this Supplemental EIR.

In August 2014, PVS requested that the County modify the approved CUP. Based on subsequent consultation with state and federal resource agencies and further design and engineering, the Approved Project has been further reduced in size, but will constructed over a shorter 18-month timeframe as opposed to five years. In addition, PG&E has identified specific telecommunication upgrades that are required to serve the project that will be installed within the existing PG&E right-of-way and at existing PG&E facilities. This Supplemental Environmental Impact Report (SEIR) assesses the environmental impacts that may result from these incremental changes to the Approved Project, which are referred to as the "Revised Project." The SEIR does not reanalyze the environmental impacts of the project as a whole. The incremental changes incorporated in the Revised Project that are analyzed in the SEIR are described briefly in Section A.2 and in detail in Section B of this SEIR. Figure ES-1 (at the end of the Executive Summary) shows the location of the project, and Figure ES-2 shows the boundaries of the originally proposed project, the Approved Project, and the Revised Project.

This Executive Summary summarizes the requirements of the CEQA Statute and Guidelines, provides an overview of the Revised Project, summarizes the alternatives considered in 2010, outlines the changes to the impacts of the project and the adopted mitigation measures that would result from the Revised Project, and discloses areas of controversy and issues to be resolved.

## ES.1 Changes to the Approved Project

The Approved Project and the Revised Project are located on the same proposed site in the Panoche Valley, an unincorporated area of eastern San Benito County. The Approved Project would have generated 399 megawatts (MW) and would have been located on 3,202 acres with 2,203 acres of permanent disturbance for the project footprint. The Revised Project would generate 247 MW and would be located on 2,506 acres with 1,888 acres of permanent disturbance for the project footprint. The Approved Project would have been constructed in five phases over five years. The Revised Project would be constructed in one phase lasting approximately 18 months.

The Revised Project includes the following changes:

- **Reduced Project Footprint.** The project footprint and overall disturbance area has been refined and reduced, which has resulted in a larger on-site conservation area for species conservation.
- **Increase in Peak Construction Personnel and Construction Traffic.** Based on an accelerated construction schedule (one 18-month construction phase as opposed to a 5 year construction

schedule), the number of daily construction workers traveling to/from the Project site and working at the site has increased by a maximum of 200 workers per day to 550 workers per day.

- **Water Usage.** Due to the accelerated construction schedule, the applicant is proposing to increase the amount of water used during the temporary construction period. However, due to the reduced size of the project, the amount of water used to wash panels once the project is operational has been reduced.
- **Additional Water Storage During Construction.** The applicant proposes to construct new temporary construction water ponds and three temporary water tanks near existing or new wells.
- **Revised Internal Circulation.** Permanent on-site access roads would be eliminated from the project and interstitial space (dirt paths between rows of PV panels) would be utilized as transportation corridors as needed for maintenance. No installation of gravel or compaction would be required with the exception of the project perimeter road and access to the substation and operations and maintenance area.
- **Fencing.** Based on coordination with and input from the United States Fish and Wildlife Service (USFWS) and CDFW and revised biological data, the implementation plan for installation of fencing at the Project has been refined.
- **Applicant Proposed Measures/Mitigation Measures.** The Applicant has requested changes to a number of the applicant proposed measures (APMs) and mitigation measures that were adopted by the County in 2010 when the project was approved. An explanation of the requested changes and the effect of these changes on the prior analysis of project's environmental impacts are described in the appropriate discipline's analysis in Section C.
- **Other changes within the Project Footprint.** The Revised Project includes a reduced number of inverters and transformers and minor modifications to the electrical substation and interconnection facilities.
- **Telecommunications Upgrades**: Based on interconnection studies performed by the California Independent System Operator (CAISO) and in consultation with Pacific Gas & Electric's (PG&E), specific reliability upgrades have been identified for nearby substations, interconnection facilities and telecommunications infrastructure (which include installation of optical ground wire [OPGW] on PG&E's existing transmission line and a microwave system). Interconnection facilities including the project switchyard and structures needed to tie in the existing transmission line to the Project site were described in the Final EIR.

# ES.2 Agency Review Processes

## ES.2.1 San Benito County Process

The County has prepared this SEIR to evaluate the environmental impacts of the applicant's proposed modification to the 2010 Use Permit. This SEIR evaluates and mitigates the potential impacts associated with the Revised Project, and explains how they differ from those of the Approved Project.

The Planning Commission (or the Board on appeal) is the decision-making body on the modification to the CUP. If granted, the County's approval will again include the approval of a mitigation monitoring and reporting program to ensure that the Revised Project implements all of the previously adopted mitigation measures and any revised measures recommended in this SEIR. The County would not issue any grading or

building permits until the Applicant complies with those conditions that must be satisfied prior to issuance of grading or building permits..

The Board of Supervisors conditionally approved cancellation of the Williamson Act contracts affecting the project site in 2010 and that approval remains effective today. As a result, once the Applicant complies with all conditions of approval of the cancellation, which includes payment of the cancellation fee, the Williamson Act contracts will be officially cancelled and the applicant can proceed with construction and operation.

### ES.2.2 California Public Utilities Commission Process

The California Public Utilities Commission (CPUC)regulates the activities of California's investor-owned utilities, including PG&E. Prior to the CPUC making a decision on approval of the work, the PG&E work must be evaluated under CEQA.

The CPUC has exclusive jurisdiction over the telecommunications improvements that PG&E would complete ("PG&E Upgrades"), most of which are off-site, and may rely on the SEIR in order to issue the requisite approvals to proceed with the upgrades. The CPUC approvals would include PG&E's request to take ownership of the Project switchyard, the interconnection work and upgrades to the telecommunications facilities for the Moss Landing-Panoche 230 kV transmission line.

## ES.3 Project Objectives

PVS has identified the following five basic project objectives:

- Maximize renewable energy output through construction of a large-scale 247 MW solar energy facility to help meet mandatory State renewable energy goal, including the California Renewable Portfolio Standard for 2020;
- Locate the facility in a high solar resource area;
- Minimize environmental impacts by locating the facility on a site that has access to high-voltage electrical transmission lines that do not require substantial upgrading to accommodate the energy generated;
- Minimize impacts on the community and the environment by locating the facility in a remote location, on land with compatible topography, and outside of parkland and designated habitat conservation areas; and
- Achieve full operation in 2016 to qualify for the Investment Tax Credit under the Energy Improvement and Extension Act of 2008 (H.R. 1424).

## ES.4 Environmental Analysis

This section summarizes whether the incremental changes to the Approved Project (the Revised Project) would create any new significant environmental impacts that were not analyzed in the 2010 Final EIR or substantially increase the severity of any previously identified impacts. This analysis is presented in detail in Section C of the SEIR, The section also summarizes whether any new information has been developed since the 2010 approval. Within each section below, the impacts of both the Revised Project and the PG&E Upgrades are summarized.

## ES.4.1 Summary of Environmental Impacts by Discipline

The Revised Project would cause the same 4 significant unmitigable impacts relating to aesthetics and construction noise as the Approved Project. The Revised Project also would cause similar environmental impacts as the Approved Project for all other environmental resource areas.

### Aesthetics

**Revised Solar Project.** The aesthetic impacts of the Approved Project would be reduced with the Revised Project due to its smaller size and shorter construction schedule. Therefore, no changes are required and none have been made to the adopted aesthetics mitigation measures to address any new or more severe impacts.

The Revised Project's construction period would be approximately 18 months as opposed to the 5-year period originally defined, so visible construction equipment would be present for a significantly shorter timeframe. Nonetheless, the construction impact remains significant and unmitigable due to the visibility of construction equipment, materials, and activities..

**PG&E Upgrades.** The on-site and off-site PG&E Upgrades would result in a less than significant aesthetic impact during construction even though construction activities would be visible due to the very short construction period and the relatively low number of viewers. Once installed, the new optical groundwire would not be noticeably different from the existing shield wire on the Moss Landing-Panoche 230 kV transmission line, so no long-term visual effects would result from this telecommunications upgrade component. Similarly, the visual impact of microwave facilities at Panoche Mountain, Call Mountain, and the Helm Substation would be less than significant because of their proposed installation where other similar infrastructure currently exists. Construction and operation of the new microwave tower (approximately 100' feet tall) at the Panoche Valley Solar switchyard would not result in a significant change in the structural contrast and developed character of the Project area because this tower height is consistent with the existing transmission towers.

**Cumulative Impacts.** Aesthetic impacts are largely site specific and there are no other cumulative projects that are close enough to the project site to contribute to a cumulative aesthetic impact. Therefore, like the Approved Project, the Revised Project would not combine with impacts of other projects, including those of the PG&E upgrades, because the Project site is visually isolated from the adjacent landscape by the surrounding hills and no other projects are proposed within Panoche Valley. Therefore, there would be no cumulatively significant impact.

**Overall Impacts.** The Revised Project would not result in any new significant direct or cumulative aesthetic impacts or a substantial increase in the severity of any previously identified impacts. The Revised Project would continue to have significant impacts to aesthetic resources during the temporary construction period and once operational.

### Agriculture

**Revised Solar Project.** The agricultural impacts of the Approved Project would be reduced with the Revised Project due to the smaller project footprint. Therefore, no changes are required to and none have been made to the adopted agriculture mitigation measures to address any new or more severe agriculture impacts.

Impacts to agriculture are assessed based on the predicted interaction between construction, operation, and maintenance activities and the agricultural resources of the project site and vicinity. Due to the

reduced size of the Revised Project, impacts to on-site soils and agriculture activity would be reduced from those of the Approved Project. Four mitigation measures adopted in 2010 defining habitat restoration, a grazing plan, implementation of conservation easements, and monitoring, would equally apply to the Revised Project to ensure that impacts are less than significant.

Nearly the entire project site is currently enrolled in Williamson Act contracts. However, the County has conditionally approved the cancellation of these contracts in 2010, Therefore, once the applicant pay the cancellation fee and satisfies any other conditions, there will be no conflict with Williamson Act contracts and applicant can commence construction of the Revised Project. Nonetheless, the Revised Project is subject to the same mitigation adopted in 2010 that requires the Applicant to acquire agricultural conservation easements on agricultural land to compensate for the loss of agricultural land preserved in the County. With the implementation of all of the previously adopted mitigation, conflicts with Williamson Act contracts, existing zoning for agricultural use, and objectives in the County General Plan's Agriculture and Conservation and Open Space Elements would be less than significant.

**PG&E Upgrades.** The PG&E Upgrades would be located on farmland in San Benito and Fresno Counties, including Grazing Land managed by BLM. The permanent conversion of farmland would be a less than significant impact due to the very small amount of land affected (less than an acre). Similarly, impacts to Williamson Act lands would take place within areas with existing utility infrastructure and because permanent impacts on FMMP-designated Farmland would be very small (about than 10 square feet), this impact would also be less than significant, and no mitigation is required.

**Cumulative Impacts.** The Revised Project would not result in any new or substantially more severe cumulative agricultural impacts. When combined with impacts from the PG&E Upgrades as well as past, present, and reasonable future projects, the loss of agriculture land would contribute to the decrease in agricultural land throughout the State and in particular in San Luis Obispo, Fresno, and San Benito Counties. However, the potential cumulative loss of agricultural was previously analyzed in the 2010 Final EIR. As the 2010 Final EIR explained, these impacts would be considered potentially significant, but would be mitigated to less than cumulatively significant with implementation of the mitigation measures that were recommended in the 2010 Final EIR and ultimately adopted for the Approved Project. The Revised Project would continue to implement these measures with a slight modification to the sheep grazing mitigation, which does not affect the overall impacts conclusions

**Overall Impacts.** All of the agricultural resources impacts for the Revised Project, the PG&E Upgrades, and cumulative impacts would be less than significant with implementation of mitigation.

## Air Quality

**Revised Solar Project.** The air quality impacts of the Approved Project would be similar to those of the Revised Project in that the Revised Project would result in the same type of pollutant emissions that are described in the 2010 Final EIR. However, due to the compressed construction schedule (approximately 18 months compared to the Approved Project schedule of approximately 5 years), there would be more intense daily construction activity for a shorter period of time. With minor changes to mitigation measures, this compressed construction schedule would not lead to more severe air quality impacts.

The air quality analysis evaluates impacts from construction emissions (from construction vehicles and dust) and the emissions from operational vehicles and dust. Similar to the Approved Project, construction activities under the Revised Project would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants that would be likely to exceed the Monterey Bay Unified Air Pollution Control District (APCD) significance thresholds without mitigation. The same mitigation

measures that were recommended in the 2010 Final EIR and ultimately adopted would be implemented to reduce construction vehicle emissions, reduce fugitive dust, and designate a dust compliance monitor. However, one mitigation measure, has been modified due to the increased daily ground disturbance, and now requires that watering occur three times daily to prevent significant impacts from fugitive dust from increased ground disturbance activity.

Operation, maintenance, and inspections of the Revised Project would generate slightly less dust and exhaust emissions of criteria pollutants and toxic air contaminants than the Approved Project due to the reduced Project footprint, and would not likely exceed the Monterey Bay Unified APCD thresholds after application of the recommended mitigation. Although the size and generating capacity of the Revised Project would be smaller than the Approved Project, operation of the Revised Project would still produce electricity that displaces power from traditional fossil fuel power plants.

**PG&E Upgrades.** Due to the short construction period, the limited extent of equipment use, and the small footprint of the proposed upgrades, pollutant emissions during construction would not occur at a significant level. The operation and maintenance activities and emissions would be comparable to those occurring for the existing transmission and communication systems. These emissions would not occur in quantities notably different from those already occurring as the existing systems are inspected and maintained, and would not result in a significant impact.

**Cumulative Impacts.** The Revised Project would not result in any new or substantially more severe cumulative air quality impacts. There are no major stationary emission sources or other cumulative construction proposed within a 10-mile radius of the Revised Project site that would contribute to any cumulative air quality impacts. Additionally, the PG&E Upgrades would result in negligible emissions that when combined with the daily construction emissions would not cause pollutant emissions levels to exceed applicable thresholds. As a result, no significant additional emissions would be caused by cumulative projects near the site. With mitigation identified for the Revised Project, the cumulative impacts of the Revised Project would not be significant.

**Overall Impacts.** All of the air quality impacts for the Revised Project would be less than significant. Mitigation is required to reduce construction impacts for the Revised Project to less than significant. All air quality impacts for both the PG&E Upgrades and cumulative impacts would be less than significant.

## Climate Change

**Revised Solar Project.** The climate change impact of the Approved Project would be similar with the Revised Project. Both the Approved Project and the Revised Project result in the same sources of greenhouse gas (GHG) emissions. These emissions include both direct emissions, such as those emitted by stationary sources at the project site or caused by project activity onsite, and indirect emissions, including emissions from any offsite facilities used for project support as a result of the construction or operation.

As with the Approved Project, use of construction equipment and mobilizing the workforce and materials to develop the site would generate GHG emissions. Although the construction schedule for the Revised Project would be compressed to approximately 18 months from about 5 years, the amortized annual emissions of the Revised Project would be lower than that of the Approved Project because the Revised Project would involve a smaller development overall and less overall ground disturbance. Construction emissions amortized over the anticipated 30 year life of the project would not exceed the CARB Mandatory Reporting applicability level of 2,500 metric tonnes $CO_2$ per year. GHG production from construction would be adverse, but less than significant.

Operation, maintenance, and inspections would result in GHG emissions from the use of carbon-based fuels (gasoline, diesel fuel, and propane) for these activities. Due to the reduced project footprint and the reduced number of project components, greenhouse gas emissions for operation, maintenance, and inspections would be lower for the Revised Project than for the Approved Project, and this impact would remain less than significant. The GHG emissions caused by the construction, operations, and life cycle of the project would be more than offset by the reduction in greenhouse gas from traditional fossil fuel source due the renewable energy generated by the Revised Project, and as such, would be considered adverse, but less than significant. The power generated by the project would avoid GHG emissions and would be considered a beneficial impact.

**PG&E Upgrades.** The PGE Upgrades would generate the same sources of greenhouse emissions as the Approved Project and the Revised Project only at much smaller scale. Although construction activities would generate exhaust emissions of GHG, the total emissions would not occur at a significant level due to the short construction period, the limited extent of equipment use, and the small footprint of the proposed upgrades. This impact would remain less than significant. The operation and maintenance activities and emissions would be comparable to those occurring for the existing transmission and communication systems. These emissions would not occur in quantities notably different from those already occurring as the existing systems are inspected and maintained. GHG emissions from operation and maintenance activities would be less than significant. Moreover, the volume of GHG emissions that would be avoided by the Revised Project would more than offset any negligible GHG emissions from the PGE upgrades.

**Cumulative Impacts.** The Revised Project would not result in any new or substantially more severe cumulative GHG impacts. As the 2010 Final EIR explained, the GHG emissions caused by the construction, operations, and life cycle of such a large scale renewable energy project and the PG&E Upgrades would be more than offset by the emissions avoided by the project, once it's operational, and as such, would be considered adverse, but less than significant. Construction and operation of both the Revised Project and the PG&E Upgrades would cause a less than significant contribution to cumulatively considerable greenhouse gas emissions.

**Overall Impacts.** All of the climate change and greenhouse gas impacts of the Revised Project, the PG&E Upgrades, and cumulative impacts would be less than significant.

## Biological Resources

**Revised Solar Project.** The biological resources impacts of the Revised Project would be reduced compared with the Approved Project because of the smaller project footprint. There are no changes to the significance of biological resource impacts from the conclusions of the 2010 Final EIR; the impact determinations that were presented in the Final EIR remain accurate. With implementation of the previously approved Applicant Proposed Measures and mitigation measures and the revised measures described in the SEIR, Revised Project impacts to biological resources would remain less than significant.

The Revised Project site is located in eastern San Benito County in the Panoche Valley. The Ciervo-Panoche Region has been identified in the *Recovery Plan for Upland Species of the San Joaquin Valley, California* (USFWS, 1998) as an important area for the conservation for many federally and state-listed plants and animals. These include the San Joaquin kit fox (*Vulpes macrotis mutica*), giant kangaroo rat (*Dipodomys ingens*), and blunt-nosed leopard lizard (*Gambelia sila*). In addition, the National Audubon Society has identified the Ciervo-Panoche Region, and specifically the Panoche Valley, as a globally significant *Important Bird Area*.

The Approved Project (Alternative A Revised) would have resulted in development of 3,302 acres within project fencing, and preservation of a contiguous area of 1,680 acres along the southern boundary of the project. With implementation of the mitigation measures presented in the 2010 Final EIR, and the additional mitigation lands both within the original project boundary and in Valadeao Ranch and Silver Creek Ranch, the impacts of the Approved Project would have been less than significant for all direct and indirect impacts to biological resources, including cumulative impacts.

The Revised Project would result in development of 2,506 acres within project fencing. The gap along the bottom of the Revised Project fencing would be 5 to 6 inches rather than 2 feet as described in the 2010 Final EIR. This change is based on consultation with CDFW and USFWS. The proposed mitigation lands continue to include the Valadeao Ranch, the Silver Creek Ranch, and the on-site Valley Floor Conservation Lands, which are all described in the Final 2010 EIR. However, the Valley Floor Conservation Lands were increased from 2,411 acres as described in the 2010 Final EIR to approximately 2,514 acres. This area includes an expanded 52-acre blunt-nosed leopard lizard buffer around blunt-nosed leopard lizard sightings, a widened San Joaquin kit fox corridor and higher density giant kangaroo rat areas.

**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). The approach for the PG&E route analysis was the same as the Supplemental EIR; 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

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, measures were presented as Avoidance and Minimization Measures (AMMs) to be implemented by PG&E prior to, and during, construction activities associated with the PG&E upgrades and interconnection work. With implementation of AMMs, impacts to biological resources resulting from the PG&E work would be less than significant.

**Cumulative Impacts.** The Revised Project would not result in any new or substantially more severe cumulative biological resources impacts. 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, the cumulative impacts scenario 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.

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 2,411 acres described under the Approved Project.

In total, the Applicant has acquired rights to a total mitigation area of 24,174 acres (Valley Floor Conservation Area - 2,514, Valadeao Ranch Conservation Lands -10,772 acres and the Silver Creek Ranch Conservation Lands - 10,890 acres),. 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.

Through the implementation of mitigation measures, impacts of the Revised Project would not combine with impacts of the PG&E Upgrades or other projects to result in cumulatively considerable impacts.

**Overall Impacts.** All of the biological resources impacts of the Revised Project, the PG&E Upgrades, and cumulative impacts would be less than significant with implementation of mitigation.

## Cultural and Paleontological Resources

**Revised Solar Project.** The Revised Project would not affect any known cultural resources that were not identified in the 2010 Final EIR or cause a substantial increase the severity of any previously analyzed significant cultural resources. Such impacts are largely site-specific and there have been no changes to the physical conditions on the project site since 2010 that would result in a new or more severe impact. The cultural and paleontological resources analysis addresses whether ground disturbing activities associated with the Revised Project could potentially cause impacts within the currently defined area of potential effect.

No new historical resources or unique archaeological resources have been identified in the study area since 2010. Therefore, like the Approved Project, the Revised Project would have less than significant impacts on historical or archaeological resources. Although the area of ground disturbance is reduced under the Revised Project, the possibility of accidental discovery and disturbance of unknown archaeological resources, Native American human remains, or significant paleontological resources still exists. The Revised Project occupies a smaller area than the Approved Project, and involves installation (and subsequent removal during decommissioning) of fewer solar panels. However, operation and decommissioning activities could still affect previously unidentified remains. These impacts would remain less than significant with implementation of the same mitigation measures adopted for the Approved Project.

**PG&E Upgrades.** Although the PG&E Upgrades would involve only a small amount of ground disturbance (such as for preparation of pulling/stringing sites), the possibility of accidental discovery and disturbance of unknown archaeological resources, Native American human remains, or significant paleontological resources still exists. These risks would be reduced through the implementation of Avoidance and Minimization Measures (AMMs) that would be implemented as part of the PG&E work. These impacts would be less than significant.

**Cumulative Impacts.** The Revised Project would not result in any new or substantially more severe cumulative cultural resources impacts. The Revised Project would not significantly impact any known

cultural or paleontological resources. The Project may impact previously unidentified cultural and paleontological resources during construction and decommissioning. However, any such site(s) are expected to similar to other sites found throughout the region and potential impacts would be mitigated to less than significant through application of mitigation. As a result, the combination of those impacts would not be cumulatively considerable.

**Overall Impacts.** All of the cultural and paleontological resources impacts of the Revised Project, the PG&E Upgrades, and cumulative impacts would be less than significant with implementation of mitigation.

## Geology, Soils, and Minerals

**Revised Solar Project.** The geology, soils, and mineral resources impacts of the Approved Project would be similar to those of the Revised Project. Such impacts are largely site-specific and the geologic or soils conditions on the project site have not changed since 2010 in a way that would result in a new or more severe impact.

Although the total area for grading activities has increased, the topography of the Revised Project area remains flat to gently sloping. Applicant Proposed Measures would ensure that areas of soil disturbance are restored and that stream crossings would be constructed in a manner that minimizes disturbance to drainages. Impacts related to erosion or loss of topsoil would remain less than significant. No new faults or liquefaction zones have been identified in the Project area. No new structures designed for human occupancy would be constructed under the Revised Project. No new mineral resources or active mining operations have been identified. The design for the septic system and leach field has not changed. The soil is still appropriate for an on-site septic system. As with the Approved Project, the Revised Project site includes potentially corrosive and expansive soils that could expose people or structures to potential substantial adverse effects. This impact would remain less than significant with implementation of mitigation.

**PG&E Upgrades.** Installation of the OPGW along the 17-mile upgraded section of the Moss Landing–Panoche transmission line would involve soil disturbance for preparation of pulling/stringing sites as well as for minor improvements to existing access roads. Although this soil disturbance could result in soil erosion, these activities would occur on generally flat terrain and total disturbance areas associated with primary telecommunications upgrades is limited to approximately 5.62 acres. Compliance with existing regulations as well as implementation of PG&E's Avoidance and Minimization Measures would ensure that this impact would be less than significant. Construction of the new and upgraded microwave communication towers would not result in any significant impacts for geology, soils, and minerals.

**Cumulative Impacts.** The Revised Project would not result in any new or substantially more severe cumulative geology, soils and minerals impacts. Geologic materials and faults, minerals, and soils occur at specific locales and are unaffected by activities not acting on them directly and any impacts of the Revised Project or PG&E Upgrades would be site-specific. Therefore Revised Project impacts would not have the potential to combine with similar effects from either the PG&E Upgrades or other projects and would not be cumulatively considerable.

**Overall Impacts.** All of the geology, soils, and minerals impacts of the Revised Project, the PG&E Upgrades, and cumulative impacts would be less than significant with implementation of mitigation.

## Hazards and Hazardous Materials

**Revised Solar Project.** Construction and operation of the Revised Project would not result in any additional or more severe hazards and hazardous materials impacts compared to the Approved Project. The hazards and hazardous materials resources analysis describes the potential hazards (other than geologic hazards) associated with the Revised Project site, infrastructure, activities, and materials that could impact human health and the environment.

The same equipment that was described in the Final EIR would be used to construct the Revised Project. Construction activities would be shorter but more intense. The risk of a leak or accidental spill of hazardous materials would be the same as described in the Final EIR, and the same APMs and mitigation measures would apply. The Revised Project no longer includes evaporation ponds associated with water treatment, and therefore the risk of mobilizing contaminants through brine harvesting no longer exists. With implementation of mitigation measures, this impact would remain less than significant. The nearest school, Panoche Elementary School, is located over a mile from the Revised Project boundary, and therefore the Revised Project would not cause hazardous emissions within one-quarter mile of an existing or proposed school.

The Project site is not listed as a hazardous materials site, and no new nearby hazardous materials sites have been identified. Glint and glare impacts of the Revised Project would be reduced compared to the Approved Project due to the reduced project footprint and the reduced number of PV panels. This impact would remain less than significant. The risk of loss, injury, or death involving wildland fires would remain less than significant with implementation of mitigation. The Revised Project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

Grading and other soil disturbing activities associated with construction of the Revised Project could mobilize the fungus that causes Valley Fever. This impact would be less than significant with implementation of mitigation to educate workers and the public, and to protect construction workers. Generation of disease vectors, such as mosquitos and rodents, would remain less than significant with implementation of mitigation.

**PG&E Upgrades.** Construction and operation (including inspection and maintenance) of the PG&E Upgrades would involve the use of heavy machinery, including helicopters. If not properly maintained, this machinery could leak potentially hazardous materials, including diesel fuel, gasoline, lubricant oils, hydraulic fluid, antifreeze, and transmission fluid. An accidental spill or leak of these materials could contaminate soil, surface water, groundwater, or affect construction workers or the public. Several components of the PG&E Upgrades (including the microwave towers at the Call and Panoche Mountain sites and the OPGW in the Panoche Hills) are located in remote open space where fire risk is generally high. Vehicles idling on dry vegetation or personnel smoking near dry vegetation could ignite a wildfire. These impacts would be less than significant with implementation of AMMs.

**Cumulative Impacts.** The Revised Project would not result in any new or substantially more severe cumulative hazards and hazardous materials impacts The projects that have been constructed or proposed in the area of potential cumulative effects have changed since 2010. However, even considering the new project list, the Revised Project and the PG&E upgrades would not combine with impacts of other projects. There are no other projects in the immediate vicinity of the solar project site or near PG&E upgrades that would present similar hazardous conditions with the potential to result in a cumulatively significant impact

**Overall Impacts.** All of the hazards and hazardous materials impacts of the Revised Project, the PG&E upgrades, and cumulative impacts would be less than significant with implementation of mitigation.

## Land Use and Recreation

### *Revised Solar Project*

The land use and recreation impacts of the Approved Project would be similar to the Revised Project. The land use and recreation section evaluates whether the construction or presence of the Revised Project would disrupt, displace, or divide land uses; conflict with a federal, State, or local land use plan, goal, standards, or policy; reduce or impact visitation to established recreation areas; or increase the use of or change the character to established recreation areas, diminishing the recreational value.

**Land Use.** Like the Approved Project, construction and operation of the Revised Project would displace current grazing use of the site. Land uses within one mile of the Revised Project site remain as described for the Approved Project and include rural residential properties and agricultural uses. The very small, rural, Panoche Elementary School is over one mile from the Revised Project site. The presence of construction crews, the operation of construction equipment and resulting construction noise, and increased construction-related traffic on local roads would be potentially disruptive, particularly during the late evening and early morning hours. The construction traffic and other construction activities for the Revised Project would occur over a shorter time period, but would be more intense compared to the Approved Project. This impact would be less than significant with implementation of mitigation. Although the Project footprint and the amount of permanently disturbed land have decreased under the Revised Project, grazing land still would be permanently displaced by Project implementation. However, all of the parcels that would be required for Project implementation are located on property that is under option for purchase by the Applicant. This impact would remain less than significant.

**Recreation.** Recreational users of the surrounding BLM lands and Mercy Hot Springs could be disrupted by construction-related traffic, which would be more intense than under the Approved Project but would occur over a shorter period of time. This impact would be less than significant. The Revised Project would require a peak daily workforce of up to 550 workers, compared to a peak daily workforce of 200 workers under the Approved Project. Some of these workers could choose to camp on the surrounding BLM land in lieu of other temporary housing options. However, BLM rules and regulations limit camping in the surrounding area to 15 days for every three month period. This restriction would ensure that any excess demand placed on BLM recreational facilities would be less than significant. Construction, operation, and maintenance of the Revised Project would change the character of Panoche Valley and the surrounding hills, which support a variety of recreational opportunities. Traffic and noise impacts would be shorter but more intense under the Revised Project compared to the Approved Project. The noise caused by construction could frighten or displace wildlife, including birds. Construction noise could also impact the recreational experience for campers and hikers in the surrounding hills although only daytime noise levels would be affected by construction. The largest long-term change to the character of the Project site and the surrounding hills would be visual change caused by Project structures and night lighting. Overall, impacts to recreational areas and programs from Revised Project construction and operation would remain adverse but less than significant.

### *PG&E Upgrades*

Construction of the PG&E Upgrades would occur over a period of 12 to 16 weeks. Construction traffic would utilize local roadways in and around the Panoche and Tumey Hills. This increased traffic would temporarily disrupt access to the surrounding hills and increase travel times for visitors (such as hikers,

campers, hunters, and wildlife viewers). However, due to the short construction period and the small number of construction vehicles, this impact would be less than significant. The addition of new microwave towers would result in visual changes that could negatively impact recreational users of the surrounding hills, including campers, hikers, and birdwatchers. The proposed microwave tower will be approximately 100 feet tall located on the Revised Project site would be a visible project component and similar in height to existing transmission structures and proposed tubular steel poles and any other project components in the Panoche Valley. It would be adjacent to the existing transmission line, as well as next to the proposed new substation equipment and PV panels. Due to distance between recreational users of the surrounding BLM lands and the proposed new microwave tower (approximately 3 miles or more), this impact would be less than significant.

**Cumulative Impacts.** The Revised Project would not result in any new or substantially more severe cumulative land use and recreation impacts. The projects that have been constructed or proposed in the area of potential cumulative effects have changed since 2010. However, even considering the new project list, the mitigation measures recommended for land use and recreation as well as traffic mitigation measures, would reduce the contribution of the Revised Project and the PG&E Upgrades to cumulative impacts to less than significant.

**Overall Impacts.** All of the land use and recreation impacts of the Revised Project, the PG&E Upgrades, and cumulative impacts would be less than significant with implementation of mitigation.

## Noise

**Revised Solar Project.** Like the Approved Project, the Revised Project would primarily generate noise impacts during construction, which was comprehensively analyzed in the 2010 Final EIR in the context of a five year phased construction schedule. The Revised Project includes a much shorter construction schedule, which means the overall duration of construction noise would be reduced. Although construction of the Revised Project would result in a shorter period during which construction noise would occur, the compressed construction schedule would cause higher average daily noise levels due to the additional heavy equipment that would be needed to construct the project in a shorter timeframe. As noted in the 2010 Final EIR, the existing ambient noise levels in the project area range from 35 dBA Ldn to 60 dBA Ldn[1] along Panoche Road and Little Panoche Road. The 2010 Final EIR also estimated that noise levels generated from construction would be approximately 95 dBA Leq at 50 feet from the construction activity and would range from 52 dBA Leq to 83 dBA Leq at the nearest sensitive receptor (approximately 200 feet from the closest work area), which could result in a substantial temporary increase of the existing ambient noise levels by more than 5 dBA Ldn. While Revised Project construction activities would be intermittent and more short-term and temporary in nature than the Approved Project, like the 2010 Final EIR's conclusion for the Approved Project, on-site construction noise for the Revised Project would still be considered significant and unavoidable.

Operation of the project would not increase permanent noise levels in the project area by more than 5 dBA. The inverters and transformers that would be installed for each power array could potentially exceed San Benito County's daytime noise level standard of 45 dBA Leq for rural residential land uses, because they are not proposed to be enclosed. Implementation of mitigation would reduce the potential for permanent noise levels to exceed the County's daytime noise level standards or to exceed the ambient noise levels by more than 5 dBA Ldn at the nearest residences to less than significant. With the exception of panel washing, all operational noise associated with inspection and maintenance of the

[1] "dBA Ldn" is a measure of existing noise levels in a logarithmic decibel scale.

Revised Project would be similar to that described in the 2010 Final EIR, and would remain adverse but less than significant. As defined for the Final EIR, washing of panels outside of the daytime hours (7:00 a.m. to 7:00 p.m.) could result in significant operational noise impacts. Implementation of mitigation would reduce this potential adverse impact to less than significant.

**PG&E Upgrades.** Construction of the PG&E Upgrades would include the use of heavy machinery, including helicopters, for a period of 12 to 16 weeks, approximately 2 to 3 weeks at any given work area along the alignment. These construction activities (especially the use of helicopters) could result in a temporary increase in ambient noise levels. However, construction activities would be very temporary and limited to daytime hours (generally 7:00 a.m. to 7:00 p.m.) and common operating procedures to reduce noise (i.e., mufflers, and engine shrouds, limits on idling time of construction equipment) would be utilized to reduce noise. As such, this impact would be adverse, but less than significant.

**Cumulative Impacts.** The Revised Project would not result in any new or substantially more severe cumulative noise impacts. The projects that have been constructed or proposed in the area of potential cumulative effects have changed since 2010, as described in Section D. However, even considering the new project list, the Revised Project would not combine with impacts of the PG&E Upgrades or other projects because the timeframe for construction of the other projects would not overlap and, even if construction overlapped, these project are geographically too far to contribute to any cumulative noise impacts . Therefore, the contribution of the construction noise from the PG&E Upgrades and the Revised Project would not result in a cumulatively significant impact.

**Overall Impacts.** Construction of the Revised Project would result in a significant and unavoidable impact to ambient noise levels. All of the other noise impacts of the Revised Project, the PG&E Upgrades, and cumulative impacts would be less than significant with implementation of mitigation.

## Population and Housing

**Revised Solar Project.** The population and housing impacts of the Approved Project would be similar to the Revised Project. The population and housing analysis includes an assessment of whether the project labor force would require housing beyond the supply of local housing and temporary housing facilities and whether the project would induce population growth due to the need for workers from outside the project study area.

The required permanent labor force remains unchanged. The size of the peak daily construction work-force has increased from 200 workers to 550 workers. The duration of construction labor demand has decreased from approximately 5 years to approximately 18 months. Considering the continued high unemployment in the three-county study area, this impact would remain beneficial.

No new housing would be constructed in connection with the Revised Project. Housing vacancy rates have increased substantially from 2010 to 2014 in all three counties that are included in the Project study area (DOF, 2014). In Fresno County, the vacancy rate has increased from 6.4% to 8.3%. In San Benito County, the vacancy rate has increased from 3.8% to 6.0%. In Santa Clara County, the vacancy rate has increased from 2.3% to 4.4%. Neither the temporary nor the permanent workforce associated with the Revised Project would place a demand on housing that would exceed local supply. This impact would remain less than significant. Although the peak daily construction workforce has increased from 200 workers to 550 workers, these workers would be drawn primarily from the existing population within the three-county Project study area and would not contribute to substantial population growth. Also, any construction workers that relocate due to the Revised Project would represent a temporary

increase in population. The size of the permanent labor force required for operation has not changed. Therefore, this impact would remain less than significant.

**PG&E Upgrades.** No impacts to population and housing would occur as a result of the PG&E Upgrades. Construction would be performed by existing PG&E staff over a period of 12 to 16 weeks. Construction activities would not create a substantial demand for labor or a change in local employment. No additional housing would be required, and the supply of local and temporary housing would not be exceeded. Construction of the PG&E Upgrades would not induce population growth.

**Cumulative Impacts.** The Revised Project would not result in any new or substantially more severe cumulative population and housing impacts. The projects that have been constructed or proposed in the area of potential cumulative effects have changed since 2010. However, even considering the new project list, the Revised Project would not combine with impacts of the PG&E Upgrades or other projects to result in a cumulatively considerable impact.

**Overall Impacts.** All of the population and housing impacts of the Revised Project, the PG&E Upgrades, and cumulative impacts would be less than significant.

### Public Services, Utilities, and Service Systems

**Revised Solar Project.** The public services, utilities, and service systems impacts of the Approved Project would be similar to the Revised Project. The increase in peak labor workforce and peak daily traffic volumes would place additional demands on fire and police protection services. With implementation of the previously recommended and adopted APMs and mitigation and the minor changes to certain measures described in the SEIR, this increase in peak labor workforce and traffic would not lead to more severe public service impacts.

Analysis of impacts to public services, utilities, and service systems includes a review of changes in demand for public services (i.e., fire protection, police protection, schools, and hospitals) and for natural gas, electricity, local water, wastewater, and solid waste facilities during construction and operation of the Revised Project.

The size of the peak daily construction workforce has increased from approximately 200 workers (considered in the 2010 Final EIR) to 550 workers in the Revised Project. The duration of construction has decreased from approximately 5 years to approximately 18 months. Although the structural footprint and construction timeline of the Revised Project would be reduced compared to the Approved Project, both construction and operation of the Revised Project would place a demand on fire protection services that substantially exceeds the existing service capacity. With implementation of mitigation, impacts on fire protection services would be less than significant.

On-site security for the Revised Project would be provided for in the same manner as described for the Approved Project. However, the Revised Project would place substantial additional demand for support on California Highway Patrol (CHP) officers or County Sheriff deputies who are responsible for traffic safety due to the increased construction personnel and resulting traffic. With implementation of mitigation, impacts on police protection services would remain less than significant. The permanent labor force for the Revised Project remains unchanged and no impacts to school services would occur because the permanent workforce would be drawn from the surrounding communities and no additional housing or schools would be required.

The water supply and wastewater facilities for the Revised Project would remain as described for the Approved Project. No new public water supply systems would be required during construction or

operation of the Revised Project. Wastewater would be discharged through a septic tank and leach field. Demands would not be placed on public water supply and wastewater systems. Given the smaller solar field, the impact on solid waste facilities would be less intense. Overall, adverse impacts to local water, wastewater, and solid waste facilities would be less than significant.

**PG&E Upgrades.** None of the impacts addressed for the solar project would occur as a result of construction or operation of the PG&E Upgrades due to the small number of personnel required, the very short-term nature (12-16 weeks) of the construction activities, and the small permanent changes to PG&E facilities that would result. The PG&E Upgrades would be constructed by existing PG&E personnel, and no occupied structures would be constructed. The upgrades would not place any additional demands on public utilities or services.

**Cumulative Impacts.** The Revised Project would not result in any new or substantially more severe cumulative public service and utilities impacts. The projects that have been constructed or proposed in the area of potential cumulative effects have changed since 2010. The operation of the Revised Project and the construction or operation of the PG&E Upgrades would not result in a negative impact on the performance objectives for police or fire services or an increase in school enrollment. As with the Revised Project, the projects included in the cumulative projects list would be expected to implement traffic control measures, where practicable, to ensure that emergency access is not obstructed for fire and police services. Furthermore, with implementation of mitigation the Revised Project would not combine with impacts of other projects to result in a cumulatively significant impact. Therefore, the Revised Project's contribution would not be cumulatively considerable and would be less than significant with mitigation incorporated.

**Overall Impacts.** All of the public services, utilities, and service systems impacts of the Revised Project, the PG&E Upgrades, and cumulative impacts would be less than significant with implementation of mitigation.

## Transportation and Circulation

**Revised Solar Project.** The transportation and circulation impacts of the Approved Project during the 18 month construction period would be more severe with the Revised Project due to the increased peak daily traffic volumes. The Revised Project would add 1,150 one-way vehicle trips to the existing traffic on these roads, compared to 298 trips with the Approved Project, which could potentially reduce road safety. Mitigation measures have been strengthened to improve project traffic safety and ensure that impacts remain less than significant.

The increase in traffic would place additional physical stress on local roadways. With recommended changes to mitigation measures, this increase in peak traffic would not lead to more severe transportation and circulation impacts. The transportation and circulation analysis indicates whether the construction or presence of the Revised Project would substantially increase congestion and travel delays on regional and local roadways. It also considers whether project construction or operation would create unsafe conditions on public roadways or conflict with adopted policies, plans, or programs supporting alternative transportation modes.

Traffic-related impacts during operations and decommissioning of the Revised Project would be essentially the same as for the Approved Project. Construction impacts would occur during a shorter time period than described in the 2010 Final EIR; construction would take place over 18 months rather than over 5 years. Therefore, traffic impacts would be shorter in duration, but more intense over the 18 month construction period. Though the project traffic would result in an increase in traffic along each of

the roadways, the increase will still be within roadway capacities. However, because the substantial increase in daily and hourly vehicle traffic may increase the likelihood of vehicle collisions, mitigation would be required to reduce this impact to less than significant.

Traffic volume data collected in 2010 along Panoche and Little Panoche Roads showed volumes of existing traffic that were well below capacities of each roadway. Although the addition of project traffic would result in an increase in traffic along each of these roadways, such an increase would have little effect on roadway operations and the total volume of traffic would remain within the roadway capacities. In addition, under the Revised Project work schedule, employees would generally be coming to and from the Project site during non-peak times when few other vehicles are using these roadways. With implementation of mitigation, impacts related to traffic congestion would remain less than significant.

**PG&E Upgrades.** PG&E Upgrades would require minimal personnel and very limited material and equipment deliveries. Work areas for PG&E Upgrades would be accessed from existing roads, including Panoche Road east of Little Panoche Road. PG&E's OPGW installation along the 17-mile segment would be completed in approximately 12-16 weeks, and at any one location the construction would take from 2 to 3 weeks. Helicopters would be used to transport electrical workers to the towers, deliver materials, and assist in pulling the OPGW from tower to tower. Approximately 12-20 construction personnel would be utilized during an approximate 16 week period for installation of the OPGW. Construction of new microwave communication towers would take approximately 2-6 months at each site and would utilize existing access roads. PG&E would implement standard traffic control measures to reduce any impacts to highway safety. Because of the low volume of existing traffic on area roads, the limited work involved, and the short duration of construction activities, this impact would be less than significant with implementation of PG&E's AMMs.

**Cumulative Impacts.** The Revised Project would not result in any new or substantially more severe cumulative traffic and transportation impacts. With mitigation and APMs, and AMMs, construction of the Revised Project and the PG&E Upgrades would result in less than significant impacts to transportation. The worst–case trip generation for the solar project would be approximately 1,150 peak trips. The traffic generated during construction activities for the Revised Project would occur for a short period of time (approximately 18 months) and would be dispersed throughout different portions of the project route. Operation and maintenance traffic to and from the Revised Project would be very similar to existing conditions and is not expected to conflict with applicable congestion management programs. Other developments addressed in the updated cumulative projects list may generate traffic during construction or operation, but are not located in areas where the project roads would be directly affected. Other projects listed in the cumulative projects list would obtain approvals from relevant agencies, which would likely require mitigation measures related to transportation and traffic impacts, if necessary. Therefore the contribution of the Revised Project and the PG&E Upgrades to cumulative impacts would not be cumulatively considerable and would be less than significant.

**Overall Impacts.** All of the transportation and circulation impacts of the Revised Project, the PG&E Upgrades, and cumulative impacts would be less than significant with implementation of mitigation.

## Water Resources

**Revised Solar Project.** Like the Approved Project, the Revised Project would utilize existing wells and local groundwater during construction and operation. The Revised Project, however, would result in an increase in peak groundwater usage during the 18-month construction period, placing additional short-term strain on the underlying aquifer. However, previously adopted mitigation measures have been

strengthened to test and monitor groundwater levels, so the analysis concludes that the increased peak groundwater demand would not result in any additional or more severe impacts. Analysis of water resources includes an assessment of whether the accelerated construction schedule of Revised Project would substantially deplete local groundwater supplies, violate any water quality standard or waste discharge requirements, or substantially alter the existing drainage pattern of the site resulting in flooding offsite. It also evaluates whether construction activities would place structures in a floodplain resulting in flooding, flood diversions, or erosion. The SEIR addresses whether construction or operation of the project could cause an accidental release of contaminants or create any substantial new sources of polluted runoff.

The Applicant's groundwater assessment report concludes that predicted drawdown levels during the construction phase and long-term operation are unlikely to significantly impair existing water supply well use in the valley. However, due to the lack of detailed information about the groundwater basin characteristics, which was explained in the 2010 Final EIR, the potential for the Revised Project's water use to negatively affect groundwater remains potentially significant, and mitigation is required. There is a potential for the Revised Project's water use to lower the water levels in off-site wells (those outside the solar project boundaries), which was an impact that was previously identified and analyzed in the 2010 Final EIR. In order to ensure that this impact does not become severe due to the accelerated construction schedule, implementation of two previously adopted, but modified comprehensive mitigation measures would be required. These mitigation measures would ensure that groundwater extraction for the Revised Project would be properly monitored and that drawdown at nearby private wells would not exceed five feet. As a result of implementing these two measures, the impact of the Revised Project's water use would be less than significant.

The total graded area for the Project would increase from 200 acres (for the Approved Project) to 392 acres (with the Revised Project). The Revised Project also includes setbacks from existing drainages. Because the majority of the Project site occupies relatively flat terrain, it is not anticipated that the grading activities for the Revised Project would result in changes to drainage patterns, create flooding on- or off-site, or degrade water quality through erosion and sedimentation. Similarly, flooding would not result from the creation of impervious surfaces or the placement of structures in a floodplain. These impacts would remain less than significant.

The same equipment that was described in the Final EIR would be used to construct the Revised Project. The Revised Project would compress the construction schedule from five years to approximately 18 months. Construction activities would be shorter but more intense. The risk of a leak or accidental spill of hazardous materials would be the same as described in the 2010 Final EIR, and the same mitigation measures would apply. With implementation of mitigation, this impact would remain less than significant.

**PG&E Upgrades.** The PG&E Upgrades would involve a minor amount of soil disturbance for preparation of pulling/stringing sites and construction of approximately 9 new wood poles along the upgraded portion of the transmission line, and excavation and construction of the new microwave communication towers. No surface water resources exist on or near the microwave communication tower sites. The three unnamed drainages within the ROW of the upgraded portion of the transmission line will not be disturbed by the upgrades, as no work would be performed within in the bed and bank of the drainages. Any erosion caused by the PG&E Upgrades would be minimized through implementation of required permits and protective measures. This impact would be less than significant.

Construction of the PG&E Upgrades would involve the use of heavy machinery, including helicopters and other motorized equipment. This machinery could leak potentially hazardous materials, including diesel

fuel, gasoline, lubricant oils, hydraulic fluid, antifreeze, and transmission fluid. A leak or accidental spill of these materials could contaminate nearby waterways, including Panoche Creek and three unnamed drainages. This risk of contamination would be reduced through compliance with existing regulations and implementation of AMMs, resulting in this impact being less than significant.

**Cumulative Impacts.** The Revised Project would not result in any new or substantially more severe cumulative water resources impacts. The projects that have been constructed or proposed in the area of potential cumulative effects have changed since 2010. However, even considering the new project list, the Revised Project would not combine with impacts of the PG&E Upgrades or other projects because they would occur within different watersheds and basins, so there would not be a cumulatively significant impact.

**Overall Impacts.** All of the water resources impacts of the Revised Project, the PG&E Upgrades, and cumulative impacts would be less than significant with implementation of mitigation.

### ES.4.2 Growth-Inducing Effects

Section 15126.2(d) of the CEQA Guidelines provides the following guidance on growth-inducing impacts: a project is identified as growth inducing if it "could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment." The Revised Project would have no new or substantially more severe potential growth inducing components than the Approved Project. Construction or operational employment for the Revised Project would be unlikely to induce growth in the area.

### ES.4.3 Significant Irreversible Commitment of Resources

Section 15126.2(c) of the CEQA Guidelines defines an irreversible impact as an impact that uses nonrenewable resources during the initial and continued phases of the project. Irreversible impacts can also result from permanent loss of habitat, damage caused by environmental accidents associated with project construction, or operational resource use. Like the Approved Project, construction of the Revised Project would necessitate some use and long-term conversion of agricultural land and vegetation and habitat removal. Development of the Revised Project would not change the previously defined significant irretrievable commitment of habitat for threatened and endangered species, or the commitment of nonrenewable resources during project construction and ongoing utility services during project operations. Similarly, the Revised Project would also consume nonrenewable resources (oil, gas, etc.) during construction and operation. Compliance with all applicable building codes, County policies and goals, and the mitigation measures adopted in 2010 and those proposed for modification in this EIR would ensure that all natural resources are conserved to the maximum extent possible.

## ES.5 Areas of Controversy

Pursuant to CEQA Guidelines Section 15132(b)(2), areas of controversy and issues to be resolved that are known to the County or were raised during the scoping process for the Supplemental EIR include:

- Loss of biological resources and their habitat (including giant kangaroo rat, San Joaquin kit fox, mountain plover, and the blunt-nose leopard lizard and other protected species), and potential restrictions to wildlife movement;
- Effects of drought on biological resources and groundwater levels, and potential effects of climate change;

- Impacts to Panoche Elementary School students due to shorter, more intense construction period;
- Cumulative impacts of all the solar projects in the region;
- Increased daily traffic due to shorter construction period;
- Potential project water use to lowering groundwater levels;
- A variety of suggested alternatives.

This is not an exhaustive list of areas of controversy, but key issues that were raised during the scoping process. The 2010 Final EIR addressed each of these areas of concern or controversy in detail, examined project-related and cumulative environmental impacts, identified significant adverse environmental impacts, and proposed mitigation measures designed to reduce or eliminate potentially significant impacts. Appendix 1 to this EIR includes the 2014 Notice of Preparation and the response letters submitted.

## ES.6 Issues to be Resolved

Section 15123(b)(3) of the CEQA Guidelines requires the summary section of an EIR to identify any "issues to be resolved including the choice among alternatives and how to mitigate significant effects." The major issues on the Approved Project were resolved by the County in its 2010 decision process, and this Supplemental EIR documents the following major issues of concern:

- In order to complete construction in 18 months, the daily traffic levels for the Revised Project would be substantially greater than those of the Approved Project. Mitigation has been modified to ensure that impacts remain less than significant.
- To complete grading quickly prior to construction, groundwater usage for dust control watering could be much more intensive. Mitigation has been modified to ensure that impacts remain less than significant.

## ES.7 Summary of Alternatives Analysis

The 2010 Final EIR presented a complete analysis of alternatives, compliant with Section 15126.6 of the CEQA Guidelines, which states that an EIR must address “a range of reasonable alternatives to the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives.” Based on the significant and unavoidable impacts of the originally proposed project on aesthetics, biological resources, and noise, along with the proposed project objectives, five alternatives (including the No Project Alternative) were considered. One of the five alternatives, “Alternative A Revised,” was approved by the County.

### ES.7.1 Alternatives Considered

The 2010 Final EIR analyzed four alternatives and described five additional alternatives that were considered but eliminated from further analysis. As described in Sections ES.1, the County approved one of the alternatives that was developed and analyzed in the Final EIR: “Alternative A Revised.” In 2014, that Approved Project has been further reduced in size and reconfigured to create the Revised Project evaluated in Section C of this Supplemental EIR. Alternatives evaluated in the 2010 Final EIR included: Alternative A Revised, Alternative B Revised, Alternative C Revised, the Westlands CREZ Alternative, and the No Project Alternative. No new alternatives are evaluated in this Supplemental EIR, and no new

impact analysis is presented for alternatives, but the status of the Westlands CREZ Alternative has been updated. The impacts of the Revised Project, as defined in Section C of this Supplemental EIR, remain consistent with the conclusions presented in the 2010 Final EIR.

### Alternative A Revised

Alternative A Revised is the configuration that was approved by the County in 2010. It was developed by the Applicant to avoid the highest density occupied giant kangaroo rat and blunt-nosed leopard lizard habitat by increasing the density of PV panels on the western side and northern end of the proposed project site and removing panels from the southern side and southeastern corner of the proposed site. A key element of this alternative was the provision of a biological conservation easement on the 1,683 acres of the project site that would be avoided by the rearrangement of panels. This alternative would also reduce panel height to 12.5 feet (compared with 25 feet for the proposed project). This alternative would be located on approximately 3,202 acres and would generate 399 MW of power, compared with Alternative A Revised eliminated the significant impacts to biological resources, resulting in less than significant impacts. In addition, given the reduced footprint reduced the severity of impacts to aesthetics, noise, agriculture, cultural resources, and water resources.

### Alternative B Revised

Alternative B Revised was about 72 percent of the size of the originally proposed project and about 57 percent of the size of Alternative A Revised. It was located on approximately 1,394 acres and would generate 183 MW of power. This alternative was designed to reduce impacts to high-quality giant kangaroo rat habitat and provide a north-south San Joaquin kit fox movement corridor along the east side of the valley. This alternative would also mitigate habitat impacts with a biological conservation easement on 3,491-acres of the project site that would be avoided by the rearrangement of panels. This alternative would also reduce panel height to 12.5 feet.

Like Alternative A Revised, this alternative eliminated the significant impacts on biological resources, resulting in less than significant impacts. In addition, given the reduced footprint, Alternative B Revised reduced the severity of impacts to aesthetics, noise, agriculture, cultural resources, and water resources.

### Alternative C Revised

Alternative C Revised was located on approximately 862 acres and would generate 110 MW of power. This alternative provided both north-south and east-west wildlife movement corridors, and enabled the mitigation of impacts to biological resources on the site to less than significant levels. This alternative would also mitigate habitat impacts with a biological conservation easement on 4,023-acres of the project site that would be avoided by the rearrangement of panels. This alternative would also reduce panel height to 12.5 feet.

Like Alternatives A and B Revised, this alternative eliminated the significant impacts on biological resources, resulting in less than significant impacts. In addition, given the reduced footprint, Alternative C Revised reduced the severity of impacts to aesthetics, noise, agriculture, cultural resources, and water resources.

### Westlands CREZ Alternative

This alternative was included in response to scoping comments suggesting use of more disturbed agricultural lands with less valuable habitat for biological resources. The Westlands Water District has a

lease contract with Westside Holdings, a private investment group, to develop the Westlands Solar Park on approximately 30,000 acres of fallow agriculture land for up to 5,000 MW of solar power generation. The farmland was retired over the past decade because of a combination of water shortages and salt buildup that makes the soil unsuitable for crop production (Sheehan, 2010). According to the developer, Westside Holdings LLC, the Westlands Solar Park in Kings and Fresno Counties has a potential solar resource of up to 2,400 MW.

The Westlands Solar Park is being made available to solar developers for phased generation development. Since the County approved the Approved Project in 2010, four events have been made public at Westlands:

- Two solar projects (18 and 15 MW) have been constructed at Westlands.
- In July 2014, Los Angeles-based real estate investment firm CIM Group announced it has partnered with Westside Holdings, LLC, to invest in development of solar resources at Westlands (Lindt, 2014). No development specifics have been made available (Lindt, 2014).
- In 2013, the City of Anaheim has executed a Power Purchase Agreement with Westlands for a 2 MW project to be located just south of Naval Air Station Lemoore, with phased construction of a 2-MW project followed by a 20-MW solar farm (Anaheim, 2013; Lindt, 2014).
- On March 15, 2013, Westlands issued a Notice of Preparation for a Master EIR for development within the solar park (Westlands, 2013). In the NOP, the proposed components of the solar area are defined as generation facilities of up to 2,400 MW, transmission upgrades in the Henrietta-Gates corridor, Path 15 transmission upgrades, and Gates-Gregg transmission upgrades. The Draft Master EIR has not yet been published.

The Final EIR found that, while many of the impacts of the Proposed Project would be similar to the impacts of a solar project at the Westlands CREZ Alternative, this alternative would likely have substantially fewer impacts to biological resources than the proposed project because it has been actively farmed for many years and is not considered high-quality habitat. In addition, it would have reduced impacts to aesthetics and agriculture, but would potentially create greater impacts to water resources.

## ES.7.2 Alternatives Eliminated from Further Consideration

The 2010 Final EIR considered several additional alternatives, but eliminated them from detailed consideration. They are described briefly below.

- **Site Alternatives**, including a brownfield alternative and a Mojave Desert BLM land alternative, were eliminated because development of brownfield sites present regulatory challenges and liability hurdles and the feasibility of the project is uncertain. Several large Mojave Desert sites have been developed since 2010 and many also present significant impacts to biological resources.
- **Distributed Solar Photovoltaic Alternative**, in which generation would occur in smaller projects (up to 20 MW, including rooftops). These distributed generation (or "DG") projects are rapidly being developed in California in addition to utility-scale projects. In 2010, the Final EIR reported over 500 MW of distributed solar PV systems existing in California. As of late 2014, California has over 4,800 MW of all types of distributed renewable systems that includes projects 20 MW or smaller with another 2,200 MW in development.
- **Wind Alternative** was eliminated due to its ground disturbance, more severe visual impacts, and lack of specific wind resources in the San Benito County area.

- **Conservation and Energy Demand Reduction Alternative** was eliminated as a separate alternative because it is the focus of separate and ongoing policy initiatives in California, and will continue to grow in addition to utility-scale projects.

### ES.7.3 No Project Alternative

The No Project Alternative is described and analyzed in Section E.5 of the 2010 Final EIR. The 2010 Final EIR defined the No Project Alternative in which construction and operation of Panoche Valley Solar Farm would not occur. The baseline environmental conditions for the No Project Alternative are the same as for the proposed project. The baseline conditions would continue to occur into the future, undisturbed, in the absence of project-related construction activities, unless other development occurred on the site.

The objectives of the proposed project would remain unfulfilled under the No Project Alternative. This means that the contribution of the proposed project to meeting California's renewable generation goals would not occur. Three possibilities for the No Project Alternative were considered in the 2010 Final EIR:

1. The current uses of the project site would be retained.
2. Development of other solar projects could occur in the Panoche Valley.
3. Development of solar projects could occur in other parts of the County or in other California counties.

### ES.7.4 Comparison of Alternatives and Environmentally Superior Alternative

The Final EIR compared the four retained alternatives with the proposed project. The County identified the Environmentally Superior Alternative, as required by CEQA Guidelines Section 15126.6(d) and (e)(2). Based on the analysis presented in Section E, the Westlands CREZ Alternative would be the environmentally superior alternative based on a significant reduction in impacts to biological resources. However, it was noted that biological surveys had not been performed on the Westlands CREZ Alternative and would be required to confirm this conclusion. San Benito County does not have the authority to approve the Westlands CREZ Alternative or require the Applicant to move the proposed project to this location. As such, the analysis of the Westlands CREZ Alternative serves to foster informed decision-making and public participations but functions essentially as the No Project Alternative (CEQA Guidelines Section 15126.6(a)).

Based on the analysis presented in Section E and on the impact analysis for the proposed project presented in Section C of this EIR, **Alternative C Revised** was identified as the environmentally superior alternative among the remaining alternatives. This alternative is selected because it would have a smaller footprint than the proposed projects and the other on-site alternatives, and it would eliminate the most severe significant impacts of the proposed project.

## ES.8 Summary of Impacts and Mitigation Measures

The tables on the following pages provide a summary of the impacts of the Revised Project and of the PG&E Upgrades. Not all impacts from the 2010 Final EIR apply to the Revised Project and PG&E Upgrades. Impacts from the 2010 Final EIR that no longer apply are not shown in the tables below. The mitigation measures associated with each impact are to be implemented by the project applicant in order to reduce the environmental impacts to a less than significant level.

Some of the impacts of the Revised Project are minimized by implementation of Applicant Proposed Measures (APMs). These measure are not listed in the tables below, but are presented in Section B.10 of this SEIR. The impacts of the PG&E Upgrades (Table IST-5) are all less than significant with incorporation

of Avoidance and Minimization Measures (AMMs). The AMMs are presented in Section B.11.3 of this SEIR.

In accordance with CEQA, the summary tables identify the following types of potential impacts associated with the proposed development:

**Revised Project:**

- Significant and unmitigable impacts (Class I) – Table IST-1
- Significant impacts, mitigable to less than significant with mitigation (Class II) – Table IST-2
- Adverse impacts, less than significant (Class III) – Table IST-3
- Beneficial impacts (Class IV) – Table IST-4

**PG&E Upgrades:**

- Adverse impacts, less than significant (Class III) – Table IST-5

**Table IST-1. Summary of Significant Unmitigable (Class I) Impacts for the Revised Project**

| Impact | Mitigation Measure |
|---|---|
| Aesthetics | |
| Impact AE-1: Long-term visibility of construction activities, equipment, and night lighting | AE-1.1: Reduce night lighting impacts |
| Impact AE-3: Proposed project would introduce structure contrast, developed character, view blockage, and glare (KVPs 1 through 4) | AE-3.1: Treat surfaces of project structures and buildings |
| Noise | |
| Impact NS 1: Construction noise would result in a substantial temporary or periodic increase in ambient noise levels which would substantially disturb sensitive receptors | NS-1.1: Shield construction staging areas.<br>NS-1.2: Implement noise-reducing features and practices for construction noise.<br>NS-1.3: Provide advanced notice of construction.<br>NS-1.4: Limit pile driving activities<br>BR-16.2: Minimize impacts of foundation support installations |
| Impact NS 2: Construction noise may violate local rules, standards, and/or ordinances | NS-1.1: Shield construction staging areas<br>NS-1.2: Implement noise-reducing features and practices for construction noise<br>NS-1.3: Provide advanced notice of construction<br>NS-1.4: Limit pile driving activities<br>BR-16.2: Minimize impacts of foundation support installations |

**Table IST-2. Summary of Significant but Mitigable (Class II) Impacts for the Revised Project**

| Impact | Mitigation Measure(s) |
|---|---|
| Aesthetics | |
| Impact AE-2: Long-term visibility of land scars and vegetation clearance | BR-G.3: Develop and implement a Habitat Restoration and Revegetation Plan |
| Agriculture | |
| Impact AG-1: Project would convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared by the Department of Conservation's (DOC's) Farmland Mapping and Monitoring Program (FMMP), to non-agricultural use | BR-1.2: Develop and implement a Grazing Plan for the project site.<br>BR-G.3: Develop and implement a Habitat Restoration and Revegetation Plan<br>BR-G.5: Create permanent conservation easements as compensation for impacts to biological resources |

**Table IST-2. Summary of Significant but Mitigable (Class II) Impacts for the Revised Project**

| Impact | Mitigation Measure(s) |
|---|---|
| Impact AG-2: Project would conflict with Williamson Act contracts, existing zoning for agricultural use, or objectives in the County General Plan's Agriculture and Conservation and Open Space Elements | AG-2.1: Create agricultural conservation easement(s)<br>BR-1.2: Develop and implement a Grazing Plan for the project site<br>BR-G.3: Develop and implement a Habitat Restoration and Revegetation Plan<br>BR-G.5: Create permanent conservation easement/s as compensation for impacts to biological resources<br>BR-G.6: Develop and implement Habitat Mitigation and Monitoring Plan for mitigation land |
| Impact AG-3: Construction and operation of project would impair agricultural use of nearby properties | AQ-1.1: Reduce fugitive dust<br>BR-1.1: Prepare and implement a Weed Control Plan<br>BR-1.2: Develop and implement a Grazing Plan for the project site<br>BR-G.5: Create permanent conservation easement/s as compensation for impacts to biological resources<br>LU-1.1: Establish construction liaison<br>LU-1.2: Provide advance notification of construction<br>LU-1.3: Provide quarterly construction updates<br>WR-1.1: Groundwater Monitoring and Reporting Plan<br>WR-6.1: Accidental spill control and environmental training<br>WR-6.2: Store fuels and hazardous materials away from sensitive water resources<br>WR-6.3: Maintain vehicles and equipment |
| Air Quality | |
| Impact AQ 1: Construction activities would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants | AQ-1.1: Reduce fugitive dust<br>AQ-1.2: Designate a dust complaint monitor |
| Impact AQ 4: Project-related emissions may be inconsistent with relevant air quality management plans | AQ-1.1: Reduce fugitive dust<br>AQ-1.2: Designate a dust complaint monitor |
| Biological Resources | |
| Impact BR-1: Construction activities would result in temporary and permanent losses of native vegetation | BR-G.1: Implement a Worker Environmental Education Program<br>BR-G.2: Implement Best Management Practices<br>BR-G.3: Develop and implement a Habitat Restoration and Revegetation Plan<br>BR-G.4: Implement biological construction monitoring<br>BR-G.5: Create permanent conservation easements as compensation for impacts to biological resources<br>BR-G.6: Develop and implement Wetland Habitat Mitigation and Monitoring Plan and a Habitat Management Plan for mitigation lands<br>BR-1.1: Prepare and implement a Weed Control Plan<br>BR-1.2: Develop and implement a Grazing Plan for the project site |
| Impact BR-2: The project could result in the establishment and spread of noxious weeds, invasive and non-native plants | BR-G.1: Implement a Worker Environmental Education Program.<br>BR-G.2: Implement Best Management Practices.<br>BR-G.3: Develop and implement a Habitat Restoration and Revegetation Plan<br>BR-G.4: Implement biological construction monitoring<br>BR-1.1: Prepare and implement a Weed Control Plan<br>BR-1.2: Develop and implement a Grazing Plan for the project site. |

**Table IST-2. Summary of Significant but Mitigable (Class II) Impacts for the Revised Project**

| Impact | Mitigation Measure(s) |
|---|---|
| Impact BR-3: The project could disturb special-status plant species or their habitat | BR-G.1: Implement a Worker Environmental Education Program<br>BR-G.2: Implement Best Management Practices<br>BR-G.3: Develop and implement a Habitat Restoration and Revegetation Plan<br>BR-G.4: Implement biological construction monitoring<br>BR-G.5: Create permanent conservation easements as compensation for impacts to biological resources<br>BR-G.6: Develop and implement Habitat Mitigation and Monitoring Plan and a Habitat Management Plan for mitigation lands<br>BR-1.1: Prepare and implement a Weed Control Plan<br>BR-1.2: Develop and implement a Grazing Plan for the project site<br>AQ-1.1: Reduce Fugitive Dust |
| 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 | BR-G.1: Implement a Worker Environmental Education Program<br>BR-G.2: Implement Best Management Practices<br>BR-G.3: Develop and implement a Habitat Restoration and Revegetation Plan<br>BR-G.4: Implement biological construction monitoring<br>BR-G.5: Create permanent conservation easements as compensation for impacts to biological resources<br>BR-G.6: Develop and implement Habitat Mitigation and Monitoring Plan for and a Habitat Management Plan mitigation lands<br>BR-1.1: Prepare and implement a Weed Control Plan<br>BR-1.2: Develop and implement a Grazing Plan for the project site<br>AQ-1.1: Reduce Fugitive Dust |
| 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 | BR-G.1: Implement a Worker Environmental Education Program<br>BR-G.2: Implement Best Management Practices<br>BR-G.3: Develop and implement a Habitat Restoration and Revegetation Plan<br>BR-G.4: Implement biological construction monitoring<br>BR-G.5: Create permanent conservation easements as compensation for impacts to biological resources<br>BR-G.6: Develop and implement Habitat Mitigation and Monitoring Plan and a Habitat Management Plan for mitigation lands<br>BR-1.1: Prepare and implement a Weed Control Plan<br>BR-1.2: Develop and implement a Grazing Plan for the project site<br>BR-6.1: Conduct pre-construction surveys for nesting and breeding birds and implementation of avoidance measures<br>AQ-1.1: Reduce Fugitive Dust |

**Table IST-2. Summary of Significant but Mitigable (Class II) Impacts for the Revised Project**

| Impact | Mitigation Measure(s) |
|---|---|
| Impact BR-7: The project could result in injury or mortality of, and loss of habitat for, terrestrial California Species of Special Concern | BR-G.1: Implement a Worker Environmental Education Program<br>BR-G.2: Implement Best Management Practices<br>BR-G.3: Develop and implement a Habitat Restoration and Revegetation Plan<br>BR-G.4: Implement biological construction monitoring<br>BR-G.5: Create permanent conservation easements as compensation for impacts to biological resources<br>BR-G.6: Develop and implement Habitat Mitigation and Monitoring Plan and a Habitat Management Plan for mitigation lands<br>BR-1.1: Prepare and implement a Weed Control Plan<br>BR-1.2: Develop and implement a Grazing Plan for the project site<br>BR-6.1: Conduct pre-construction surveys for nesting and breeding birds and implementation of avoidance measures<br>BR-7a.1: Conduct focused pre-construction surveys for western spadefoot toad and implement avoidance measures<br>BR-7a.2: Conduct focused pre-construction surveys for San Joaquin coachwhip and coast horned lizard and implement avoidance measures<br>BR-7b.1: Conduct pre-construction surveys for non-breeding birds designated as California Species of Special Concern<br>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<br>BR-14.1: Implement Avian Power Line Interaction Committee guidelines (APLIC).<br>AQ-1.1: Reduce fugitive dust |
| Impact BR-8: The project could result in the loss of vernal pool fairy shrimp, and loss of occupied vernal pool fairy shrimp habitat | BR-G.1: Implement a Worker Environmental Education Program.<br>BR-G.2: Implement Best Management Practices.<br>BR-G.3: Develop and implement a Habitat Restoration and Revegetation Plan<br>BR-G.4: Implement biological construction monitoring.\<br>BR-G.5: Create permanent conservation easements as compensation for impacts to biological resources<br>BR-G.6: Develop and implement Habitat Mitigation and Monitoring Plan and a Habitat Management Plan for mitigation lands<br>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>BR-8.3: Avoid seasonal depressions and known waterbodies.<br>AQ-1.1: Reduce fugitive dust. |
| Impact BR-9: The project could result in the loss of individual California tiger salamanders or the permanent or temporary loss of CTS habitat | BR-G.1: Implement a Worker Environmental Education Program<br>BR-G.2: Implement Best Management Practices<br>BR-G.3: Develop and implement a Habitat Restoration and Revegetation Plan<br>BR-G.4: Implement biological construction monitoring<br>BR-G.5: Create permanent conservation easements as compensation for impacts to biological resources<br>BR-G.6: Develop and implement Habitat Mitigation and Monitoring Plan and a Habitat Management Plan for mitigation lands<br>BR-9.1: Conduct pre-construction surveys for California tiger salamander and implement avoidance measures<br>AQ-1.1: Reduce fugitive dust |

**Table IST-2. Summary of Significant but Mitigable (Class II) Impacts for the Revised Project**

| Impact | Mitigation Measure(s) |
|---|---|
| Impact BR-10: The project would result in the loss of individual blunt-nosed leopard lizards and their habitat | BR-G.1: Implement a Worker Environmental Education Program<br>BR-G.2: Implement Best Management Practices<br>BR-G.3: Develop and implement a Habitat Restoration and Revegetation Plan<br>BR-G.4: Implement biological construction monitoring<br>BR-G.5: Create permanent conservation easements as compensation for impacts to biological resources<br>BR-G.6: Develop and implement Habitat Mitigation and Monitoring Plan and Habitat Management Plan for mitigation lands<br>BR-10.1: Conduct pre-construction surveys for blunt-nosed leopard lizard and implement avoidance measures<br>AQ-1.1: Reduce fugitive dust |
| Impact BR-11: The project will result in loss of habitat for wintering mountain plovers | BR-G.1: Implement a Worker Environmental Education Program<br>BR-G.2: Implement Best Management Practices<br>BR-G.3: Develop and implement a Habitat Restoration and Revegetation Plan<br>BR-G.4: Implement biological construction monitoring<br>BR-G.5: Create permanent conservation easements as compensation for impacts to biological resources<br>BR-G.6: Develop and implement Habitat Mitigation and Monitoring Plan and Habitat Management Plan for mitigation lands<br>AQ-1.1: Reduce fugitive dust |
| Impact BR-12: The project could result in the loss foraging habitat for golden eagles, California condors, and other special-status raptors | BR-G.1: Implement a Worker Environmental Education Program<br>BR-G.2: Implement Best Management Practices<br>BR-G.3: Develop and implement a Habitat Restoration and Revegetation Plan<br>BR-G.4: Implement biological construction monitoring<br>BR-G.5: Create permanent conservation easements as compensation for impacts to biological resources<br>BR-G.6: Develop and implement Habitat Mitigation and Monitoring Plan and Habitat Management Plan for mitigation lands<br>BR- 6.1: Conduct pre-construction surveys for nesting and breeding birds and implementation of avoidance measures<br>BR-12.2: Avoid and report California condors<br>AQ-1.1: Reduce fugitive dust |
| 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 | BR-G.1: Implement a Worker Environmental Education Program<br>BR-G.2: Implement Best Management Practices<br>BR-G.3: Develop and implement a Habitat Restoration and Revegetation Plan<br>BR-G.4: Implement biological construction monitoring<br>BR-G.5: Create permanent conservation easements as compensation for impacts to biological resources<br>BR-G.6: Develop and implement Habitat Mitigation and Monitoring Plan and Habitat Management Plan for mitigation lands<br>BR-13.1: Focused pre-construction burrowing owl surveys and implementation of avoidance measures<br>AQ-1.1: Reduce fugitive dust |
| Impact BR-14: The project could result in electrocution or collision with overhead wires by State and/or federally protected birds | BR-G.6: Develop and implement Habitat Mitigation and Monitoring Plan for mitigation lands<br>BR-14.1: Implement Avian Power Line Interaction Committee guidelines (APLIC)<br>BR-14.2: Prepare and Implement an Avian Conservation Strategy and Eagle Conservation Plan<br>BR-23.1: Create conservation easement on all project areas retired from the development footprint |

**Table IST-2. Summary of Significant but Mitigable (Class II) Impacts for the Revised Project**

| Impact | Mitigation Measure(s) |
|---|---|
| Impact BR-15: The project could result in mortality of, and loss of habitat for, special-status bat species | BR-G.1: Implement a Worker Environmental Education Program<br>BR-G.2: Implement Best Management Practices<br>BR-G.3: Develop and implement a Habitat Restoration and Revegetation Plan<br>BR-G.4: Implement biological construction monitoring<br>BR-G.5: Create permanent conservation easements as compensation for impacts to biological resources<br>BR-G.6: Develop and implement Habitat Mitigation and Monitoring Plan and Habitat Management Plan for mitigation lands<br>BR-15.1: Survey pre-construction maternity colony or hibernaculum for sensitive bats<br>BR-15.2: Provide substitute roosting habitat<br>BR-15.3: Exclude bats prior to eviction from roosts<br>AQ-1.1: Reduce Fugitive Dust |
| Impact BR-16: The project could result in the loss of giant kangaroo rat, loss of foraging habitat, and loss of occupied habitat | BR-G.1: Implement a Worker Environmental Education Program<br>BR-G.2: Implement Best Management Practices<br>BR-G.3: Develop and implement a Habitat Restoration and Revegetation Plan<br>BR-G.4: Implement biological construction monitoring<br>BR-G.5: Create permanent conservation easements as compensation for impacts to biological resources<br>BR-G.6: Develop and implement Habitat Mitigation and Monitoring Plan and Habitat Management Plan for mitigation lands<br>BR-1.1: Prepare and implement a Weed Control Plan<br>BR-1.2: Develop and implement a Grazing Plan for the project site<br>BR-16.1: Conduct focused pre-construction giant kangaroo rat burrow/precinct surveys and implement avoidance measures<br>BR-16.2: Avoid use of pile driving to install foundation supports<br>BR-16.3: Establish functional giant kangaroo rat habitat corridors across the project footprint<br>AQ-1.1: Reduce Fugitive Dust. |
| Impact BR-17: The project could result in the loss of San Joaquin antelope squirrel, loss of foraging habitat, and loss of occupied habitat | BR-G.1: Implement a Worker Environmental Education Program<br>BR-G.2: Implement Best Management Practices<br>BR-G.3: Develop and implement a Habitat Restoration and Revegetation Plan<br>BR-G.4: Implement biological construction monitoring<br>BR-G.5: Create permanent conservation easements as compensation for impacts to biological resources<br>BR-G.6: Develop and implement Habitat Mitigation and Monitoring Plan and Habitat Management Plan for mitigation lands<br>BR-1.1: Prepare and implement a Weed Control Plan<br>BR-1.2: Develop and implement a Grazing Plan for the project site<br>BR-17.1: Conduct focused pre-construction San Joaquin antelope squirrel surveys and implement avoidance measures<br>AQ-1.1: Reduce Fugitive Dust |

**Table IST-2. Summary of Significant but Mitigable (Class II) Impacts for the Revised Project**

| Impact | Mitigation Measure(s) |
|---|---|
| Impact BR-18: The project could result in mortality of, and loss of habitat for American badgers | BR-G.1: Implement a Worker Environmental Education Program<br>BR-G.2: Implement Best Management Practices<br>BR-G.3: Develop and implement a Habitat Restoration and Revegetation Plan<br>BR-G.4: Implement biological construction monitoring<br>BR-G.5: Create permanent conservation easements as compensation for impacts to biological resources<br>BR-G.6: Develop and implement Habitat Mitigation and Monitoring Plan and Habitat Management Plan for mitigation lands<br>BR-1.1: Prepare and implement a Weed Control Plan<br>BR-1.2: Develop and implement a Grazing Plan for the project site<br>BR-18.1: Conduct focused pre-construction surveys for American badger surveys and implementation of avoidance measures<br>AQ-1.1: Reduce fugitive dust |
| Impact BR-19: The project could result in the loss of San Joaquin kit fox, loss of foraging habitat, and loss of occupied habitat | BR-G.1: Implement a Worker Environmental Education Program<br>BR-G.2: Implement Best Management Practices<br>BR-G.3: Develop and implement a Habitat Restoration and Revegetation Plan<br>BR-G.4: Implement biological construction monitoring<br>BR-G.5: Create permanent conservation easements as compensation for impacts to biological resources<br>BR-G.6: Develop and implement Habitat Mitigation and Monitoring Plan and Habitat Management Plan for mitigation lands<br>BR-1.1: Prepare and implement a Weed Control Plan<br>BR-1.2: Develop and implement a Grazing Plan for the project site<br>BR-19.1: Conduct focused pre-construction San Joaquin kit fox surveys and implementation of avoidance measures<br>AQ-1.1: Reduce fugitive dust. |
| Impact BR-20: The project could result in the loss of jurisdictional wetland habitats | BR-G.1: Implement a Worker Environmental Education Program<br>BR-G.2: Implement Best Management Practices<br>BR-G.3: Develop and implement a Habitat Restoration and Revegetation Plan<br>BR-G.4: Implement biological construction monitoring<br>BR-G.5: Create permanent conservation easements as compensation for impacts to biological resources<br>BR-G.6: Develop and implement Habitat Mitigation and Monitoring Plan and Habitat Management Plan for mitigation lands<br>BR-1.1: Prepare and implement a Weed Control Plan<br>BR-1.2: Develop and implement a Grazing Plan for the project site<br>AQ-1.1: Reduce fugitive dust |
| Impact BR 22: The project could result in the exposure of wildlife to mortality in the construction water ponds (Class II) | BR-22.1: Fence temporary pond to exclude wildlife |
| Cultural and Paleontological Resources | |
| Impact CR 2: Construction of the project may cause an adverse change to buried prehistoric and historical archaeological sites or buried Native American human remains | CR-2.1: Conduct cultural resource monitoring during construction<br>CR-2.2: Treat previously unidentified archaeological resources discovered during construction<br>CR-2.3: Inadvertent discovery of human remains<br>CR-2.4: Implement workers environmental awareness program |
| Impact CR 3: Operation of the project or decommissioning activities may impact previously unidentified historic or archaeological resources | CR-2.1: Conduct cultural resource monitoring during construction<br>CR-2.2: Treat previously unidentified archaeological resources discovered during construction<br>CR-2.3: Inadvertent discovery of human remains<br>CR-2.4: Implement workers environmental awareness program |

**Table IST-2. Summary of Significant but Mitigable (Class II) Impacts for the Revised Project**

| Impact | Mitigation Measure(s) |
|---|---|
| Impact PA 1: Construction of the project would potentially destroy or disturb significant paleontological resources | PA-1.1: Implement site-specific paleontological recovery<br>PA-1.2: Monitor grading and excavation for unknown and accidentally discovered paleontological resources |
| Geology, Mineral Resources, and Soils | |
| Impact GE-4: Project would expose people or structures to potential substantial adverse effects as a result of problematic soils (e.g., corrosive or expansive soils, or collapsible soil) | GE-4.1: Implementation of Geotechnical Report Recommendations |
| Hazards and Hazardous Materials | |
| Impact HZ-1: Create a substantial hazard to people or the environment through the routine transport, use, or disposal of hazardous materials or as a result of an accidental release of hazardous materials | HZ-1.2: Protect Workers and Public from Valley Fever<br>WR-6.3: Maintain vehicles and equipment |
| Impact HZ-5: Expose people or structures to a risk of loss, injury, or death involving wildland fires | HZ-5.1: Cease work during Red Flag Warning |
| Impact HZ-7: Create a substantial hazard to the public or the environment by mobilizing existing contamination or generating disease vectors | AQ-1.1: Develop and implement a fugitive dust plan<br>AQ-1.2: Designate a dust complaint monitor<br>HZ-1.2: Protect Workers and Public from Valley Fever<br>HZ-7.1: Prohibit standing water. |
| Land Use and Recreation | |
| Impact LU-1: Construction would temporarily disrupt, displace or divide land uses | LU-1.1: Establish construction liaison<br>LU-1.2: Provide advance notification of construction<br>LU-1.3: Provide quarterly construction updates |
| Noise | |
| Impact NS-4: Permanent noise levels would substantially increase due to operation of project-related stationary noise sources above levels existing without the project | NS-4.1: Locate PV inverters and transformers away from the project's property line |
| Impact NS-5: Routine inspection and maintenance activities would substantially increase ambient noise levels in the project vicinity above levels existing without the project | NS-5.1: Limit panel washing activities |
| Public Services, Utilities, and Service Systems | |
| Impact PS-1: Project construction and operation would place burdensome demands on public services | PS-1.1: Develop and implement service agreement with Hollister Fire Department. |
| Transportation and Circulation | |
| Impact TR-1: Construction would create unsafe conditions on public roadways | TR-1.1: Prepare and implement Traffic Control Plan<br>TR-1.2: Rehabilitate, protect and monitor roadway pavement, bridges and culverts<br>TR-1.3: Repair roadway damage |
| Impact TR-2: Project implementation would increase congestion and travel delays on regional and local roadways or exceed an established level of service standard | TR-1.1: Prepare and implement Traffic Control Plan |
| Water Resources | |
| Impact WR-1: Substantially deplete local groundwater supplies or interfere with groundwater recharge | WR-1.1: Groundwater Monitoring and Reporting Plan.<br>WR-1.2: Aquifer Testing and Well Interference Analysis. |
| Impact WR-6: Construction or operation of the project could result in accidental releases of contaminants that could degrade water quality | WR-6.1: Accidental spill control and environmental training<br>WR-6.2: Store fuels and hazardous materials away from sensitive water resources<br>WR-6.3: Maintain vehicles and equipment |

**Table IST-3. Summary of Adverse but Less Than Significant (Class III) Impacts for the Revised Project**

| Impact | [Note: No Mitigation Measures for Class III Impacts] |
|---|---|
| Aesthetics | |
| Impact AE-4: Project would introduce panel glint and glare | |
| Air Quality | |
| Impact AQ 2: Operation, maintenance, and inspections would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants | |
| Climate Change/Greenhouse Gas | |
| Impact CC-1: Construction would generate exhaust emissions of greenhouse gases | |
| Impact CC-2: Operation, maintenance, and inspections would generate exhaust emissions of greenhouse gases | |
| Biological Resources | |
| Impact BR-4: The project would result in the loss of foraging habitat for wildlife | |
| Impact BR-21: The project would result in Polarized-Light Pollution that may result in negative effects on plant and wildlife communities | |
| Geology, Mineral Resources, and Soils | |
| Impact GE 1: Results in triggering or acceleration of geologic processes, such as landslides, substantial soil erosion or loss of topsoil | |
| Impact GE-2: Project would expose people or structures to potential substantial adverse effects as a result of seismically induced ground failure and/or groundshaking | |
| Impact GE-3: Project would expose people or structures to potential substantial adverse effects as a result of surface fault rupture at crossings of active and potentially active faults | |
| Impact GE-6: Project soils would be incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems | |
| Hazards and Hazardous Materials | |
| Impact HZ-2: Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school | |
| Impact HZ-4: Create a substantial aeronautical or motor vehicle hazard or result in a significant aerial obstruction within 2 miles of an airport or airstrip | |
| Land Use and Recreation | |
| Impact LU-2: Operation and maintenance of the project would permanently disrupt, displace, or divide land uses | |
| Impact RC-1: Construction activities would temporarily reduce, disrupt, or preclude access and visitation to established recreational areas | |
| Impact RC-3: Construction or operation and maintenance activities would increase the use of established recreational facilities such that substantial physical deterioration would occur or be accelerated | |
| Impact RC-4: Construction or operation and maintenance activities would change the character of a recreational area or program, diminishing its recreational value | |
| Noise | |
| Impact NS-3: Construction activity would temporarily cause excessive groundborne vibration or groundborne noise | |
| Population and Housing | |
| Impact PH-2: Project labor force would require housing that exceeds the supply of local housing or temporary housing facilities | |
| Impact PH 3: The project would induce substantial population growth | |
| Public Services, Utilities, and Service Systems | |
| Impact PS-2: Project construction and operation would place demands on local water, wastewater, and solid waste facilities | |
| Water Resources | |
| Impact WR-2: Substantially alter the existing drainage pattern of the site in a manner that results in flooding on- or offsite | |
| Impact WR-3: Construction activity and excavation could degrade water quality due to erosion and sedimentation | |

**Table IST-3. Summary of Adverse but Less Than Significant (Class III) Impacts for the Revised Project**

| Impact | [Note: No Mitigation Measures for Class III Impacts] |
|---|---|
| Impact WR-4: Creation of new impervious areas could cause increased runoff resulting in flooding or increased erosion downstream | |
| Impact WR-5: Project features located in a floodplain or water-course could result in flooding, flood diversions, or erosion | |

**Table IST-4. Summary of Beneficial (Class IV) Impacts for the Revised Project**

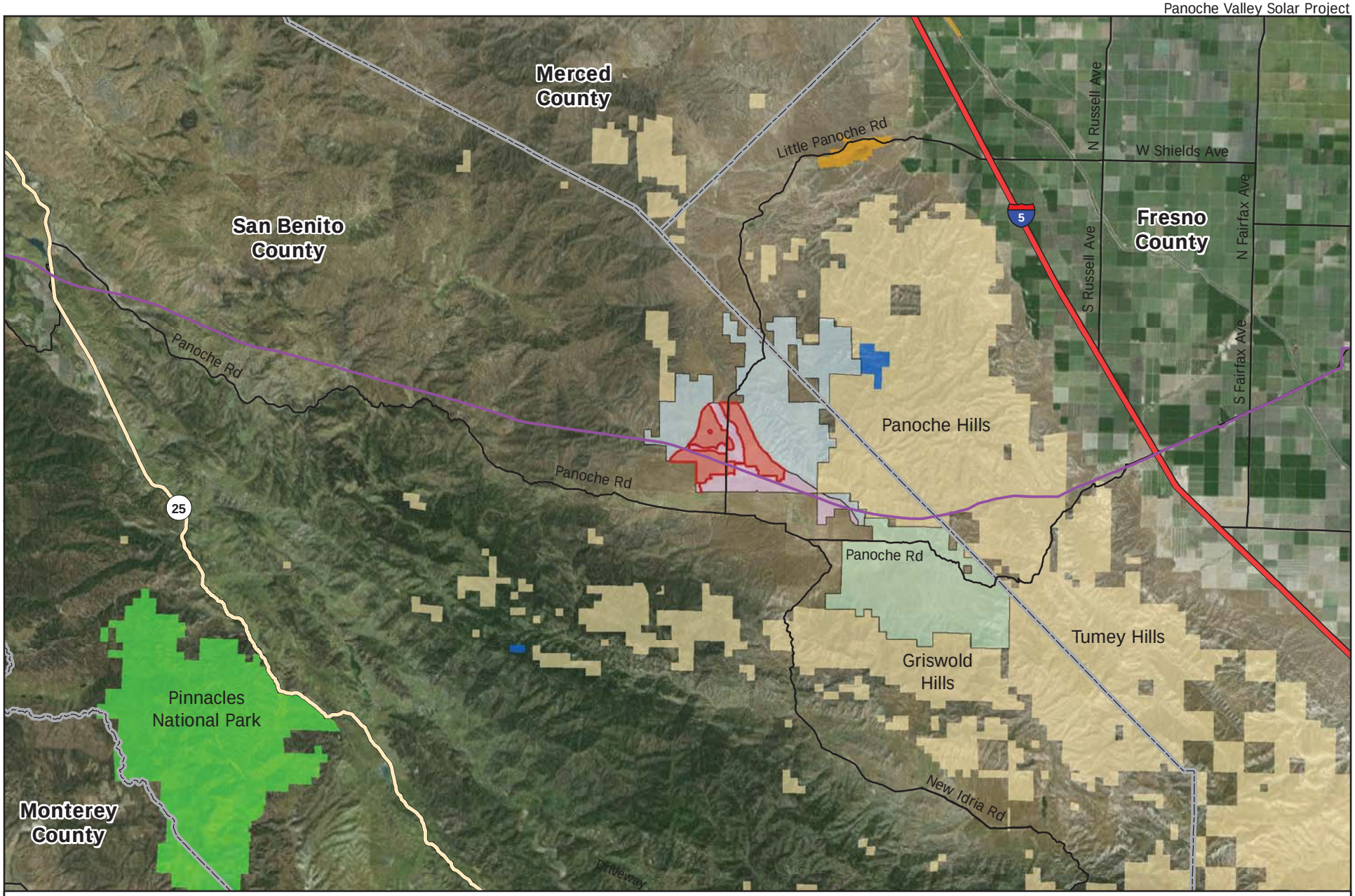
| Impact | [Note: No Mitigation Measures for Class IV Impacts] |
|---|---|
| Air Quality | |
| Impact AQ 3: Power generated by operation of the solar power plant would indirectly affect operations and emissions from other power plants | |
| Climate Change | |
| Impact CC-3: Power generated by operation of the solar power plant would avoid greenhouse gas emissions and land use conversion related to the solar project would alter natural carbon sinks | |
| Population and Housing | |
| Impact PH 1: Project labor force requirements would create a substantial demand for labor or a change in local employment | |

**Table IST-5. Summary of Adverse but Less Than Significant (Class III) Impacts for the PG&E Upgrades**

| Impact | [Note: No Mitigation Measures for Class III Impacts] |
|---|---|
| Aesthetics | |
| Impact AE-1: Long-term visibility of construction activities, equipment, and night lighting | |
| Impact AE-3: Proposed project would introduce structure contrast, developed character, view blockage, and glare | |
| Agriculture | |
| Impact AG-1: Project would convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared by the Department of Conservation's (DOC's) Farmland Mapping and Monitoring Program (FMMP), to non-agricultural use | |
| Impact AG-2: Project would conflict with Williamson Act contracts, existing zoning for agricultural use, or objectives in the County General Plan's Agriculture and Conservation and Open Space Elements | |
| Impact AG-3: Construction and operation of project would impair agricultural use of nearby properties | |
| Air Quality | |
| Impact AQ 1: Construction activities would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants | |
| Impact AQ 2: Operation, maintenance, and inspections would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants | |
| Impact AQ 4: Project-related emissions may be inconsistent with relevant air quality management plans | |
| Climate Change/Greenhouse Gas | |
| Impact CC-1: Construction would generate exhaust emissions of greenhouse gases | |
| Impact CC-2: Operation, maintenance, and inspections would generate exhaust emissions of greenhouse gases | |
| Biological Resources | |
| Impact BR-1: Construction activities would result in temporary and permanent losses of native vegetation | |
| Impact BR-2: The project could result in the establishment and spread of noxious weeds, invasive and non-native plants | |
| Impact BR-3: The project could disturb special-status plant species or their habitat | |

**Table IST-5. Summary of Adverse but Less Than Significant (Class III) Impacts for the PG&E Upgrades**

| Impact [Note: No Mitigation Measures for Class III Impacts] |
|---|
| 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 |
| Impact BR-7: The project could result in injury or mortality of, and loss of habitat for, terrestrial California Species of Special Concern |
| Impact BR-9: The project could result in the loss of individual California tiger salamanders or the permanent or temporary loss of CTS habitat |
| Impact BR-10: The project would result in the loss of individual blunt-nosed leopard lizards and their habitat |
| 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 |
| Impact BR-14: The project could result in electrocution or collision with overhead wires by State and/or federally protected birds |
| Impact BR-16: The project could result in the loss of giant kangaroo rat, loss of foraging habitat, and loss of occupied habitat |
| Impact BR-17: The project could result in the loss of San Joaquin antelope squirrel, loss of foraging habitat, and loss of occupied habitat |
| Impact BR-18: The project could result in mortality of, and loss of habitat for American badgers |
| Impact BR-19: The project could result in the loss of San Joaquin kit fox, loss of foraging habitat, and loss of occupied habitat |
| Impact BR-20: The project could result in the loss of jurisdictional wetland habitats |
| Cultural and Paleontological Resources |
| Impact CR-2: Construction of the project may cause an adverse change to buried prehistoric and historical archaeological sites or buried Native American human remains |
| Impact PA-1: Construction of the project would potentially destroy or disturb significant paleontological resources |
| Geology, Mineral Resources, and Soils |
| Impact GE-1: Results in triggering or acceleration of geologic processes, such as landslides, substantial soil erosion or loss of topsoil |
| Hazards and Hazardous Materials |
| Impact HZ-1: Create a substantial hazard to people or the environment through the routine transport, use, or disposal of hazardous materials or as a result of an accidental release of hazardous materials |
| Impact HZ-5: Expose people or structures to a risk of loss, injury, or death involving wildland fires |
| Land Use and Recreation |
| Impact RC-1: Construction activities would temporarily reduce, disrupt, or preclude access and visitation to established recreational areas |
| Impact RC-4: Construction or operation and maintenance activities would change the character of a recreational area or program, diminishing its recreational value |
| Noise |
| Impact NS 1: Construction noise would substantially disturb sensitive receptors and violate local rules, standards, and/or ordinances |
| Impact NS 2: Construction noise may violate local rules, standards, and/or ordinances |
| Transportation and Circulation |
| Impact TR-1: Construction would create unsafe conditions on public roadways |
| Impact TR-2: Project implementation would increase congestion and travel delays on regional and local roadways or exceed an established level of service standard |
| Water Resources |
| Impact WR-3: Construction activity and excavation could degrade water quality due to erosion and sedimentation |
| Impact WR-6: Construction or operation of the project could result in accidental releases of contaminants that could degrade water quality |




Aspen Environmental Group

N

0 3 6 Miles

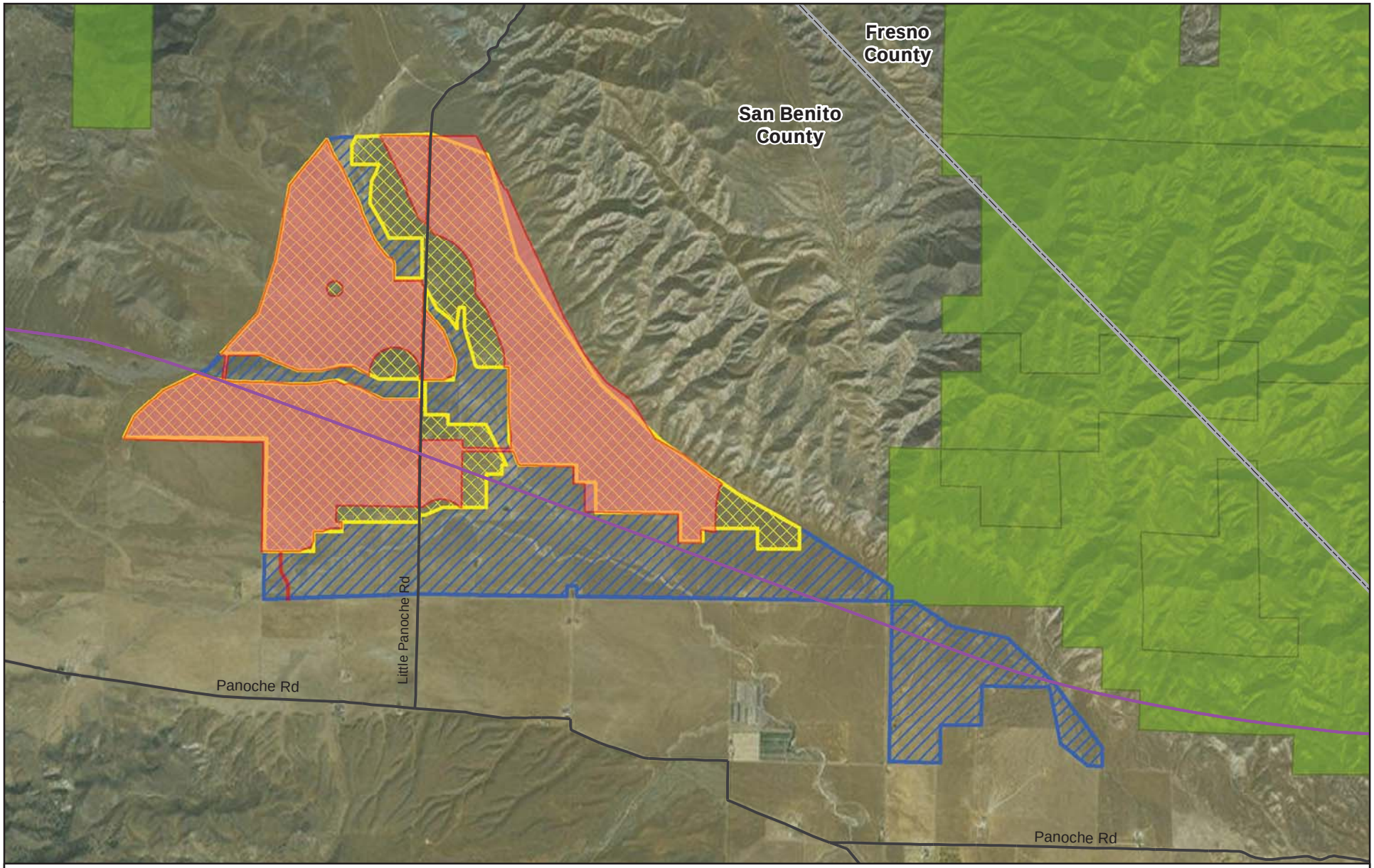
Source: PVS LLC, Platts 2013, ESRI

- Existing Transmission Line
- Interstate
- State Route
- Local Road
- County Boundary
- Revised Project Area
- Valley Floor Conservation Lands
- Valadeao Ranch Conservation Lands
- Silver Creek Ranch Conservation Lands
- Bureau of Land Management
- Bureau of Reclamation
- National Park Service
- State Lands

Figure ES-1

Project Location

December 2014




Aspen Environmental Group

0 0.5 1 2 Miles

Source: BLM, PVS LLC, Platts 2013, ESRI

2014 Revised Project Boundary
Approved Project Boundary (Alternative A Revised)
2010 Proposed Project Boundary
Bureau of Land Management
County Boundary
Moss Landing - Panoche 230 kV Transmission Line

Figure ES-2

Revised Project Boundaries

# A. Introduction

In 2010, the predecessor in interest to current applicant Panoche Valley Solar, LLC (PVS or Applicant), Solargen Inc., applied to the County of San Benito (County) for a Conditional Use Permit (CUP) to construct and operate a solar photovoltaic project in the Panoche Valley. The Applicant also applied to the County for whole or partial cancellation of nearly 7,000 acres of California Land Conservation Act of 1965 (Williamson Act) contracts. The County prepared a Final Environmental Impact Report (2010 Final Environmental Impact Report [EIR]) that included a comprehensive analysis of the project's environmental impacts pursuant to the California Environmental Quality Act (CEQA). In October and November 2010, the County Board of Supervisors (Board) unanimously certified the 2010 Final EIR, approved the CUP, approved the cancellation of the Williamson Act contracts, and approved a Development Agreement. Rather than approving the project as originally proposed and analyzed in the 2010 Draft EIR, the County approved Alternative A Revised, which was a reduced density alternative that was described and analyzed in the 2010 Final EIR. Alternative A Revised is referred to as the "Approved Project" in this Supplemental EIR (SEIR).

In August 2014, PVS requested that the County modify the approved CUP. Based on subsequent consultation with state and federal resource agencies and further design and engineering, the Approved Project has been further reduced in size, and will be constructed over a shorter 18-month timeframe as opposed to 5 years. In addition, PG&E has identified specific telecommunication upgrades that are required to serve the project; most would be installed within the existing PG&E right-of-way and at existing PG&E facilities. This SEIR assesses the environmental impacts that may result from these incremental changes to the Approved Project. The SEIR does not reanalyze the environmental impacts of the project as a whole. The incremental changes that are analyzed in the SEIR are described briefly in Section A.2 and in detail in Section B of this SEIR.

The County is the public agency with the principal responsibility for approving the project, and as such is the Lead Agency under CEQA pursuant to CEQA Guidelines Section 15367. CEQA requires the Lead Agency to consider the information contained in the SEIR prior to approving modifications to the CUP. Section 15163 of the CEQA Guidelines states that a lead agency may choose to prepare a "supplement" to an EIR rather than preparing a more detailed "subsequent" EIR. In this case, a Supplemental EIR is appropriate because "… only minor additions or changes would be necessary to make the previous EIR adequately apply to the project in the changed situation."

Since the additional analysis required for the changed project components and changed circumstances did not require major revisions to the previous EIR, a Supplemental EIR is the appropriate document for CEQA compliance. A Supplemental EIR, as its name implies, supplements the EIR already prepared for a project to address project changes, changed circumstances, or new information that was not known, and could not have been known with the exercise of reasonable diligence at the time the prior document was certified. The purpose of a Supplemental EIR is to provide the additional information necessary to make the previous EIR adequate for the project as revised. Accordingly, the Supplemental EIR need contain only the information necessary to respond to the project changes, changed circumstances, or new information that triggered the need for additional environmental review. (CEQA Guidelines, Section 15163.) (A subsequent EIR, in contrast, is an entirely new EIR, largely rewritten due to major overhauls and changes to a project and focuses on the conditions described in Section 15162.) CEQA allows that a supplement to an EIR may be circulated for public review by itself without recirculating the previous draft or final EIR. The County will make available the 2010 Final EIR during the review of the Draft SEIR.

A Supplemental EIR considers the new project components and/or changed circumstances in light of the certified 2010 Final EIR already prepared for the project. The focus of a Supplemental EIR is whether the project changes, changed circumstances, or new information give rise to a significant new or substantially more severe environmental impact than was identified and analyzed in the previously certified EIR. Preparation of a Supplemental EIR does not "re-open" the previously certified EIR; the analysis is limited to whether the project changes result in new or more severe impacts.

Whether project changes or changed circumstances will result in a new or substantially more severe impact is often not known until the supplemental analysis is prepared; therefore, the preparation of a Supplemental EIR (SEIR) does not necessarily imply that the changed project components or changed circumstances will result in new or more severe impacts. The analysis for this SEIR was conducted and is presented here for purposes of full disclosure where the changed project components or changed circumstances appeared to have the potential to create new or more severe impacts. In most cases, the analysis confirms that the significance of impacts identified in the certified 2010 Final EIR would not change based on the project changes.

# A.1 Purpose and Intended Uses of the Supplemental EIR

The County has the authority to take discretionary actions relating to development of the project and may conditionally approve or deny the modified CUP. This SEIR is intended to serve as an informational document to be considered by the County in its permit considerations on the Revised Project. The SEIR evaluates and, where appropriate, mitigates any potentially new or more severe impacts associated with the Revised Project that exceed the significance thresholds that were established in the 2010 Final EIR, and explains how they differ from those of the Approved Project.

As noted above, this SEIR also considers the impacts of the proposed upgrades to Pacific Gas & Electric Company's (PG&E) existing electric transmission system. These upgrades were unknown and not defined at the time of the 2010 Final EIR. The PG&E Upgrades are under the exclusive jurisdiction of the California Public Utilities Commission (CPUC), which must consider the environmental impacts of the upgrades prior to approving PG&E's upgrades. The PG&E Upgrades are summarized in Section A.2.2 and are described in detail in Section B of the SEIR.

# A.2 Overview of Revised Project

## A.2.1 Revised Solar Project

The Approved Project ("Alternative A Revised" as described in the 2010 Final EIR) has been modified since 2010, and is now evaluated in this SEIR as the Revised Project. In August 2014, PVS applied for a modified CUP for its Revised Project (PVS, 2014). The proposed amendments to the CUP, evaluated here as the Revised Project, are described in detail in Section B, and include changes to the following project components or activities:

- Project Footprint
- Construction Schedule
- Construction Personnel
- Construction Traffic
- Construction Air Emissions
- Construction Water Usage and Storage
- Water Crossings
- Perimeter Road and Fencing
- Mitigation Measures

### A.2.2 PG&E Transmission System Upgrades& Interconnection

Interconnection studies performed by the California Independent System Operator (CAISO) and a review of facilities that will support telecommunications between the project and the PG&E system resulted in PG&E's determination that the Panoche Valley Solar Project (PVSP) would require improvements to PG&E's telecommunications These telecommunications upgrades include installation of optical ground wire (OPGW) on PG&E's existing transmission line and a backup microwave communication system. These components are evaluated in this SEIR.

## A.3 Purpose and Need for the Revised Project

The purpose and need for the Revised Project has not changed since the project was approved in 2010. California is committed to the reduction of greenhouse gases through increases in renewable energy generation and reduction in the use of fossil fuels (coal and natural gas). Assembly Bill 32, the California Global Warming Solutions Act of 2006, created a program to reduce greenhouse gas emissions to 1990 levels by the year 2020. California's investor-owned utilities are required to provide their customers with 33 percent of their electricity from renewable sources, as mandated by California's Renewable Portfolio Standard (RPS). In 2010 when the County approved the Approved Project, the requirement was 20%.

In August 2014, the Applicant obtained a 20-year power purchase agreement with Southern California Edison (SCE) for electricity generated by the Revised Project. This sale of the power generated by the PVSP to SCE is part of meeting the statewide renewable generation goals.

Section 15124 of the CEQA Guidelines requires that a clearly written statement of objectives be presented in an EIR to help lead agencies develop a reasonable range of alternatives and to aid the decision makers in preparing findings or a statement of overriding considerations, if necessary. A summary of the project objectives presented for the originally proposed project is presented in Section B.2 of this SEIR.

## A.4 Public Involvement

CEQA requires the lead agency to provide the public with full disclosure of the expected environmental consequences of the project and with an opportunity to provide comments. In 2010, the County provided the following opportunities for public participation:

- **2010 Notice of Preparation (NOP) and Scoping.** As required by CEQA Guidelines Section 15082, the County issued a NOP on March 1, 2010, that described the originally proposed project, stated its intention to prepare an EIR, and requested comments from interested parties. The NOP also included notice of the two public scoping meetings that were held on March 15 and 16, 2010 in the Panoche Valley and Hollister, respectively. The NOP was filed with the State Clearinghouse on March 2, 2010 (SCH #2010031008), starting a 30-day public scoping period. The scoping period was extended at the end of March by an additional notice. The review period for the NOP ended on April 15, 2010. Approximately 88 copies of the NOP were distributed to federal, State, regional, and local agencies; elected officials; and the general public.
- **Comments on 2010 Draft EIR.** The Draft EIR for the original project was published on June 28, 2010 and circulated for review and comment to the public, agencies and individuals and interest groups who have requested to be notified. Per Section 15105 of the State CEQA Guidelines, San Benito County provided for a 60-day public review period on the Draft EIR, ending on August 31, 2010. During the public review period (on July 21, 2010), the County held a public hearing to allow public comment on

the contents of the 2010 Draft EIR. The 2010 Final EIR in Volume 2 includes a response to each comment on the 2010 Draft EIR.

- **Certification of 2010 Final EIR.** The San Benito County Board of Supervisors considered the adequacy of the 2010 Final EIR at a noticed public hearing, determined it to be adequate, and certified the Final EIR prior to approving cancellation on Williamson Act contracts. The San Benito County Planning Commission and the County Board of Supervisors, on appeal, approved the Conditional Use Permit at a two noticed public hearings.

The County has provided the following opportunity to provide comments on the Revised Project:

- **2014 Notice of Preparation (NOP) and Scoping.** The County issued a NOP for the SEIR on October 31, 2014. The NOP described the revisions to the Approved Project, stated its intention to prepare a SEIR, and requested comments from interested parties. The NOP was filed with the State Clearinghouse on October 30, 2014 (SCH #2010031008), starting a 30-day public scoping period. The review period for the NOP ended on December 1, 2014. Approximately 185 copies of the NOP were distributed to federal, State, regional, and local agencies; elected officials; and the general public.

There will be a 45-day public comment period after release of the Draft SEIR and hearings prior to certification of the Final SEIR.

# A.5 EIR Process and Agency Review

## A.5.1 San Benito County

The Revised Project would be located on the same private land as the Approved Project. The County has prepared the SEIR to evaluate the environmental impacts of changes to the Approved Project, and to disclose the environmental impacts of the project to the County's decision-making bodies so they can make an informed decision regarding the environmental impacts of a modification to the Use Permit.

The Board of Supervisors approved the Williamson Act contract cancellation in 2010. As a result, the Applicant is required to comply with all conditions of approval, which include the payment of a cancellation fee based on the unrestricted fair market value of the land subject to the cancellation. The cancellation will become effective once all conditions have been met.

The Planning Commission (or the Board on appeal) will be the decision-making body on the CUP modification. If granted, the County's approval will again include the approval of a mitigation monitoring and reporting program, as revised based on the SEIR, to ensure implementation of all feasible mitigation measures. The County will not issue any grading or building permits until the Applicant demonstrates that all the conditions and mitigation that must be satisfied prior to issuance of grading or building permits have been met.

## A.5.2 California Public Utilities Commission

The CPUC must approve any facility that will be transferred to and/or owned and maintained by an investor owner utility such as Pacific Gas & Electric Company (PG&E). In this case, PG&E facilities would include the on-site switchyard (to be known as Las Aguilas Switchyard) and associated components, as well as the interconnection to the existing 230 kV transmission line and its telecommunications components. Public Utilities Code 1001-1005 as implemented through CPUC's General Order 131-D requires the CPUC to ensure that any utility facility has undergone adequate environmental review. In

addition, the CPUC Energy Division will need to consider this document before the issuance of any permit or notice pertaining to PG&E's ownership and operation of any facilities analyzed in this EIR.

## A.5.3 Other Agencies

Several other local, State, and federal agencies will rely on information contained in the 2010 Final EIR as supplemented by this SEIR to inform the agencies in their decisions regarding issuance of specific permits related to project construction or operation. In addition to San Benito County, State agencies such as the California Department of Transportation, Department of Fish and Wildlife, and the Regional Water Quality Control Board would be involved in reviewing and/or approving the Revised Project or components of it. Federal agencies with permitting authority include the U.S. Fish and Wildlife Service and United States Army Corps of Engineers (Corps). Other local agencies which may require permits or approvals include the Monterey Bay Unified Air Pollution Control District and San Joaquin Valley Air Pollution Control District. A list of required permits and approvals is included in Table A-1 in Section A.5.4 below.

The Corps has assumed jurisdiction over the project for federal permitting under the National Environmental Policy Act (NEPA) of 1969 – 42 U.S.C. Section 4321 et seq. The Corps issued a Notice of Intent to prepare an Environmental Impact Statement (EIS) on July 19, 2012. The NEPA process is taking place independent of the CEQA process.

## A.5.4 Required Permits and Approvals

Table A-1 lists the preliminary federal, State, and local permits and authorizations required for the Revised Project.

**Table A-1. Permits or Other Actions Required Prior to Construction of the Revised Project**

| Agency | Jurisdiction | Permit or Regulatory Requirement |
|---|---|---|
| FEDERAL | | |
| U.S. Fish and Wildlife Service | Endangered Species Act 16 USC 1531-1544<br>Migratory Bird Treaty Act and Eagle Protection Act<br>Fish and Wildlife Coordination Act | • Biological Assessment, Section 7 Consultation, Biological Opinion |
| U.S. Army Corps of Engineers | Clean Water Act, 33 USC 1341<br>Section 10, Rivers and Harbors Act Permit | • Individual/Nationwide Section 404 Permit |
| STATE | | |
| California Public Utilities Commission | Public Utilities Code 1001-1005 and CPUC General Order 131-D | • Permit to Construct or Advice Letter Notice (where applicable) are required for any facility to be operated and owned by PG&E |
| California Department of Fish and Wildlife | Manage fish, wildlife, plant resources and habitats; California ESA, California Native Plant Protection Act, California Fish and Game Code Section 1602 | • Streambed Alteration 1602 Permit<br>• Section 2081 and 2099 Incidental Take Permit<br>• Mitigation agreement/plan |
| Regional Water Quality Control Board, Region 3 (Central Coast) | Clean Water Act, Section 401 | • 401 Water Quality Certification<br>• Storm Water Construction General Permit 2009-0009-DWQ<br>• National Pollutant Discharge and Elimination System (NPDES) Permit |

**Table A-1. Permits or Other Actions Required Prior to Construction of the Revised Project**

| Agency | Jurisdiction | Permit or Regulatory Requirement |
|---|---|---|
| California Department of Transportation, Districts 5 and 6 | California Vehicle Code, Division 15, SECTIONS 35000 et seq. California Street and Highway Code SECTIONS 660-711, 670-695 | • Oversize/Overweight Permits<br>• Encroachment Permits |
| California State Historic Preservation Office | Any archaeological or paleontological work | • Cultural Resources Use Permit, Field Use Authorization, or an Archaeological Resources Protection Act (ARPA) Permit (if required) |
| California Air Resources Board | Statewide, Title 13, Article 5, SECTIONS 2450-2465, California Code of Regulations | • Register portable equipment in accordance with the California Statewide Portable Engine Registration Program (PERP) |
| LOCAL AND REGIONAL | | |
| San Benito County | County roads and highways, flood control/channels | • Final cancellation of Williamson Act contracts<br>• Amendment to Conditional Use Permit<br>• Road Encroachment Permit<br>• Building Permit<br>• Grading Permit |
| Monterey Bay Unified Air Pollution Control District | Health and Safety Code 42300 et seq. | • Authority to Construct (ATC) and Permit to Operate (PTO) – New Stationary Source (e.g., engine-generator set greater than 50 horsepower or heater greater than 2 million British thermal units per hour) |
| San Joaquin Valley Air Pollution Control District | District Policy SSP 2150 | • Register diesel equipment |

# A.6 Reader's Guide to the Supplemental EIR

## A.6.1 Incorporation by Reference

As permitted in Section 15150 of the State CEQA Guidelines, an EIR may reference all or portions of another document that is a matter of public record or is generally available to the public. If information from these documents has been incorporated by reference, the SEIR briefly summarizes this information in the appropriate sections of this SEIR, describes the relationship between the incorporated information and the SEIR, and identifies how the public may obtain and review these documents.

Some of the information provided in this SEIR is based on the following documents:

- Project Application materials, technical reports and data
- County of San Benito General Plan
- County of San Benito County Code
- County of Fresno General Plan
- County of Fresno Ordinance Code

Copies of project-related documents are available on the County's website at:

http://www.cosb.us/

The County's General Plan documents are available on the County's website at:

http://www.sanbenitogpu.com/docs.html

The County of San Benito ordinances are available at the website of the American Legal Publishing Corporation:

http://www.amlegal.com/nxt/gateway.dll/California/sanbenitocounty_ca/?fn=altmain-nf.htm$f=$3.0$vid=amlegal:sanbenitocounty_ca

Copies can also be viewed, upon request, at the San Benito County Department of Planning and Building Inspection Services (2301 Technology Parkway, Hollister, CA 95023-2513).

The County of Fresno's General Plan documents are available at:

http://www.co.fresno.ca.us/ViewDocument.aspx?id=60071

The County of Fresno's code of ordinances is available on the MuniCode website at:

https://www.municode.com/library/ca/fresno_county/codes/code_of_ordinances

Copies can also be viewed, upon request, at the Fresno County Department of Public Works and Planning (2220 Tulare Street, 6th floor, Fresno, CA 93721).

## A.6.2 EIR Organization

Pursuant to State CEQA Guidelines, Section 15120(c), this SEIR contains the information and analysis required by Sections 15122 through 15131. Each of the required elements is covered in one of the EIR chapters and appendices, organized as follows:

- **Executive Summary.** A summary description of the Revised Project, the alternatives, their respective environmental impacts and the Environmentally Superior Alternative.
- **Section A (Introduction).** A discussion of the background, purpose and need for the project, briefly describing the Revised Project, and outlining the public agency use of the SEIR.
- **Section B (Project Description).** Detailed description of the changes to the originally proposed project and of the PG&E Upgrades.
- **Section C (Environmental Analysis).** An assessment of impacts and mitigation measures for the Revised Project, and discussion of the changes since the 2010 EIR analysis. This section is divided into main sections for each of 14 environmental issue areas (e.g., Air Quality, Biological Resources, etc.) that describe relevant changes to the environmental setting since 2010, and discussion of the impacts of the Revised Project in comparison with those of the Approved Project.
- **Section D (Cumulative Project Scenario).** A description of the cumulative project scenario, updated with current information. Cumulative impacts analysis is presented in Section C for the Revised Project.
- **Section E (Alternatives).** A summary of the alternatives evaluation process completed in 2010, as well as a list of alternatives considered but eliminated from further analysis. This section also summarizes the descriptions of alternatives and their impacts, including the No Project Alternative.
- **Section F (Other CEQA Considerations).** An updated discussion of growth-inducing effects, long-term implications of the Revised Project, and significant environmental effects which cannot be avoided if the Revised Project is implemented.
- **Section G (Glossary, Acronyms, and Abbreviations)**
- **Section H (EIR Preparers)**

- **Section I (Mitigation Monitoring and Reporting Program)**
- **[In Final SEIR only] Comments on the Draft SEIR and Responses to Comments**

**Appendices:**

Appendix 1 Notice of Preparation (NOP) for SEIR and Scoping Comment Letters
Appendix 2 Traffic Impact Study, November 2014
Appendix 3 Mitigation Measures and Applicant Proposed Measures Unchanged Since 2010

## A.7 References

PVS (Panoche Valley Solar LLC). 2014. Proposed Modification to Use Permit #1023-09 (Panoche Valley Solar Project) Letter. August 11.2014.

# B. Description of Revised Project

## B.1 Introduction

This Supplemental Environmental Impact Report (SEIR) assesses the environmental impacts that may result from changes to the Panoche Valley Solar, LLC's (PVS or Applicant) development of the Panoche Valley Solar Project, photovoltaic (PV) solar power plant. In 2010, the County of San Benito (County) certified the Final Environmental Impact Report (2010 Final EIR) for the Panoche Valley Solar Project and approved a Conditional Use Permit (CUP) to construct and operate a 399-megawatt (MW) project described as Alternative A Revised in the 2010 Final EIR (referred to as the "Approved Project" in this SEIR). The County also approved the whole or partial cancellation of nearly 7,000 acres of California Land Conservation Act of 1965 (Williamson Act) contracts. Both the CUP and the approval of cancellation of the Williamson Act contracts associated with the project site were approved by the County Board of Supervisors in October and November 2010.

The Applicant is proposing modifications to the Approved Project (as presented in the 2010 Final EIR), which are being evaluated in this Supplemental EIR as the Revised Project. The Approved Project and the Revised Project are located on the same general site in the Panoche Valley, an unincorporated area of eastern San Benito County. However, the Revised Project would be smaller (247 MW alternating current) and would impact 700 fewer acres (2,506 acres as opposed to 3,202 acres) and permanently disturb 315 fewer acres (1,888 as opposed to 2,203). The Approved Project would have been constructed in five phases over five years. The Revised Project would be constructed in one phase lasting approximately 18 months. Table B-1 shows a comparison of the originally proposed project analyzed in the 2010 Final EIR, the Approved Project (Alternative A Revised), and the Revised Project.

**Table B-1. Panoche Valley Solar Project Changes Since 2010**

| Project Element | 2010 Final EIR Proposed Project | 2010 Approved Project | 2014 Revised Project |
|---|---|---|---|
| Mw of electricity generation | 420 MW | 399 MW | 247 MW |
| Number of PV panels | 3–4 million | 3–4 million | 1 million |
| Power blocks | Not specified | 53 1 MW and 173 2 MW | 145 1.67 MW and 6 0.83 MW |
| Project site size (fenced area) | 4,885 acres | 3,202 acres | 2,506 acres |
| Permanent disturbance footprint | 2,437 acres | 2,203 acres | 1,888 acres |
| Construction schedule | 5 years beginning in 2011 | 5 years beginning in 2011 | Approx. 18 months beginning in 2015 |

The location of the Revised Project is illustrated in Figure B-1 (Project Location; all figures are presented at the end of Section B). The Revised Project footprint is shown in comparison to both the originally proposed project and Approved Project footprints in Figure B-2 (Revised Project Boundaries). The Revised Project generally includes the following changes:

- **Project Footprint.** The project footprint and overall disturbance area has been refined and reduced, which has resulted in a larger on-site conservation area for species conservation.
- **Increase in Peak Construction Personnel and Construction Traffic.** Based on an accelerated construction schedule (one 18-month construction phase as opposed to a 5-year construction schedule), the number of daily construction workers traveling to/from the project site and working at the site has increased by a maximum of 200 workers per day to 550 workers per day.

- **Water Usage.** Due to the accelerated construction schedule, the Applicant is proposing to increase the amount of water used during the temporary construction period. However, due to the reduced size of the project, the amount of water used to wash panels once the project is operational has been reduced.
- **Additional Water Storage During Construction.** The Applicant proposes to construct new temporary construction water ponds and three temporary water tanks near existing or new wells.
- **Revised Internal Circulation.** Permanent on-site access roads would be eliminated from the project and interstitial space (dirt paths between rows of PV panels) would be utilized as transportation corridors as needed for maintenance. No installation of gravel or compaction would be required with the exception of the project perimeter road and access to the substation and operations and maintenance area.
- **Fencing.** Based on coordination with and input from the United States Fish and Wildlife Service (USFWS) and CDFW and revised biological data, the implementation plan for installation of fencing at the project has been refined.
- **Applicant Proposed Measures/Mitigation Measures.** The Applicant has requested changes to a number of the applicant proposed measures (APMs) and mitigation measures that were adopted by the County in 2010 when the project was approved. An explanation of the requested changes and the effect of these changes on the prior analysis of project's environmental impacts are described in the appropriate discipline's analysis in Section C.
- **Other Changes within the Project Footprint.** The Revised Project includes a reduced number of inverters and transformers and minor modifications to the electrical substation and interconnection facilities.
- **Telecommunications Upgrades:** Based on interconnection studies performed by the California Independent System Operator (CAISO) and in consultation with Pacific Gas & Electric (PG&E), specific reliability upgrades have been identified for nearby substations, interconnection facilities and telecommunications infrastructure (which include installation of optical ground wire [OPGW] on PG&E's existing transmission line and a microwave system).

All of the other project components that are described in Chapter B of the Final 2010 EIR will remain the same. For example and as the SEIR notes below, the Revised Project does not propose modifications to erosion control, utilities, landscape design, the decommissioning plan and many other Approved Project components. Therefore, the environmental impacts of these unchanged components are not analyzed further in this SEIR because they were already addressed in the 2010 Final EIR. Nonetheless and for ease of reference for the reader, the SEIR includes a brief summary of these components. Information presented in this section was provided to the County by the Applicant with its CUP modification request, and in subsequent filings, all posted on the County's website (www.cosb.us).

The remainder of this section is organized as follows:

- **Section B.2** summarizes the project objectives
- **Section B.3** provides a revised site description
- **Section B.4** describes the solar project components that have changed
- **Section B.5** describes solar site design and engineering considerations that have changed
- **Section B.6** describes transmission interconnection and network upgrades that have changed
- **Section B.7** describes solar project construction components that have changed
- **Section B.8** describes solar project operations and maintenance that have changed
- **Section B.9** summarizes the proposed solar project decommissioning, which does not change with the Revised Project
- **Section B.10** presents proposed revisions to the Applicant Proposed Measures
- **Section B.11** describes the PG&E Upgrades that are evaluated in this SEIR
- **Section B.12** lists references cited

# B.2 Project Objectives

The Applicant identified the following project objectives in the 2010 Final EIR. These objectives continue to apply to the Revised Project with the exception of references to the specific project schedule and the size of the project.

- Maximize renewable energy output through construction of a large-scale 247 MW solar energy facility to help meet mandatory State renewable energy goals.
- Locate the facility in a high solar resource area.
- Minimize environmental impacts by locating the facility on a site that has access to high-voltage electrical transmission lines.
- Minimize impacts on the community and the environment by locating the facility in a remote location, on land with compatible topography, and outside of parkland and designated habitat conservation areas.
- Achieve full operation in 2016.

The Revised Project is expected to be able to attain all of these project objectives.

# B.3 Revised Site Description

## B.3.1 Site Characteristics

This description of site characteristics has been changed for the Revised Project to reflect modifications in the scale of the project from the originally proposed project in the 2010 Final EIR and the subsequent approval of cancellation of Williamson Act contracts in the project area.

**Revised Project Footprint.** The Revised Project would be installed over an area of approximately 2,506 acres (3.9 square miles) with approximately 1,888 acres of permanent disturbance associated with solar

arrays, roads, substation (including the O&M building and transmission interconnection towers), and laydown areas. The remaining approximately 618 acres within the project footprint would be temporarily disturbed but otherwise undeveloped. Figure B-1 illustrates the location of the project.

**Cancellation of Williamson Act Lands.** Since approval of the 2010 Final EIR, the Williamson Act contracts on the project site, and some adjacent areas, were approved for cancellation; the total area of Williamson Act contracts approved for cancellation was 6,953 acres.

### B.3.2 Increase in On-Site Conservation Lands

The proposed mitigation lands continue to include the Valadeao Ranch, the Silver Creek Ranch, and the on-site Valley Floor Conservation Lands, which are all described in the 2010 Final EIR. However, as shown on Figure B-1, the Valley Floor Conservation Lands were increased from 2,411 acres as described in the 2010 Final EIR to approximately 2,514 acres. This area includes an expanded 52-acre blunt-nosed leopard lizard buffer around blunt-nosed leopard lizard sightings, a widened San Joaquin kit fox corridor and higher density giant kangaroo rat areas.

## B.4 Revised Solar Project Components

### B.4.1 Reduced Number of PV Panels and Support Structures

The Approved Project included installation of 3 million to 4 million PV panels of 2 feet by 4 feet each; the Revised Project includes approximately 1 million PV panels that would each be 3 feet by 6 feet. The total number of PV panels would depend on the technology ultimately selected for the project. The ultimate decision for the technologies described below will depend on market conditions, economic considerations, and environmental factors, including the recycling potential of the panels at the end of their useful lives.

PV technologies that may be used include, but are not limited to:

- Thin-film technology: Various thin film technologies may be used on this site.
- Crystalline silicon technology: Various silicon technologies may be used; all would be reviewed for the panels' future recyclability.
- Fixed-tilt technology: the site may use the fixed-tilt technology of various vendors; all would be galvanized steel that is easily recyclable.

The Revised Project would use a single axis tracker system to support PV panels, which would contribute to reducing the number of required solar arrays. Each PV panel would be 3 feet by 6 feet (increased from 2 feet by 4 feet in the Approved Project). Larger panels may be used during the life of the project as technology evolves. All panels would be oriented to maximize solar resource efficiency. Panel faces would be non-reflective and black or blue in color.

The PV solar panels would be mounted on direct-driven steel support structures up to 15 feet in length, which is consistent with the 4 to 25 feet described in the 2010 Final EIR. The steel support structures would be corrosion-resistant galvanized steel. Steel poles may be placed in holes and backfilled with concrete if soil conditions warrant the use of such methodology as indicated by design-level geotechnical studies.

Rows of panels would be spaced 10 feet to 35 feet apart (decreased from 15 to 62 feet apart in the 2010 Final EIR) to prevent shading of adjacent rows. Rows of panels would be configured into power blocks

connecting to an inverter system. The inverter system would include direct buried insulated cable as compared to buried electrical collection conduit as described in the 2010 Final EIR Project Description.

The normal operating temperature of the PV panel face would not change from the Approved Project, which is 25-35 degrees Fahrenheit (°F) above maximum ambient temperature (panel face temperatures of approximately 130-140°F would be expected on typical summer days). As stated in the 2010 Final EIR, panels would result in shading of the area below.

The Applicant anticipates the Revised Project would produce approximately 247 MW of energy using 145 power blocks each generating 1.67 MW and 6 power blocks each generating 0.83 MW. Each power block would be approximately 520 feet by 90 feet, reduced from 615 by 640 feet as described in the 2010 Final EIR, and would contain the number of panels required to make up the 1.67 MW or 0.83 MW output from the inverter, which would depend on the wattage of the panels ultimately selected for the final design. The number of rows per power block would be consistent with the 8 to 34 estimated in the 2010 Final EIR.

Note that the actual energy output of the project will depend on the technology available during the life of the project and output may increase if improved technology allows for the installation of higher efficiency PV panels within the same project footprint and without any increase in resource impacts.

## B.4.2 Electricity Collection Lines and DC-AC Inverters

Electrical energy in the form of direct current (DC) generated by the PV panels would be combined in combiner boxes and routed to the inverter. A combiner box is a small electrical enclosure, approximately four cubic feet in size, which would be mounted on the PV racking system and would allow the PV string voltages to be placed in parallel, increasing the DC. Electricity from panel combiner boxes would be gathered via an underground or rack-mounted DC collection system from the arrays to centralized inverters. The Revised Project would use between 27 and 30 boxes per power array depending on the technology used.[1] The Revised Project would also use approximately 151 inverters and 151 transformers that would be located as sets of one inverter and one transformer on a shared foundation[2] The inverter systems would not be enclosed; they would be mounted on concrete foundations or steel piers, with the entire structure being approximately 8 feet wide by 40 feet long by 10 feet high. There would be one of these structures per power array.

The DC would be converted to alternating current (AC) by the inverters, stepped up by the transformers, and transmitted to the proposed substation via 34.5 kV (AC) medium-voltage collection lines. The medium-voltage collection lines would begin at the inverter-transformer foundation and would be located underground in trenches until the output from between 8 and 10 power blocks terminates in the collection breaker of the substation. The 34.5 kV collection wires located in the areas that are a distance of 1,000 feet or more from the collection breakers in the switchyard and outside the PV field may be mounted overhead on standard wood or steel poles along the site boundary. These poles would be approximately 25 feet in height and spaced about 250 feet apart.

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1 A power array is defined as the array associated with one inverter/MV transformer. A power block is defined as the arrays tied together at the combining switchgear. A power block is made up of approximately 20 power arrays. So, a power block would have about 600 boxes.

2 Maximum noise level from the inverters will be 65Db at 3 feet.

## B.4.3 Revised Electric Substation Components

The Revised Project includes the same operations and maintenance building as the Approved Project. The Revised Project also includes the same electric substation, except that the substation would now include a new microwave tower for the proposed secondary telecommunication communication system described in more detail in Section B.11. The microwave tower would be approximately 100 feet tall. The need for tower lighting to meet Federal Aviation Administration (FAA) requirements will be determined by an FAA study, if required, or aviation safety.

The number of substation transformers has also been reduced from five to two with each transformer containing approximately 12,500 gallons (as opposed to 10,500 gallons) of mineral oil each and would continue to be designed to accommodate an accidental spill of transformer fluid by the use of a concrete foundation with containment. No PCB-laden fluids would be used. A modular protection automation and control (MPAC) building for PG&E's switching station control and protection equipment would be located at the switching station site. A substation protection and control building will house the substation relaying and SCADA equipment near the substation site. There would also be a PV plant Operations and Maintenance (O&M)/control building to house the plant system's relay, protection, and SCADA equipment. Worker parking would be provided in a designated area near the O&M building.

## B.4.4 Revised Internal Access Roads and Perimeter Road

This section has been revised to reflect that previously proposed gravel access roads on the project site would be replaced by dirt path transportation corridors. In addition, the Revised Project incorporates the Hollister Fire Department requirement for a perimeter road that would meet fire code requirements and provide safe access to the site in the event of an emergency in the project area.

For the Revised Project, space between rows of panels would be used as transportation corridors as needed for maintenance activities as well as for access for site safety. These transportation corridors would be dirt paths with no installation of gravel or compaction. An additional transportation corridor, a maintained fenced-off dirt path, would be placed south of Aguilas Creek and north of the perimeter fence line. This transportation corridor would provide access to the western portion of the Valadeao Ranch Conservation Lands from Little Panoche Road for landowners and ranchers. Project roads are shown in Figure B-3 (Project Roads).

The required perimeter road would be 20 feet wide with pullouts every 2,500 to 3,000 feet. Pullouts would be approximately 20 feet wide by 300 feet long. Portions of the perimeter road that cross on-site federally jurisdictional washes would be used only for emergency access or for limited maintenance to cables within the bridge crossing at Las Aquilas. There are five planned crossings of federally jurisdictional washes. Crossings would be designed based on the United States Army Corps of Engineers (USACE) 404(b)(1) analysis and the *Least Environmentally Damaging Practicable Alternative*. The two crossings on the western side of the project would utilize single-span bridges, whereas the three crossings on the eastern side of the project would involve installation of a pipe arch culvert, low water crossings and filling/grading of washes. The locations of all five crossings of federally jurisdictional washes are identified on Figure B-3.

The crossings would be located outside areas where blunt-nosed leopard lizard have been observed (and associated buffers). Potential impacts to biological resources and jurisdictional waters from the perimeter road for the Revised Project are addressed in Section C.6 (Biological Resources) and Section C.15 (Water Resources). Both single-span bridge crossings are associated with the new perimeter road. One bridge is located along the western boundary of the Revised Project site, where the perimeter road

crosses Las Aguilas Creek. The second bridge is located near the southern boundary of the Revised Project site, where the perimeter road crosses Panoche Creek. The areas of ground disturbance for the two new bridges are shown on Figure B-3.

Federal crossings will be permitted through obtaining a USACE Section 404(b)(1) permit and 401 Certification by the Regional Water Quality Control Board. The crossings of washes, creeks, and drainages that are potentially waters of the state and regulated by the California Department Fish and Wildlife (CDFW), will be permitted through a CDFW Lake and Streambed Alteration Agreement (LSAA).

## B.4.5 Lower Wildlife Gap in Security Fencing

This section has been revised to reflect that the gap along the bottom of the Revised Project securing fencing would be 5 to 6 inches rather than 2 feet as described in the 2010 Final EIR. This change is based on consultation with CDFW and USFWS.

The fence around the project site would be smooth-top chain link in the upper portion, smooth wire in the bottom portion, and a height of 6 feet. Fencing around the site would be 4 feet of chain link with a 5- to 6-inch gap from ground surface to fence bottom to allow for wildlife movement. Fences around the O&M building would utilize the same plan, unless otherwise determined by CDFW and USFWS. Gated 8-foot-high chain link fences would be constructed around the substation per PG&E's standard, and temporary fencing may be placed around construction staging areas. All permanent materials would be industrial strength with galvanized steel to aid visual dulling over time.

## B.4.6 Revised Water Storage and Treatment Facilities

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.

In order to accommodate water usage during construction, the Applicant proposes to construct three temporary construction water ponds with a combined capacity of approximately 4.4 million gallons, along with three temporary 20,000-gallon water tanks near existing or new wells. Temporary exclusionary fencing would be installed around the ponds for safety and to restrict access by special status species. 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, approximately four permanent water storage tanks located near the O&M facility would store water required for panel washing. Panel washing requires water with very low total dissolved solids (TDS). If required, a filter would be installed to filter TDS from the well water source. No reject water would be produced during the filtering. The filter would be a self-contained cartridge filter attached directly to the well (if needed); therefore, all water would flow through the filter from the well, and no reject water would be produced. The filter would be replaced as needed to maintain appropriate water filtration levels.

# B.5 Revised Solar Project Site Design & Engineering

## B.5.1 Reduced Site Disturbance Area

This section has been revised to reflect changes in the footprint of the Revised Project. Total permanent impacts were estimated at 2,437 acres for the originally proposed project in the 2010 Final EIR, and 2,203 acres for the Approved Project. For the Revised Project the total estimated permanent disturbance would be 1,888 acres. See Table B-2 for a breakdown of permanent project impacts as compared to the impacts presented in the 2010 Final EIR.

Permanent disturbance to the site would result from construction roads, the substation and O&M facility, parking areas, equipment pads, and PV rack posts.

**Table B-2. Panoche Valley Solar Project Permanent Project Impacts Summary**

| Permanent Project Feature | Final EIR Proposed Project | Approved Project | Revised Project |
|---|---|---|---|
| Solar arrays | 2,200 acres* | Not specified | 1,629 acres |
| Project perimeter roads (including pullouts) | 168 acres | Not specified | 30 acres |
| Access roads | Not specified | Not specified | Not specified |
| Substation, switchyard, and O&M building | 12 acres | Not specified | 12 acres |
| Designated laydown areas | 95 acres | Not specified | 104 acres |
| Graded areas | 200 acres | Not specified | 392 acres |
| 230 kV Loop-in tubular steel poles (TSPs) | Not specified | Not specified | Twelve 2-foot diameter TSPs |
| Collector lines (block feeder and switchgear feeder) | 37 acres | Not specified | 192,500 linear feet |
| Perimeter fencing | Not specified | Not specified | 99,575 linear feet |
| Vasquez County Road | Not specified | Not specified | 4 acres |
| Total permanent disturbance | 2,437 acres | 2,203 acres | 1,888 acres |

* The 2010 Final EIR stated there would be 2,437 acres of disturbance, which included PV panels, substation with switchyard, buried electrical conduit, O&M building, onsite access roads, security fencing, and other disturbances. To determine the impact acreage attributed specifically for solar arrays as analyzed in the 2010 Final EIR, the acreage associated with the other project features identified in the 2010 Final EIR has been subtracted out of the 2,437 acres to identify the acreage for solar arrays

Limited grading is expected to be required because of the nearly flat terrain. Grading would be required on slopes greater than 3 percent for PV power blocks. Final grading plans for the project are currently under development; however, the Revised Project includes 392 acres of proposed area that will be graded along with the general layout for trenching of underground electrical lines and maps of the perimeter access roads. Unless the panel area overlaps with the graded area, no ground preparation such as disking/harrowing/rolling is proposed. The permanent *internal* project roads described in the 2010 Final EIR have been replaced with transportation corridors. Interstitial space would be used as transportation corridors between the rows of panels as needed for maintenance. These transportation corridors would be dirt paths with no grading, gravel, or compaction. An additional transportation corridor, a maintained fenced-off dirt path, would be placed south of Aquilas Creek and north of the perimeter fence line. This transportation corridor would replace the existing Vasquez Creek Road and would provide access to the western portion of the Valadeao Ranch Conservation Lands from Little Panoche Road for landowners and ranchers.

Solar panels and associated electrical equipment would be installed on approximately 185,000 support post foundations. Posts would be steel I-shaped sections with a cross sectional area of 4.5 square inches each. Concrete foundations associated with inverters and MV transformers would impact approximately 96,000 square feet (151 foundations total). Combining switchgear concrete foundations would disturb

approximately 9,000 square feet (11 foundations). Each of these areas is included within the solar array disturbance calculation in Table B-3.

The entire substation, switchyard, and O&M building area would be permanently disturbed through grading, installation of concrete foundations, placement of Class 2 base (gravel), and drilled concrete piers. Laydown areas would be located along Little Panoche Road near access points for the construction team. These areas may be permanently graded or aggregate material installed to allow for use of these areas during operation of the project.

The existing Vasquez Road would be replaced with a new road that would run outside of the project fenceline south of Las Aquilas Creek.

In addition to permanent impacts from project infrastructure, temporary impacts associated with construction of permanent project features and material and equipment staging will take place on the site. Temporary impacts were not estimated in the 2010 Final EIR, but are summarized below in Table B-3 for the Revised Project.

**Table B-3. Panoche Valley Solar Temporary Project Impacts Summary**

| Temporary Project Disturbance | 2010 Final EIR/ Approved Project Acres Impacted | Approximate Impact Area (acres) |
|---|---|---|
| Road construction buffers | Not specified | 55 |
| Perimeter fence installation buffers | Not specified | 45 |
| Federal crossing work areas | Not specified | 4 |
| Work areas | Not specified | 740 |
| Collector lines installation | Not specified | 9 |
| Construction ponds | Not specified | 4 |
| Total | Not specified | 857 |

Road construction buffers assume approximately 10 feet to 30 feet of temporary disturbance along perimeter roads, Vasquez Road and the perimeter fence. Approximately 28 acres of the temporary buffer area overlaps with permanent features.

Temporary work areas necessary for installation of crossings over federal jurisdictional waters would be outside of the ordinary high water mark. The designated work areas used to calculate temporary disturbance in Table B-3 would be used primarily for staging of construction equipment, material storage and work areas for construction of permanent Revised Project features. This area was calculated by taking the total Revised Project area of 2,506 acres and subtracting the solar arrays, perimeter roads, designated laydown areas, substation, switchyard, and O&M Building. Included in this impact area are the four permanent work areas needed for the TSPs used to loop in existing 230 kV transmission line into the project switchyard. These work areas overlap with the permanent graded areas around the switchyard, substation, and perimeter roads and fence as shown in Figure B-4 (Temporary and Permanent Ground Disturbance).

Collector line construction buffers overlap with permanent impacts associated with installation of solar arrays. Approximately 3 acres of temporary disturbances associated with Construction Ponds overlap with laydown areas.

## B.5.2 Erosion Control

This section has not been modified for the Revised Project; information is summarized from the 2010 Final EIR. Construction erosion will be controlled by Best Management Practices (BMPs) defined in a storm-water pollution prevention plan (SWPPP) that would be prepared prior to project construction. The SWPPP would outline the specific techniques for minimizing erosion and runoff. During project operation, a vegetated understory composed of indigenous flora species consistent with existing vegetation including annual grassland vegetation would be planted under the panels. The vegetation would be kept to a height of less than approximately 18 inches by planting slow-growing grass native to the region and through short-duration intensive grazing by sheep, described in Section B.5.8, Revised Fire Safety Plan.

## B.5.3 Utilities

This section has not been modified for the Revised Project; information is summarized from the 2010 Final EIR. Electricity during construction and operations would be obtained by a metered tap of the local existing 12 kV power grid and from portable, diesel-powered on-site generators. Water would be obtained from on-site wells. Portable sanitary facilities would be required during construction. Wastewater and solid waste would be hauled to appropriate treatment plants, recycling centers, or landfills. A supervisory control and data acquisition (SCADA) system located in the O&M Building, which would be used for project communications and would allow for control and access to the PV panels, substation, telephone system, and all other systems of communication.

## B.5.4 Revised Water Use During Construction and Operation

As discussed in the 2010 Final EIR, water would be needed during construction, annual cleaning of solar panels, and ongoing operations and maintenance for the PVS project. Based on the new construction schedule and engineering and construction methodology refinements for the Revised Project, construction water usage would increase substantially from estimates in the 2010 Final EIR, although construction and operational water usage would no longer overlap. Table B-4 summarizes changes to anticipated water usage. Changes in water usage are based on the analysis in the Geological Groundwater Technical Report, which is also summarized in Section C.15. The Revised Project would require substantially less water during operations than what was described in the 2010 Final EIR. This decrease in operational water need is primarily related to a reduction in solar arrays proposed; resulting in less panel washing. Accordingly, long-term water usage associated with the Revised Project would be reduced compared to the Approved Project.

**Table B-4. Water Usage in 2010 Final EIR Compared with 2014 Revised Project**

| **Project Phase** | 2010 Final EIR Water Usage | | 2014 Revised Project Water Usage | |
|---|---|---|---|---|
| Construction | Acre-feet | Gallons | Acre-feet | Gallons |
| Peak daily demand | 0.13 | 42,361 | 1.72 | 581,250 |
| Peak annual demand | 38.57 | 12,568,089 | 314.87 | 102,600,000 |
| Total construction usage | 131.23 | 42,761,482 | 385.15 | 125,500,500 |
| Operations | | | | |
| Annual demand | 25.48 acre-feet | | 2.84 acre-feet | |

Water supplies would be provided through the pumping of groundwater from the Panoche Valley Groundwater Basin, using existing water wells or new wells. During construction, water would be used for dust control and sanitary facilities. During project operation, water would be used for sanitary facilities, panel washing, fire suppression requirements, and for livestock (sheep) watering, if needed. Panel

washing would occur, at most, two times per year and would require an estimated 2.84 acre-feet of water annually, assuming approximately 1 million panels. Approximately 0.05 acre-feet (16,000 gallons) of water would be required for the O&M facilities and fire suppression. Potable water for the O&M facilities would be piped directly from the water well closest to the O&M facility. Sheep watering may require an estimated 0.35 to 0.56 acre-feet per year.

On-site water sources include several wells interspersed throughout the project site and accessible from the laydown areas. Filters would be installed as needed to treat well water that does not meet water quality standards, such as elevated TDS levels that could damage panels. Off-site water deliveries used for dust suppression or site stabilization are not anticipated

## B.5.5 Other Wastewater

This section has not been modified for the Revised Project; in summary, a septic tank and leach field would be constructed alongside the laydown area near the O&M building.

## B.5.6 Landscape Design

This section has not been modified for the Revised Project; however, for areas requiring restoration in accordance with adopted Mitigation Measure BR-G.3, Habitat Restoration and Revegetation Plan, paragraph(4), the Applicant has requested a change, as detailed below in Section B.10 (Applicant Proposed Measures). As stated in the 2010 Final EIR, landscaping in disturbed areas would typically use native plant stock whose origin is close to the project area. Salvaged topsoil would be used to promote re-establishment of existing plant communities from the existing seed bank if available. Erosion and sediment control measures would be implemented in revegetated areas to minimize soil movement and improve the potential for revegetation. If revegetation cannot be conducted immediately following completion of construction, appropriate interim erosion control measures, as detailed in the SWPPP, would be installed until revegetation occurs. Examples of interim erosion control measures include certified weed-free straw mulch, fiber rolls, or straw bale barriers.

## B.5.7 General Safety

This section has not been modified for the Revised Project; it is summarized here from the 2010 Final EIR. Emergency response plans would be developed for construction and operations. On-going training would occur per Occupational Safety and Health Administration regulations. Emergency response plans would be developed in consultation with the Hollister Fire Department, San Benito County Public Health Department, and other agencies with jurisdiction over emergency response at the project site.

## B.5.8 Revised Fire Safety Plan

This section has been modified for the Revised Project to reflect that sheep grazing would be used only if there is adequate forage available on the site.

Vegetation at the site would be kept to a height of less than approximately 18 inches. Short-duration intensive grazing by sheep may be used to maintain vegetation, depending on the amount of forage available on the site. The number of sheep required to appropriately graze the feed produced on the project site would vary seasonally depending on the rainfall and temperature of each grazing season. During normal rainfall years, anywhere from 1 to 3 bands of sheep (with each band consisting of between 750 and 1,200 adult sheep and offspring, depending on the season) would graze the project site during the winter and spring months (January to May) to use the amount of forage produced prior

to and during that season. The Applicant would construct new sheep fencing as necessary. The sheep would be removed from the site during the remainder of the year.

Three water tanks holding approximately 20,000 gallons per tank would be located at existing or new well sites. These tanks would have universal adapters to enable fire trucks to refill with water at the project site.

MPAC & Substation Building Fire Suppression shall follow the PG&E standard which is NOVEC 1240 clean agent flooding system for fire suppression, or similar, subject to local building permit official approval. Novec fluid, manufactured by 3M, is an environmentally friendly Halon replacement for use as a gaseous fire suppression agent. It is generally used in situations where water from a fire sprinkler would damage expensive equipment or where water-based fire protection is impractical.

# B.6 Interconnection and Network Upgrades

## B.6.1 Updated Interconnection Process Information

This section has been modified to reflect results of the Interconnection Reassessment Study Report released by the California Independent System Operator (CAISO) on September 18, 2013. The project would interconnect to the regional electricity grid at the Pacific Gas and Electric Company (PG&E) Moss Landing–Panoche/Coburn-Panoche 230 kV transmission line on the Revised Project site.

CAISO and PG&E completed the Cluster 3-4 Phase II interconnection studies in accordance with the CAISO Tariff Appendix Y Generator Interconnection Procedures (GIP). The Cluster 3-4 Phase II report was sent out on November 5, 2012. This was followed up with addendums the latest one being issued on May 29, 2013.

In accordance with the latest CAISO Generator Interconnection and Deliverability Allocation Procedures (GIDAP) Tariff Appendix DD, CAISO and PG&E performed a reassessment prior to the beginning of the Queue Cluster 5 (QC5) Phase II Interconnection Study. The reassessment evaluates the impacts on the Network Upgrades identified in previous interconnection studies due to Interconnection Request withdrawals, transmission additions and upgrades approved in the most recent Transmission Planning Process cycle.

The studies that were conducted relevant to the project are outlined in Section B.6.2 below. The details of the reassessment study are provided in the main body of the Fresno Reassessment group report. The reassessment concluded that many of the network upgrades identified in the pre-Cluster 5 Studies could be removed. In September 2013 the ISO issued the results of its first annual Generation Interconnection and Deliverability Allocation Procedures reassessment study. Projects affected by the reassessment in PG&E were issued an individual reassessment study report documenting the elimination of network upgrades resulting from project withdrawals. The ISO later determined that the reports were incomplete because they did not take the next step and reallocate the remaining network upgrades costs, originally allocated to withdrawn projects, among the remaining projects within a study group.

Subsequently, ISO issued a technical bulletin titled “Reassessment Process Reallocation of Cost Shares for Network Upgrades” on October 29, 2013 describing the process for the reallocation of cost shares for network upgrades impacted by the reassessment process. Based on the inputs from the stakeholders ISO decided to update the cost allocation percentages for the projects.

#### B.6.1.1 Power Purchase Agreement

In August 2014, the Applicant obtained a 20-year power purchase agreement with Southern California Edison for electricity generated by the Revised Project.

### B.6.2 Revised On-Site Interconnection Facilities

This section has been modified to reflect new design details that were not available for the 2010 Final EIR.

As described in Section B.1 of the 2010 Final EIR, connection of the Revised Project will be performed through a loop-in from the project's switchyard to the PG&E 230 kV transmission line that passes through the project site. The switchyard will be constructed by the Applicant and ownership will be transferred to PG&E. The PG&E switchyard will be known as the Las Aguilas Switchyard. This section provides updated information concerning the utility facilities and upgrades that may be needed to interconnect the project to PG&E's electrical system. The primary interconnection facility for this project would be a switchyard located to the north of the existing PG&E transmission line on site. The Revised Project switchyard design details would be developed in consultation with PG&E.

The location of the interconnection between the Revised Project and PG&E's Moss Landing–Panoche/ Coburn-Panoche 230 kV transmission line is shown in Figure B-5 (Interconnection Facilities). This figure includes locations of work areas and permanent features needed to connect the Revised Project's switchyard into PG&E's existing 230 kV transmission line. As shown in Figure B-5, it is anticipated that four pairs of new tubular steel poles (TSPs) would be required: two pairs within the existing transmission right-of-way and one pair on either side of the PG&E switchyard. There would be four temporary work areas to allow for construction of up to 8 approximately 85-foot tall tubular steel poles (TSPs). Additional TSPs may be required once final design is complete; however, the number of TSPs will not exceed twelve.

All ground disturbing work associated with the construction of the new TSPs that would loop into the PG&E switchyard would be performed within the defined Revised Project footprint. PVS would prepare the ground, as required, including performing all required clearances for biological resources. This will occur prior to PG&E's installation of the TSP foundations. PG&E's installation of TSPs and their foundations would occur only in areas where ground preparation has been completed by PVS.

PG&E would also remove two existing lattice towers within the project footprint (in the existing PG&E right-of-way). The tower foundations will be demolished to approximately three feet below grade.

### B.6.3 Transmission System Telecommunications Upgrades

Upgrades to PG&E's telecommunications system that are required for the Revised Project are addressed in Section B.11.

## B.7 Revised Solar Project Construction Components

### B.7.1 Revised Phasing Plan

The Revised Project would be constructed over an approximately 18-month period starting in 2015, rather than the five phase/five year approach described in the 2010 Final EIR.

## B.7.2 On-Site Panel Assembly

This section has not been modified for the Revised Project. Panel assembly would occur on site. Panel components, including PV panels and racks, would be transported to the laydown areas by container truck. The steel rack assemblies would then be constructed at each power block location, and the PV panels would be lowered onto the racks with final fastening being performed at the power block.

## B.7.3 Substation Construction

This section has not been modified for the Revised Project. The substation would be constructed by a contractor selected by Applicant in accordance with its Engineering, Procurement, and Construction contract specifications.

## B.7.4 Panel Installation

A pre-fabricated racking system would arrive on site to be assembled and grounded at the site. Pre-assembled PV panels would arrive on site and be placed in a staging area inside or on shipping containers. Panels would be put in place manually, and secured to the rack per vendor specifications. The rack would be populated with panels, wired in series, and connected to a DC combiner box, which would deliver DC power to the local inverters.

## B.7.5 Laydown Areas

This section has been modified to reflect the shorter construction schedule for the Revised Project. The laydown areas would cover a total of 104 acres (as shown in Table B-3). Each laydown area would be located to accommodate access for construction traffic via County roads. The laydown areas would require a power source for temporary lighting, which would be supplied by a portable generator. Figure B-4 illustrates temporary construction areas.

## B.7.6 Increase in Peak Construction Personnel

This section has been revised for the Revised Project's shorter construction schedule. While the Revised Project includes the same types of construction personnel that was described in the Final 2010 EIR, as a result of the shorter construction period, substantially more personnel would be required during the approximately 18 months of construction. In addition, the definition of daytime work would be revised from 7:00 am to 7:00 pm year-round to sunrise to sunset as described below.

The workforce at the project will vary based on the work activities conducted at the site; however, the estimated number of individuals has increased from a 2010 range of 70–200 to the current range of 100–500 individuals during the day and from 30–70 (2010) to 20–50 (2014) individuals at night. These estimates are in line with the total of the original estimates for each phase if all phases were constructed simultaneously.

Construction activities would be permitted from sunrise to sunset (as published by the National Oceanic and Atmospheric Administration), as early as 5:00 am to as late as 9:00 pm, depending on the time of year. In addition, the 2010 Final EIR described daytime work hours as 7:00 am to 7:00 pm, evening work hours as 7:00 pm to 10:00 pm and nighttime work hours as 10:00 pm to 7:00 am. No ground disturbing activities (including but not limited to grading, pile driving, trenching) would take place at night. Nighttime construction activities would be limited to the following:

- Minor non-ground-disturbing activities such as commissioning and maintenance activities to be performed when PV arrays are not energized;
- Interior use of the operations and maintenance facility;
- Unanticipated emergencies (defined as an imminent threat to life or a significant property interest), including non-routine maintenance that requires immediate attention;
- Special status species impact avoidance and minimization activities and research (e.g., giant kangaroo rat trapping and San Joaquin kit fox radio telemetry); and
- Security patrols.

There would be no on-site temporary workforce housing, and parking of employee recreational vehicles or trailers would be prohibited.

## B.7.7 Increase in Peak Construction Traffic

This section has been revised to reflect the shorter construction schedule and increased personnel requirements for the Revised Project.

Construction of the project substation may require temporary closure or partial closure of roadways around the project site.

As described above, the estimated workforce traveling to/from the site daily would be larger than originally analyzed in the Transportation and Circulation section of the 2010 Final EIR. Table B-5 provides estimates of daily traffic counts anticipated to be generated by the Revised Project during peak construction periods. The daily traffic was estimated based on work shift information provided by the construction contractor for the Revised Project. As discussed in the 2010 Final EIR, all truck traffic and deliveries, along with approximately 40 percent of personal vehicle traffic would enter the site from the north on Little Panoche Road. In order to accommodate this increased daily traffic volume and decrease safety risks to personal traffic, the Revised Project would allow the remaining personal vehicle traffic to enter the site from the west on Panoche Road. Consistent with the 2010 Final EIR Section C.14.3.3, material deliveries and other truck traffic would be limited to using Little Panoche Road.

**Table B-5. Estimated Daily Traffic, 2010 Final EIR Proposed Project and 2014 Revised Project**

| | 2010 Final EIR | Revised Project Peak | Revised Project Average |
|---|---|---|---|
| Employees | 200 | 550 | 200 |
| Employee daily trips | 268 | 950 | 400 |
| Assumed vehicle occupancy | 1.5 | 1.2 | 1.2 |
| Material delivery trips | 30 | 200 | 120 |
| Total daily trips | 298 | 1,150 | 520 |

Table B-6 presents the comparative construction traffic data for the 2010 proposed project and the Revised Project.

**Table B-6. Construction Traffic Specifications, 2010 Final EIR Proposed Project and 2014 Revised Project**

| Traffic Type | 2010 Final EIR Total One-Way Trips | Revised Project Total One-Way Trips | 2010 Final EIR Average Daily One-Way Trips | Revised Project Average Daily One-Way Trips | Trip Types: On-site Local = 40 miles or less Remote = > 40 miles |
|---|---|---|---|---|---|
| Aggregate base material | 1,320 | 10,000 | 4 | 15 | Local |
| Backhaul excess cut | 1,320 | 1,320 | 4 | 4 | On-site |
| Water trucks, dust control | 66,000 | 50,000 | 40 | 100 | On-site |
| Concrete raw material | 1,980 | 1,980 | 6 | 5 | Local |
| PV panel delivery | 8,250 | 2,250 | 5 | 20 | Remote |
| Substation equipment | 1,200 | 1,200 | 5 | 5 | Remote |
| Electrical materials | 3,300 | 3,300 | 2 | 15 | Remote |
| Total | 83,370 | 70,050 | 66 | 164 | N/A |

In all categories except aggregate base material truck trips, the total number of truck trips would be reduced under the Revised Project. Aggregate base material truck trips would increase due to the requirement by the Hollister Fire Department to construct an all-weather perimeter road around the project site. While decreases in overall traffic numbers may result in a net decrease in air emissions from construction traffic, the increase in daily traffic numbers and a condensed construction schedule would affect daily air emissions rates estimated in the 2010 Final EIR. These potential impacts are addressed in Section C.14 of this Supplemental EIR.

**Personnel Traffic.** As detailed above under Section B.7.6 Construction Personnel, the workforce at the project will vary based on the work activities conducted at the site; however, the estimated number of individuals has increased to 100 to 500 individuals during the day and 20 to 50 individuals at night.

As described above, the estimated workforce traveling to/from the site daily has increased from that originally analyzed in the Transportation and Circulation section of the 2010 Final EIR. Table B-5 above provides estimates of daily and peak traffic counts anticipated to be generated by the Revised Project during construction.

Origin and travel distance for workers are estimated in the 2010 Final EIR as follows:

- 5 percent from Panoche Valley (up to 5 miles);
- 75 percent from Hollister area (approximately 45 miles); and
- 20 percent from San Benito County, Santa Clara County, and Fresno County (up to 60 miles).

As discussed in the 2010 Final EIR, the project proposes that all truck traffic and deliveries, along with approximately 40% of personal vehicle traffic enter the site from the north on Little Panoche Road. In order to accommodate this increased daily traffic volume and decrease safety risks to personal traffic and reduce traffic through biologically sensitive areas, the project proposes to allow the remaining personal vehicle traffic to enter the site from the west on Panoche Road.

**Delivery Traffic.** Routes for trucks hauling materials and construction equipment would primarily follow the I-5 corridor to Little Panoche Road, allowing for safer travel by larger container trucks and wide-load trucks carrying heavy equipment. As discussed in the 2010 Final EIR, the project proposes that all truck traffic and deliveries enter the site from the north on Little Panoche Road. Despite an increase in the number of daily traffic numbers shown in Table B-5. Estimated Daily Traffic above, the cumulative total traffic trips during construction associated with each project component that would require transport to

or from the Revised Project site has decreased overall. No other changes to the delivery traffic are proposed with the Revised Project.

Material delivery would include all components of the switchyard, O&M building, fencing, PV panel components, inverters, and additional miscellaneous items. Material deliveries would originate at manufacturing sources within California and from shipping ports along California's coast. It is anticipated that material deliveries would occur via I-5. Smaller deliveries may arrive to the site via Hollister and/or via County roads. Table B-7 describes the delivery truck type for each project component.

As described in the 2010 Final EIR, material deliveries would be on-going throughout construction; much of the heavy construction equipment would arrive to the site early and stay for the duration of construction. Table B-7 describes the projected number and length of daily truck deliveries.

**Table B-7. Delivery Truck Type by Project Component**

| Project Component | Truck Type |
|---|---|
| Solar panels | Standard width 53' van |
| Inverters | Standard width 48' flatbed trailer |
| Steel mounts | Standard width 48' flatbed trailer |
| Transmission poles | Standard width 48' flatbed trailer |
| Substation steel | Standard width 48' flatbed trailer |
| Substation circuit breakers | Standard width 48' flatbed trailer |
| Substation transformers | 48' lowboy trailer with pilot cars |
| Auxiliary substation equipment | Standard width 48' flatbed trailer |
| Crane (35-ton) | 48' lowboy trailer with pilot cars |
| Crane (60- to 100-ton) | Wide-load self-propelled trucks with 2 jib companion flat beds |
| Pre-manufactured concrete | Concrete mixer |

## On-site Vehicle Movement During Installation

**Vehicles Entering and Traversing the Site.** During installation, traffic would enter the site at the specified laydown areas. Vehicles would travel along Little Panoche Road, and Panoche Road. Table B-8 describes construction vehicles and equipment that would generate emissions.

**Table B-8. Construction Vehicles and Equipment**

| Vehicle Traffic Use | Vehicle Type | Max Weight (lbs) | Max Power (hp) | Tread Type | Frequency of Use (hrs/day) | Quantity Onsite |
|---|---|---|---|---|---|---|
| On-road equipment (grading & travel on main roads) | Scraper | 77,800 | 313 | Dual Axle | 8 hrs/day | 1 |
| | Grader | 30,000 | 174 | Dual Axle | 6 hrs/day | 1 |
| | Dozer | 44,582 | 357 | Tractor | 6 hrs/day | 1 |
| | Backhoe loader | 13,046 | 108 | Dual Axle | 8 hrs/day | 1 |
| | Roller | 27,340 | 95 | Dual Axle | 8 hrs/day | 1 |
| | 4,000-gallon water truck | 55,000 | 189 | Triple Axle | 8 hrs/day | 3 |
| Off-road equipment (between PV power blocks and for panel installation) | Excavator | 36,000 | 168 | Tractor | 8 hrs/day | 4 |
| | Roller | 27,340 | 95 | Dual Axle | 8 hrs/day | 1 |
| | Backhoe loader | 13,046 | 108 | Tractor | 8 hrs/day | 1 |
| | Trencher | 5,500 | 63 | Dual Axle | 8 hrs/day | 1 |
| | Drill rig truck | 55,000 | 291 | Triple Axle | 20 hrs/day | 4 |
| | Crane | 28,800 | 399 | Dual Axle | 8 hrs/day | 1 |
| | Forklifts | 20,000 | 93 | Dual Axle | 16-24 hrs/day | 4 |

**Table B-8. Construction Vehicles and Equipment**

| Vehicle Traffic Use | Vehicle Type | Max Weight (lbs) | Max Power (hp) | Tread Type | Frequency of Use (hrs/day) | Quantity Onsite |
|---|---|---|---|---|---|---|
| | Generators | n/a | 549 | n/a | 8 hrs/day | multiple |
| | Grader | 30,000 | 174 | Dual Axle | 6 hrs/day | 1 |
| | Plate compactor | n/a | 8 | pad | 8 hrs/day | 2 |
| | Pickup trucks | 10,000 | 250 | Dual Axle | 16-24 hrs/day | 8 |
| | Welders | n/a | 45 | n/a | 8 hrs/day | 2 |

**Power Block Installation.** Vehicles needed for installation of PV panels would travel on both permanent and temporary site roads. These vehicles would include trucks, drilling rigs, forklifts water trucks, and cranes for lifting inverters onto piers.

**Drainage Crossing.** Roads that require a drainage crossing would be engineered to the specifications that allow for the weight of vehicles to cross without causing destabilization in the drainage areas. All reasonable efforts would be made to keep drainage crossings to a minimum.

## B.8 Revised Solar Project Operations and Maintenance

The only change in the Solar Project Operations and Maintenance is that the entire Revised Project is expected to be fully operational in the year 2016, as opposed to year 2015. Like the Approved Project, the Revised Project is expected to be in operation for at least 30 years, with the possibility of a subsequent re-powering of the project for additional years of operation.

**Operations Personnel.** The Revised Project does not propose changes to the operations personnel. The full-time staff of the project is expected to consist of a site manager, electrician, technician and maintenance/wash crew, and security personnel. The operations staff would consist of up to 50 persons once construction has been completed.

**Security.** The project would be fenced to prevent access by the public to ensure public safety and protect equipment from theft and vandalism. Gates would be installed at all site access roads. PVS would provide 24-hour security at the site.

**Maintenance.** Once installation is complete and the site is fully operational, all traffic would enter the site at the switchyard location off of Little Panoche Road. The facility would be restricted to O&M staff and security personnel only and authorized guests. Inverters would be checked twice annually for general component maintenance. Damaged or underperforming PV panels, mechanical fasteners, and inverters would be replaced as required.

**Washing.** To optimize performance of the project, the PV panel surfaces would be washed up to twice annually during the dry season.

**Lighting.** During construction, localized and portable lighting would be used where work is occurring as needed. Lighting would be powered by generators and would include switches to cut power when lighting is not required during construction. During operation of the project, motion-sensor lighting would be used at the O&M building and substation. All lighting would point downward and be shielded to preserve dark skies, and would adhere to San Benito County's Lighting Ordinance (19.31.003-009).

## B.9 Solar Project Decommissioning

This section has not been modified for the Revised Project. This description is summarized from the 2010 Final EIR. The project would be in operation for at least 30 years, with the possibility of a subsequent re-powering of the project for additional years of operation. Upon its eventual decommissioning, whenever that occurs, the Applicant or its successor in interest would be responsible for the removal, recycling, or disposal of all solar arrays, inverters, transformers and other structures on the site. As stated in the 2010 Final EIR, the Switchyard would be owned and operated by PG&E, and decommissioning would occur per the utility specifications at the time.

## B.10 Changes to Applicant Proposed Measures for Revised Solar Project

The Applicant proposes revisions to the Applicant Proposed Measures (APMs) that were listed in the 2010 Final EIR. The reason for each proposed change and the effect of each on the 2010 Final EIR's analysis of environmental impacts are addressed in Section C. Changes are shown in Table B-9 with underlining for added text and strikeout for deleted text.

APMs that have not changed are presented in Appendix 3 (Section 3.2) for the convenience of readers, because they are already incorporated into the Approved Project based on the County's 2010 decisions. These APMs are not subject to comment as part of this Supplemental EIR.

**Table B-9. Applicant Proposed Measures (APMs) Changed Since 2010**

| APM Number | Measure by Issue Area |
|---|---|
| **Aesthetics** | |
| APM AES-1 | "Dulled" metal finish structures, and facility buildings painted in earth tones, will be used to reduce visual impacts where feasible. The solar module cells will be blue or green toned and non-reflective. Certain electrical equipment, such as transformers and capacitors cannot be dulled. Equipment that cannot be dulled will have an ANSI gray manufacturer finish. The perimeter fence will also be galvanized steel. |
| APM AES-3 | Operation Lighting: During operation of the project, motion-sensor lighting will be used at ~~each 2 MW block~~ the main entrance, substation and switching station. The lighting will consist of energy-efficient lamps that will only be lit when human activity is detected. Motion sensors will have sensitivities set to avoid activating the lights when animal activity is occurring. This will be done to prevent startling animals and creating false alarms for security personnel. In addition to lighting, security cameras will be installed onsite. Constant lighting, at a low-level, may be required at the O&M building for security and safety. This will be a single lamp source near the entrance of the O&M building, which will be activated by a timer. All lighting will have a power switch to conserve energy when the lighting is not required. |
| **Agriculture** | |
| APM AG-1 | **Grazing sheep on the project site.** ~~Sheep~~ If necessary for vegetation control, sheep would be grazed throughout the project site, except on the 50-65 acres where new roads ~~and~~, buildings~~. Solar panels~~, switchyard/substation are constructed or where safety concerns would ~~be raised 2 feet off the ground, which would allow sheep to graze underneath~~ prevent grazing. The grazing operation would be a rotational system using short-duration intensive grazing alternating with periods of rest. The project site would be divided into ~~nine~~ pastures, which ~~would~~ could provide forage for between 750 and 3,600 adult sheep depending on annual rainfall and temperatures. The project site would be grazed between January and May. The Applicant would construct new sheep fencing as necessary. Each pasture would have access to water from existing livestock watering facilities. |

**Table B-9. Applicant Proposed Measures (APMs) Changed Since 2010**

| APM Number | Measure by Issue Area |
|---|---|
| APM AG-2 | **Allow grazing on lands covered by conservation easement created for biological resource mitigation.** Cattle grazing would be used as appropriate to increase biodiversity and maintain the suitability of mitigation lands for protected species habitat. The grazing program would be developed in accordance with grazing BMPs outlined by the Bureau of Land Management and protected species habitat requirements as determined by the California Department of Fish and ~~Game (DFG~~ Wildlife (CDFW) and the United States Fish and Wildlife Service (~~FWS~~USFWS). The grazing management plan would be developed, implemented, and monitored by the land trust or public conservation agency that holds the habitat conservation easement in consultation with ~~DFG~~ CDFW and ~~FWS~~ USFWS. |
| **Air Quality** | |
| APM AQ-2 | The Applicant shall implement the following BMPs to further reduce construction vehicle emissions (NOx, VOC, and ~~DPM~~ Diesel Particulate Matter) during project construction:<br>▪ Maintain all construction equipment in proper tune according to manufacturer's specifications;<br>▪ Use diesel construction equipment meeting ~~CARB's~~ the California Air Resources Board's (CARB's) Tier 2 standards for certified engines or cleaner off-road heavy-duty diesel engines (e.g., Tier 3 and Tier ~~-~~4, where feasible), and comply with the State In-Use Off-Road Diesel Vehicle Regulation (California Code of Regulations [CCR] Title 13, Article 4.8, Chapter 9, Section 2449);<br>▪ Prohibit on and off-road diesel equipment idling for more than ~~5~~15 minutes, or within time necessary to comply with Title ~~-~~13, ~~California Code of Regulations~~ CCR, Section 2485 (c) (1) regarding idling of commercial vehicles. Signs shall be posted in the designated queuing areas and or job sites to remind drivers and operators of all idling limits;<br>▪ Prohibit diesel idling within 1,000 feet of sensitive receptors;<br>▪ Staging and queuing areas shall not be located within 1,000 feet of sensitive receptors;<br>▪ Electrify off-road construction equipment when feasible; and<br>▪ Provide incentives for workers to use project-sponsored shuttle bus service or carpooling, where feasible. |
| APM AQ-3 | The Applicant shall reduce fugitive dust emissions during construction through implementation of the following best management practices to be shown on grading and building plans:<br>▪ Water graded/excavated areas and active unpaved roadways, unpaved staging areas, and unpaved parking areas at least three times daily or apply chemical soil stabilizers per manufacturer recommendations. Frequency should be based on the type of operations, soil and wind exposure<br>▪ Apply chemical soil stabilizers or water on inactive construction areas (disturbed lands, including dirt stockpiles;<br>▪ All disturbed soil areas not subject to revegetation shall be stabilized using approved chemical soil binders, jute netting, or gravel for temporary roads;<br>▪ Gravel shall be placed on all perimeter roadways and driveways as soon as possible after grading for said roadways.<br>▪ All trucks hauling dirt, sand, soil, or other loose materials shall be covered or shall maintain at least two feet of freeboard (minimum vertical distance between top of load and top of trailer) in accordance with California Vehicle Code Section 23114;<br>▪ Install ~~wheel washers~~ gravel track systems where vehicles enter and exit unpaved roads onto streets, ~~or wash off trucks and equipment leaving the site,~~ and inspect ~~vehicle~~ equipment tires to ensure free of soil prior to carry-out to paved roadways. |
| **Biological Resources** | |
| 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 ~~24~~ 5 to 6 inches to allow for wildlife movement across the project site. |

**Table B-9. Applicant Proposed Measures (APMs) Changed Since 2010**

| APM Number | Measure by Issue Area |
|---|---|
| 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. |
| ~~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.~~ |
| 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. |
| ~~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.~~ |
| 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. |
| 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 1,888 acres ~~2437 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.~~ 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). |

**Table B-9. Applicant Proposed Measures (APMs) Changed Since 2010**

| APM Number | Measure by Issue Area |
|---|---|
| APM BIO-13 | **On-site Conservation Measures for BNLL**<br>▪ Project is avoiding impacts by staying out of the floodplain and by buffering any historic BNLL sighting ~~by~~ with a ~~19~~52.4 ~~(3 standard deviations from the mean male home range size of recent unpublished data for the Carrizo Plain).~~-acre area<br>▪ Provide for connectivity of these avoided areas, ~~which will be largely accomplished via the avoided wash/creek habitat~~ through the Valley Floor Conservation Land.<br>▪ 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.).~~<br>▪ Restoration measures (soil stockpiling and revegetation efforts) will restore temporarily disturbed areas so they provide suitable areas for the species<br>▪ On-going monitoring based on the occupancy sampling will be used to determine changes in use of the site.<br>▪ ~~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. |
| APM BIO-14 | **Off-site Conservation Measures for BNLL**<br>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. |
| APM BIO-15 | **On-site Conservation Measures for GKR**<br>▪ 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 to the extent practicable impacts to individuals (e.g., preconstruction surveys, translocation efforts, education program of workers, site restrictions on access and operations, etc.).<br>▪ Restoration measures (soil stockpiling and revegetation efforts) will restore temporarily disturbed areas so they provide suitable areas for the species.<br>▪ ~~On-going monitoring based on the occupancy~~ Occupancy sampling ~~will be~~ was used to determine changes in ~~use~~ layout of the site.<br>▪ This monitoring ~~will inform~~ informed an adaptive management approach to site management ~~such as modifications of the grazing regime~~ |
| APM BIO-16 | **Off-site Conservation Measures for GKR**<br>▪ Mitigate at a 3:1 ratio<br>▪ Mitigate an additional 1:1 if after 5 years of monitoring the temporarily restored areas are found to no longer support the species.<br>▪ 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, including Valley Floor Conservation Lands, Silver Creek Ranch Conservation Lands, and Valadeao Ranch Conservation Lands provide 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.<br>▪ Monitoring of the site will permit an adaptive management program such as modifications of the grazing regime.<br>▪ Off-site lands will be managed by a third party ~~such as the BLM or California Rangeland Trust.~~ selected in consultation with CDFW and USFWS. |

**Table B-9. Applicant Proposed Measures (APMs) Changed Since 2010**

| APM Number | Measure by Issue Area |
|---|---|
| APM BIO-19 | **Off-site Conservation Measures for SJKF**<br>▪ 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.<br>▪ 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.<br>▪ Monitoring of the site will permit an adaptive management program such as modifications of the grazing regime.<br>Off-site lands will be managed by a third party such as the BLM or California Rangeland Trust. |
| APM BIO-20 | **Employee Education Program**<br>▪ 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.<br>▪ 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~~<br>▪ 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 awareness. Personnel must take the Employee Education Program administered test. Training included in the Employee Education Program pertains to ~~BNLL~~ protected species identification~~, BNLL 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.<br>▪ 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. |
| 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)~~. |
| APM BIO-22 | a) Prior to initiation of construction ~~of~~ in 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. |

**Table B-9. Applicant Proposed Measures (APMs) Changed Since 2010**

| APM Number | Measure by Issue Area |
|---|---|
| ~~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.~~ |
| APM BIO-24 | c) 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 BNL~~ |
| APM BIO-25 | d) 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. |
| ~~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.~~ |
| APM BIO-27 | 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. |
| APM BIO-28 | g) 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 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 approves. |
| APM BIO-29 | h) 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. |
| APM BIO-30 | i) All spills of hazardous materials shall be cleaned up immediately in accordance with the ~~Solargen~~ Spill Prevention Plan. |
| APM BIO-39 | r) 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. |

**Table B-9. Applicant Proposed Measures (APMs) Changed Since 2010**

| APM Number | Measure by Issue Area |
|---|---|
| **Geology** | |
| ~~APM GEO-1~~ | ~~No structures shall be placed within 50 feet from the topographical feature along the western boundary of the project site unless trench exploration is undertaken by geotechnical engineer that demonstrates that the topographical feature Is not fault related.~~ |
| APM GEO-2 | In order to avoid expansive clay and mitigate possibly disturbed surface soil, overexcavation of building and equipment pads will be considered~~.~~ as required by the geotechnical report. |
| **Hazards and Hazardous Materials** | |
| APM HAZ-3 | Sheep grazing under the panels will help to keep pasture growth controlled~~, and in a continued state of agricultural production.~~ as necessary. |
| ~~APM HAZ-5~~ | ~~Based on the remote location of the project site, a helipad will be constructed on site in accordance with the Federal Aeronautics Administration Advisory Circular No. 150/5390-2B "Heliport Design" to provide emergency transportation.~~ |
| APM HAZ-6 | Prior to energizing the project, the Applicant will install ~~a reasonable number of~~ electrical safety signage on all solar arrays in the immediate vicinity of ~~all~~ wiring and ~~on all~~ electrical ~~conduit~~ equipment using weather-resistant and fade-proof materials~~.~~ as required by applicable electrical code. Warning signs will be designed to be evident to any person tampering with, working on, or dismantling project ~~photovoltaic panels~~ electrical system. Sign ~~print~~ language shall ~~substantially conform to~~ comply with the ~~following language: "CAUTION: Solar PV Wiring May Remain Energized After Disconnection During Daylight Hours. Tampering With Wiring May Result~~ requirements in ~~ELECTRIC SHOCK or FIRE. Death or Serious Injury May Result. Do Not Expose Wires to Vegetation or Other Flammable Materials."~~ applicable electrical codes. |
| **Population and Housing** | |
| APM PH-1 | At least thirty days prior to commencing construction ~~of each phase~~, the applicant will provide construction contractors ~~for that phase~~ with information, including general information on the facility, telephone numbers, addresses and contact information, on temporary housing opportunities~~, including short term rental housing, hotels, motels, RV parks, and campsites with the ability to accommodate workers for periods of longer than one month~~ in coordination with San Benito County and the San Benito County Chamber of Commerce. The information will be provided on a website, pamphlet or other written material. |
| **Public Services and Facilities** | |
| APM PSU-2 | During operation of the solar farm, the project site would be maintained free of ~~non-biodegradable debris~~ trash. |
| APM PSU-3 | During construction and operation of the solar farm, all disposable materials that are considered recyclable shall be separated and properly recycled or reused in compliance with federal, State and local law or disposed of as required by a facility authorized to accept such materials~~, and will be disposed of at such a facility~~. |
| APM PSU-4 | Hazardous materials shall not be drained onto the ground or into streams or drainage areas. Totally enclosed containment shall be provided for all trash, as well as recyclable materials containers. All construction waste, including trash and litter, garbage, other solid waste, petroleum products, and other potentially hazardous materials, shall be removed to a disposal facility authorized to accept such materials. |
| **Water Resources** | |
| APM WR-1 | If they are damaged or destroyed by construction activities, water facilities (i.e. physical damage to equipment or infrastructure) would be repaired or replaced to their pre-disturbed condition as required by the landowner or land management agency. |

**Table B-9. Applicant Proposed Measures (APMs) Changed Since 2010**

| APM Number | Measure by Issue Area |
|---|---|
| APM WR-2 | 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 Project 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. |
| APM WR-3 | Roads would be built as near as possible to right angles to the streams and washes or as required by Project permits. Culverts would be installed where necessary. All construction and maintenance activities shall be conducted in a manner that would minimize disturbance to vegetation, drainage channels, and intermittent or perennial stream banks. In addition, road construction would include dust-control measures during construction in sensitive areas. All existing roads would be left in a condition equal to or better than their condition prior to the construction of the solar farm. |
| APM WR-4 | The Applicant would limit the panel washing to two washings per year during project operation. Should this estimate need to be revised ~~one~~ once the project is fully operational depending on soil/dust conditions, the Applicant would consult with the County and obtain the requisite approvals prior to any modifications to this schedule. |

Based on the changes to the Approved Project and subsequent consultations with wildlife agencies and scientific experts described herein, the applicant has requested modifications to mitigation measures approved in the 2010 Final EIR. These mitigation measure revisions are also discussed in the appropriate environmental analysis sections within Section C.

## B.11 PG&E Transmission System Upgrades

Since 2010, new information has become available regarding the transmission system upgrades that are necessary to serve the Revised Project. These upgrades are described below and analyzed in this Supplemental EIR.

The California Independent System Operator (CAISO), the electricity grid operator in California, in combination with the interconnecting utility, Pacific Gas & Electric Company (PG&E), are responsible for ensuring the reliability of the transmission grid. These two entities are tasked with determining the transmission system impacts of the proposed PVSP and any measures needed to ensure system conformance with utility reliability criteria.

An Interconnection Reassessment Study was conducted by CAISO (September 18, 2013) in coordination with PG&E in accordance with CAISO Tariff Appendix DD, Generator Interconnection and Deliverability Allocation Procedures. The study identified various utility network upgrades necessary to support interconnection of the project to the electrical grid, including, primary and secondary telecommunication services to allow for data transmission between the project and the electrical grid. This SEIR evaluates the potential impacts associated with the proposed telecommunications upgrades to PG&E's system.

The California Public Utilities Commission (CPUC) has exclusive permitting jurisdiction over upgrades and modifications to high-voltage and telecommunications facilities owned and operated. Accordingly, the potential environmental effects related to the PG&E network upgrades are described in this document to facilitate subsequent approvals required by CPUC.

## B.11.1 PG&E Primary Telecommunications Service: Optical Ground Wire

PG&E proposes to install new optical ground wire (OPGW) on its existing Moss Landing–Panoche 230 kV transmission line to establish the primary telecommunication service between the project substation and PG&E's existing Panoche Substation, which is located 17 miles east of the Panoche Valley in Fresno County. OPGW 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.

OPGW provides telecommunications services between electrical substations and generating facilities or other substations. The OPGW will replace existing shield wire and be installed on existing towers with minimal modification of the existing towers. Figure B-6 (PG&E Upgrades: OPGW) depicts the primary telecommunications route described herein.

### B.11.1.1 OPGW Installation

As stated above, the OPGW will be installed on PG&E's existing Moss Landing–Panoche 230 kV transmission line to establish the primary telecommunication service between the substation at the project site and Panoche Substation. As illustrated on Figure B-6, the segment of the PG&E Moss Landing–Panoche 230 kV line that would serve the PVSP would start at the existing Panoche Substation, which is located in Fresno County on West Panoche Road, about 2.5 miles east of Interstate 5. Of the 17-mile line, about 10 miles are in Fresno County and 7 miles in San Benito County and about 6 miles (in both Fresno and San Benito Counties) are on federal lands administered by the U.S. Bureau of Land Management (BLM).

The existing transmission line follows Panoche Road to the west for about 3.5 miles, then enters the Panoche Hills. About 9 miles of the route is within the Panoche Hills, on both private land and federal land. After crossing into San Benito County, the line is within the Panoche Hills for about 2.75 more miles, then entering the Panoche Valley. The existing line continues west for about 4.5 miles in the Panoche Valley before crossing Little Panoche Road and entering the proposed substation within the solar field boundary.

**Crossing of BLM Land.** East of the Panoche Valley and west of I-5, the PG&E Moss Landing–Panoche 230 kV transmission line traverses about 6 miles of Bureau of Land Management (BLM) administered land in the Panoche Hills. The line is located south of the Panoche Hills South Wilderness Study Area. Pull sites are anticipated to be needed within the BLM section of PG&E's right-of-way (ROW). On BLM lands, the OPGW would be installed on existing structures using existing access roads or helicopters. PG&E anticipates impacts within BLM-administered land would include temporary disturbance associated with pull/reel and splice sites and would be limited to approximately 0.52 acres or 4 pull/splice sites.

### B.11.1.2 Construction Process

***Installation of OPGW***

PG&E proposes to replace the existing shield wire and install the OPGW on the north side of the 230 kV towers, at the top of each tower. The OPGW cable comes on cable reels that hold approximately 23,000 feet of cable, so an estimated 12 temporary pull/reel and splice sites that would be established along the existing 17-mile transmission line corridor. Each splice and pull/reel sites would require an approximate 75-foot by 75-foot work area located mid-span of existing tower sites within the existing transmission corridor right-of-way.

The OPGW installation along the 17-mile segment would be completed in approximately 12-16 weeks, and at any one location the construction would take from 2 to 3 weeks. Existing roads and access along the transmission line will be used to install the OPGW, and PG&E will implement the same methods in the execution of the work that they employ when performing maintenance activities on their electrical system.

The locations of the pull/reel sites have been identified through a combination of helicopter and ground surveys and a review of aerial imagery. These locations are depicted on Figure B-6. The criteria used in selecting the final pull/reel sites include consideration of the following issues: accessibility for vehicles, presence of flat or nearly flat land adjacent to existing transmission line route for equipment set-up; existing land use, absence of or minimal habitat for sensitive species, and the absence of resources that would restrict work.

Preparation of the temporary pull/splice sites will require some minor ground disturbance. Minor structural modifications will also be made to each of the transmission towers to allow the mounting of splice boxes where the sections of OPGW will be spliced (every 3 to 5 miles). Access to pull/reel sites and to each transmission tower would occur generally along existing unimproved roads or improved unsurfaced or surfaced roads that lead to many of the existing towers. No new roads would be constructed to access tower locations. Helicopters would be used to place materials at the point of installation for towers inaccessible by road.

At each of the 75 existing towers along the 17-mile 230 kV transmission line route, minor upgrades to the steel attachments on the towers would be required to accommodate installation of the OPGW. These upgrades would include only overhead work on the existing tower, such as replacement of the gode peaks with a pulley to accommodate the OPGW. The existing static wire would then be used to pull the new OPGW through each tower pulley. Existing roads or helicopters would be used to provide access to the sites necessary to fashion the attachments needed on each tower.

***Use of Helicopters***

Helicopters would be used to transport electrical workers to the towers, deliver materials, and assist in pulling the OPGW from tower to tower. Approximately four 150 by 100-foot landing zones (LZs) would be constructed approximately every 5 miles using means similar to pull sites. Establishment of these landing zones will involve minimal temporary ground disturbance and will facilitate the use of helicopters and reduce overall impacts associated with the work. LZs will primarily be used for staging materials, picking up and transporting electrical personnel and equipment, and refueling helicopters. Helicopter landing zones are depicted in Figure B-6.

***Temporary Guard Structures***

Overhead crossings of public roadways or existing transmission or distribution lines would require the use of approximately 11 temporary guard structures at seven crossings. The temporary guard structures would be designed to prevent tools or materials from falling into the roadway or utility. Guard structures typically consist of 2 to 4 wooden poles and cross beams attached between the poles. They are generally installed in pairs with a net strung between them, but in some cases a net would not be required. A PG&E line truck would be used to auger and set the wooden poles. For roadway crossings, it is anticipated that the temporary poles would be placed in or adjacent to the disturbed road shoulder in an approximately 75-foot by 75-foot area. No grading or vegetation removal is anticipated associated with installation of the guard structures. Guard structure poles would be removed following OPGW installation and the holes backfilled. Guard structure locations are depicted on Figure B-6.

***Crossing of 500 kV Lines***

The existing 230 kV transmission line crosses under two existing 500 kV transmission lines about 1.5 miles west of the I-5 crossing. At this location, an approximately 4,650-foot section will require the installation of approximately nine permanent wood poles within the existing ROW and on land currently used for agricultural purposes. At this crossing, PG&E would splice in All-Dielectric Self-Supporting (ADSS) fiber optic cable from the 230 kV towers to the east and west sides of the 500 kV transmission line corridor and attach the ADSS to the nine new wood poles. The ADSS would replace of OPGW for this 4,650-foot section. The new poles would be located at a 30- to 40-foot offset to the existing 230 kV centerline and within the ROW. To install the poles, a 30-foot by 40-foot work area would be required to accommodate one crew truck and a trailer truck to bring each pole to the site, and a line truck to auger a hole about 8 feet deep and 2 feet wide.

***Summary of Ground Disturbance***

Table B-10 summarizes the total impact areas for the PG&E Upgrades.

**Table B-10. Primary Telecommunications Impact Overview**

| Work Area Description | Total Impact |
|---|---|
| Temporary pull/splice sites (12 – 75'x 75') | 1.54 acres |
| Temporary landing zones (4 – 150' x 100') | 1.38 acres |
| Temporary guard structures (11 – 75' x 75') | 1.42 acre |
| Wood pole temporary work areas (9 – 30' x 40') | 0.25 acres |
| Wood pole permanent impact area | 10 square feet |
| ADSS underground temporary work area (1200' x 37.5') | 1.03 acres |
| Total | Approx. 5.62 acres |

PG&E will implement avoidance and minimization measures for these sensitive species and their habitat as required by a State Incidental Take Permit (SITP) approved by CDFW and the project's Biological Opinion issued by the USFWS.

## B.11.2 PG&E Secondary Telecommunication Service: Microwave System

To meet PG&E's communications reliability standards, two redundant communication paths are required. In addition to the OPGW installation on the existing 230 kV transmission line structures, PG&E proposes to establish a secondary system. PG&E's preferred secondary system would be a microwave communication system that would to achieve the same system protection. As indicated in Figure B-7 (PG&E Upgrades: Microwave Towers), the microwave path will start at the project switchyard, where a new microwave tower will be constructed. The path will continue to an existing microwave tower at Call Mountain (owned by CAL FIRE), then to Panoche Mountain where either a new tower will be constructed next to an existing tower owned by California Highway Patrol or co-located on an existed tower owned by American Tower Corporation (ATC). The microwave path will then terminate at a new tower to be constructed at PG&E's existing Helm Substation. The tower to be constructed at Panoche Mountain (if needed) could be up to 300 feet in height. The towers at the Helm Substation and the project switchyard will be approximately 100 feet tall. A schematic of a typical microwave communications tower is shown in Figure B-8 (Microwave Tower Design).

A Federal Aviation Administration (FAA) study will be performed, if required, prior to construction of the microwave towers to determine appropriate lighting to comply with FAA requirements or for aviation

safety. PG&E would comply with the Federal Communications Commission (FCC) approval process and FAA filings and approval, including installations of FAA lights on the microwave tower, as required.

### B.11.2.1 Microwave Tower Construction

**PVS Project Site Tower.** The microwave tower constructed at the PVS substation would be approximately 100 feet tall and would be located adjacent to the two substations.

**Call Mountain Tower.** The existing tower owned by CAL FIRE will be used to collocate equipment needed to provide telecommunications from the project site to PG&E's system. Since an existing tower will be used there would be no increase in visual impacts in the area. An existing road would be utilized to access the proposed Call Mountain tower site, so no new roads would be constructed to bring equipment and materials to the work site.

**Panoche Mountain Tower.** If equipment cannot be collocated on an existing tower near the site, a new tower of up to 300 feet tall may need to be constructed at Panoche Mountain; however, there are two nearby towers owned by CHP and American Tower Corporation (ATC). The new microwave tower (if needed) would be similar to existing infrastructure already located in the area and would not increase visual impacts in the area. Figure B-9 is a photograph of the existing tower at Panoche Mountain (Central Office, 2014).

**Helm Substation Tower.** The tower to be constructed at Helm Substation will be approximately 100 feet tall and located within the existing substation fenceline.

*Figure B 9. Panoche Mountain Existing Microwave Tower*

***Summary of Ground Disturbance***

Table B-11 summarizes the total impact areas for PG&E's secondary telecommunications system.

**Table B-11. Secondary Telecommunications Impact Overview**

| Work Area Description | Total Impact |
|---|---|
| Microwave site permanent work area for new towers (3 – 100' x 100') | 0.69 acres |
| Microwave site temporary work area for existing tower (1 – 100' x 100') | 0.23 acres |
| Total | Approx. 0.92 acres |

## B.11.3 Avoidance and Minimization Measures for PG&E Telecommunications Activities

Table B-12 presents the Avoidance and Minimization Measures (AMMs) to which PG&E has committed. Implementation of these measures will ensure that impacts of the telecommunications upgrades will be less than significant. The effectiveness of the measures is evaluated in Section C of this Supplemental EIR.

PG&E proposes to use avoidance and minimization measures during performance of construction activities associated with the Revised Project equivalent to those for covered species in the San Joaquin Valley Habitat Conservation Plan (SJVHCP). Specifically, measures to avoid and minimize impacts to sensitive species and their habitat include AMMs BIO-1, BIO-2, and BIO-3.

PG&E considers that these AMMs would be implemented where practicable, physically possible, and not conflicting with other regulatory obligations or safety considerations; work activities will be prohibited or greatly restricted within restricted activity zones. However, vehicle operation on existing roads and foot travel will be permitted. A qualified biologist will monitor the work activities near flagged exclusion and restricted activity zones. Within 60 days after work activities have been completed at a given work-site, all staking and flagging will be removed.

**Table B-12. PG&E Avoidance & Minimization Measures (AMMs)**

| AMM Number | Measure by Issue Area |
|---|---|
| **Aesthetics** | |
| AMM AES-1 | Treat structure surfaces. "Dulled" metal finish structures will be used to reduce visual impacts on new microwave towers and steel transmission structures. |
| **Air Quality** | |
| AMM AQ-1 | Minimize fugitive dust. Consistent with the applicable Air Quality Management District's CEQA Guidelines, PG&E will minimize dust emissions during construction by implementing the following measures:<br>▪ Water all active construction areas at least twice daily.<br>▪ Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least two feet of freeboard.<br>▪ Pave, apply water three times daily, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas, and staging areas at construction sites.<br>▪ Sweep daily (with water sweepers) all paved access roads, parking areas, and staging areas at construction sites.<br>▪ Sweep streets daily (with water sweepers) if visible soil material is carried onto adjacent public streets.<br>▪ Post a publicly visible sign with the telephone number and person to contact regarding dust complaints. This person will respond and take corrective action within 48 hours. The applicable Air Quality Management Districts' phone numbers will also be visible to ensure compliance with applicable regulations.<br>Note that implementation of the first measure listed above would not apply to paved areas with no exposed soil or when rains are occurring. |
| AMM AQ-2 | **Limit equipment idling.** Limit idling times on trucks and equipment used during construction. |
| **Biological Resources** | |
| 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. |

**Table B-12. PG&E Avoidance & Minimization Measures (AMMs)**

| AMM Number | Measure by Issue Area |
|---|---|
| AMM BR-PGE-6 | Trash dumping, firearms, open fires, hunting, and pets will be prohibited at the work activity sites. |
| 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. |
| 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. |

**Table B-12. PG&E Avoidance & Minimization Measures (AMMs)**

| AMM Number | Measure by Issue Area |
|---|---|
| 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.<br>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. |
| 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 to the County for 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: |

**Table B-12. PG&E Avoidance & Minimization Measures (AMMs)**

| AMM Number | Measure by Issue Area |
|---|---|
| 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).<br>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). |
| 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:<br>• 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.<br>• 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.<br>• 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.<br>• All drainage patterns and grades will be returned to preconstruction conditions<br>• 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. |

**Table B-12. PG&E Avoidance & Minimization Measures (AMMs)**

| AMM Number | Measure by Issue Area |
|---|---|
| **Cultural Resources** | |
| AMM CR-1 | Pre-construction worker cultural resources training. Prior to construction, PG&E will design and implement a Worker Cultural Resources Training Program for all project personnel who may encounter and/or alter historical resources or unique archaeological properties. Construction supervisors, workers, and other field personnel will be required to attend the training program prior to their involvement in field operations. The program will be conducted in conjunction with other environmental awareness training and education for the project. The cultural resources training session will be led by a qualified instructor meeting the Secretary of Interior's Professional Qualification Standards as listed beginning on page 44716 of Volume 48 of the Federal Register and as may be updated by the National Park Service.<br>This Program will minimally include:<br>• A review of the environmental setting (prehistory, ethnography, history) associated with the project;<br>• A review of Native American cultural concerns and recommendations during project implementation;<br>• A review of applicable federal, state, and local laws and ordinances governing cultural resources and historic preservation;<br>• A review of what constitutes prehistoric or historical archaeological deposits and what the workers should look out for;<br>• A discussion of site avoidance requirements and procedures to be followed in the event unanticipated cultural resources are discovered during construction;<br>• A discussion of procedures to follow in the event human remains are discovered during construction;<br>• A discussion of disciplinary and other actions that could be taken against persons violating historic preservation laws and PG&E policies; and<br>• A statement by the construction company or applicable employer agreeing to abide by the program conditions, PG&E policies, and applicable laws and regulations. |
| AMM CR-2 | Cultural resource avoidance. There are no known archaeological or historical resources within the direct impact areas defined for the PG&E Upgrades. In keeping with the intent of the NHPA and CEQA, PG&E's preferred approach for archaeological resources and historical resources is avoidance of impacts to significant (or unevaluated) resources. Where avoidance is not feasible, potential impacts to significant cultural resources must be treated in a way that is acceptable to PG&E, the State Historic Preservation Officer (SHPO), and if applicable, the local Native American community. Treatment might include data recovery excavations, public interpretation/education, or other measures. If there is an unanticipated discovery of a buried archaeological deposit or human remains, PG&E will implement AMM CR-4, and -5. |
| AMM CR-3 | Cultural construction monitoring. A professional archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards will monitor all project-related excavation that is within an area of moderate to high sensitivity for prehistoric or historical buried resources. This shall include monitoring areas within 167 feet (50 meters) of recorded or previously identified prehistoric and historical-era sites or features, AMM CUL-3 will be guided by an Archaeological Monitoring and Inadvertent Discovery Plan, which will include the framework for evaluation and treatment of any unanticipated discoveries described in AMM CR-4. |
| AMM CR-4 | Unanticipated discoveries of cultural resources. In the event that previously unidentified archaeological, cultural, or historical sites, artifacts, or features are uncovered during implementation of the project, work will be suspended within 100 feet (30 meters) of the find and redirected to another location. PG&E's cultural resources specialist or designated representative will be contacted immediately to examine the discovery and determine if additional work is needed. If the discovery can be avoided or protected and no further impacts will occur, the resource will be documented on California Department of Parks and Recreation 523 forms and no further effort will be required.<br>If the resource cannot be avoided and may be subjected to further impacts, PG&E or their representative will evaluate the significance of the discovery following federal and state laws and implement data recovery or other appropriate treatment measures if warranted. Evaluation of historical-period resources will be done by a qualified historical archaeologist while evaluation of prehistoric resources will be done by a qualified archaeologist specializing in California prehistoric archaeology. Evaluations may include archival research, oral interviews, and/or field excavations to determine the full depth, extent, nature, and integrity of the deposit. |

**Table B-12. PG&E Avoidance & Minimization Measures (AMMs)**

| AMM Number | Measure by Issue Area |
|---|---|
| AMM CR-5 | Unanticipated discovery of human remains. If human remains or suspected human remains are discovered during construction, work within 100 feet of the find will stop immediately and the construction foreman shall contact the PG&E cultural resources specialist, who will then call the San Benito or Fresno County Coroner, as appropriate. There shall be no further excavation or disturbance of the site, or any nearby area reasonably suspected to overlie adjacent remains, until coroner has determined that the remains are not subject to provisions of Section 27491 of the Government Code. If the coroner determines the remains to be Native American, he/she shall contact the NAHC within 24 hours. The NAHC will appoint a Most Likely Descendent for recommendations on the treatment and disposition of the remains (Health and Safety Code Sect. 7050.5, Public Resources Code Sect. 5097.24). |
| **Hazards** | |
| AMM HAZ-1 | Proper storage and disposal of waste and hazardous materials. Hazardous materials shall not be drained onto the ground or into streams or drainage areas. Totally enclosed containment shall be provided for all trash, as well as recyclable materials. All construction waste, including trash and litter, garbage, other solid waste, petroleum products, and other potentially hazardous materials, shall be removed to a disposal facility authorized to accept such materials. |
| AMM HAZ-2 | Curtail work during red flag conditions. 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 HAZ-3 | Fire season preparedness. 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 HAZ-4 | Reduce Risk for Valley Fever. Implement the following measures to reduce the likelihood that construction workers and the public are infected with Valley Fever:<br>▪ Provide to all workers a detailed informational brochure explaining Valley Fever, its cause, and its symptoms, and the populations most at risk for the disease. The brochure shall incorporate information provided the California Department of Public Health (http://www.cdph.ca.gov/healthinfo/discond/Pages/Coccidioidomycosis.aspx) and shall be reviewed by a DPH for adequacy before the start of construction.<br>▪ If working in dusty environments, make breathing protection gear available to all workers, at their request and at no cost to workers.<br>▪ As part of a Safe Worker Environmental Awareness Program, educate workers to recognize the symptoms of Valley Fever, and to promptly report suspected symptoms of work-related Valley Fever to a supervisor. |
| **Transportation and Circulation** | |
| AMM TR-1 | Develop and Implement Traffic Control Plan. The PG&E Traffic Control Plan shall include the following:<br>▪ Demonstration of compliance with the California Joint Utility Traffic Control Manual;<br>▪ The dates of any planned road closures (full or partial);<br>▪ A plan for providing public notice of anticipated road closures and traffic delays; and<br>▪ Measures to ensure that no traffic delays exceed 30 minutes (e.g., using flaggers and signage, timing road closures to minimize impacts on traffic). |

**Table B-12. PG&E Avoidance & Minimization Measures (AMMs)**

| AMM Number | Measure by Issue Area |
|---|---|
| **Water Resources** | |
| AMM WR-1 | Hazardous material spill prevention and response plan. PG&E will implement construction controls, training and communication to minimize the potential exposure of the public and site workers to potential hazardous materials during all phases of project construction.<br>These construction practices include construction worker training appropriate to the site worker's role, containment and spill control practices in accordance with the SWPPP, and emergency response to ensure appropriate cleanup of accidental spills. If it is necessary to store chemicals, they will be managed in accordance with all applicable regulations. Material safety data sheets will be maintained and kept available on site, as applicable. The project SWPPP will identify areas where refueling and vehicle-maintenance activities and storage of hazardous materials, if any, will be permitted. All vehicles and equipment, including all hydraulic hoses, shall be maintained in good working order so that they are free of any and all leaks that could escape the vehicle or contact the ground. A monitoring program shall be implemented to ensure that the plans are followed during all construction, operations, and maintenance activities. |

## B.12 References

USEPA (United States Environmental Protection Agency). 2009. Opportunities to Reduce Greenhouse Gas Emissions through Materials and Land Management Practices. September.

Central Office. 2014. AG&T Long Lines, Microwave Tower Sites. http://www.thecentraloffice.com/microwave/nmw/NCMW2.htm. Accessed November 2014.

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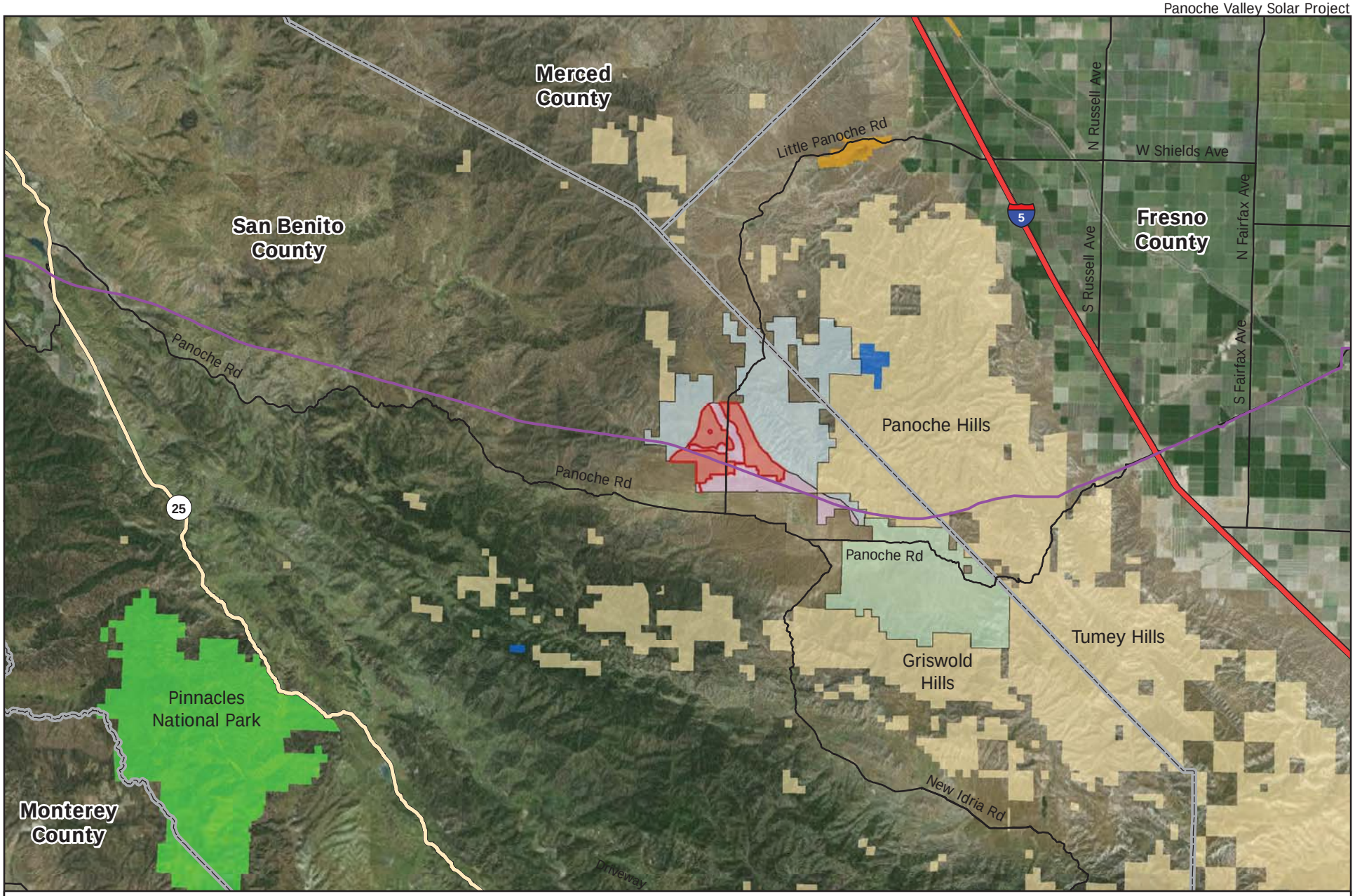



Aspen Environmental Group

N

0 3 6 Miles

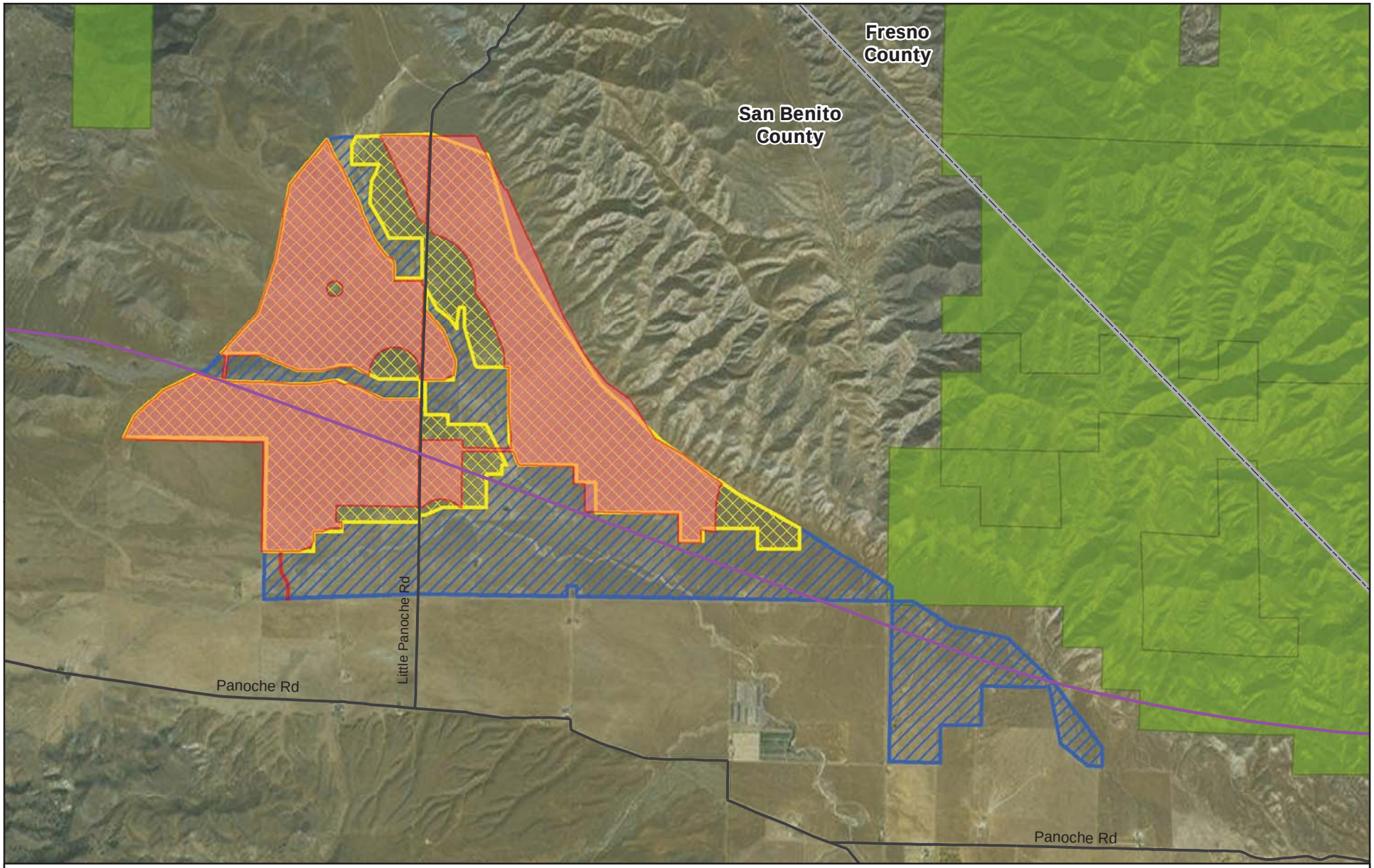
Source: PVS LLC, Platts 2013, ESRI

- Existing Transmission Line
- Interstate
- State Route
- Local Road
- County Boundary
- Revised Project Area
- Valley Floor Conservation Lands
- Valadeao Ranch Conservation Lands
- Silver Creek Ranch Conservation Lands
- Bureau of Land Management
- Bureau of Reclamation
- National Park Service
- State Lands

Figure B-1

Project Location

December 2014




Aspen Environmental Group

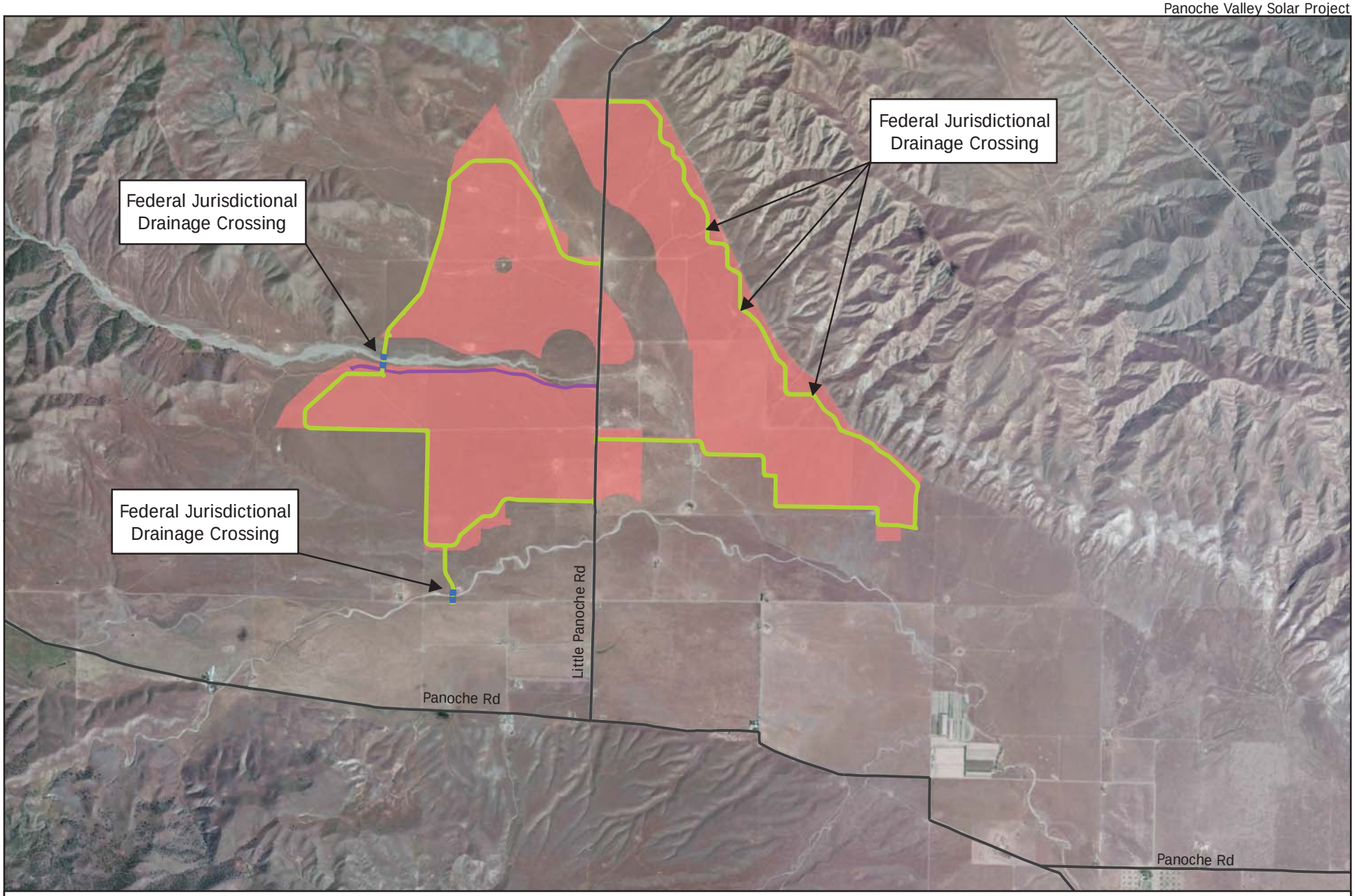
0 0.5 1 2 Miles

Source: BLM, PVS LLC, Platts 2013, ESRI

2014 Revised Project Boundary
Approved Project Boundary (Alternative A Revised)
2010 Proposed Project Boundary
Bureau of Land Management
County Boundary
Moss Landing - Panoche 230 kV Transmission Line

Figure B-2

Revised Project Boundaries




Aspen Environmental Group

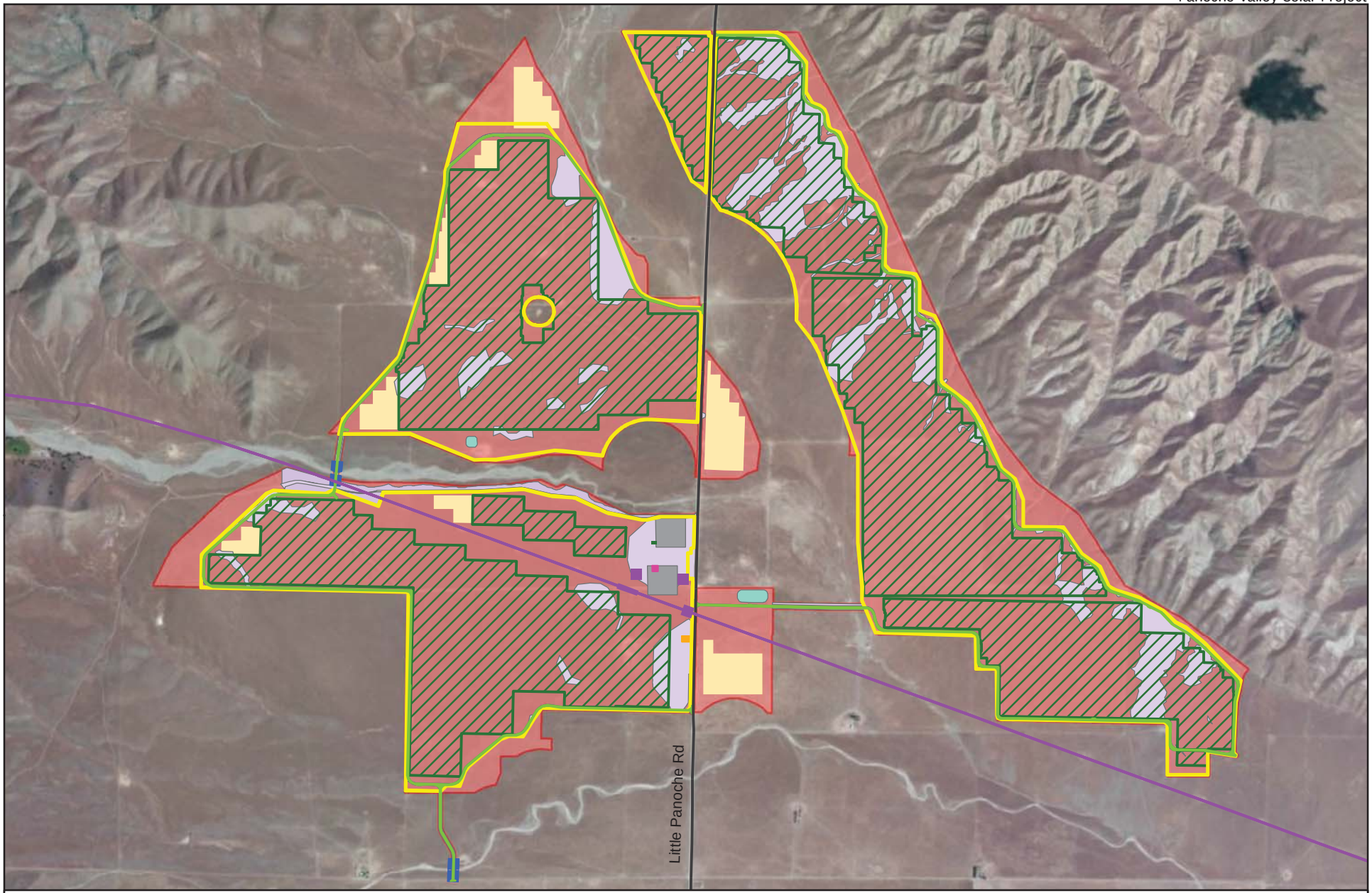
0 0.5 1 2 Miles

Source: PVS LLC, ESRI

Existing Roads
Perimeter Access Road
New Vasquez Creek Road
Revised Project Area
New Bridge Disturbance

Figure B-3

Project Roads




Aspen Environmental Group

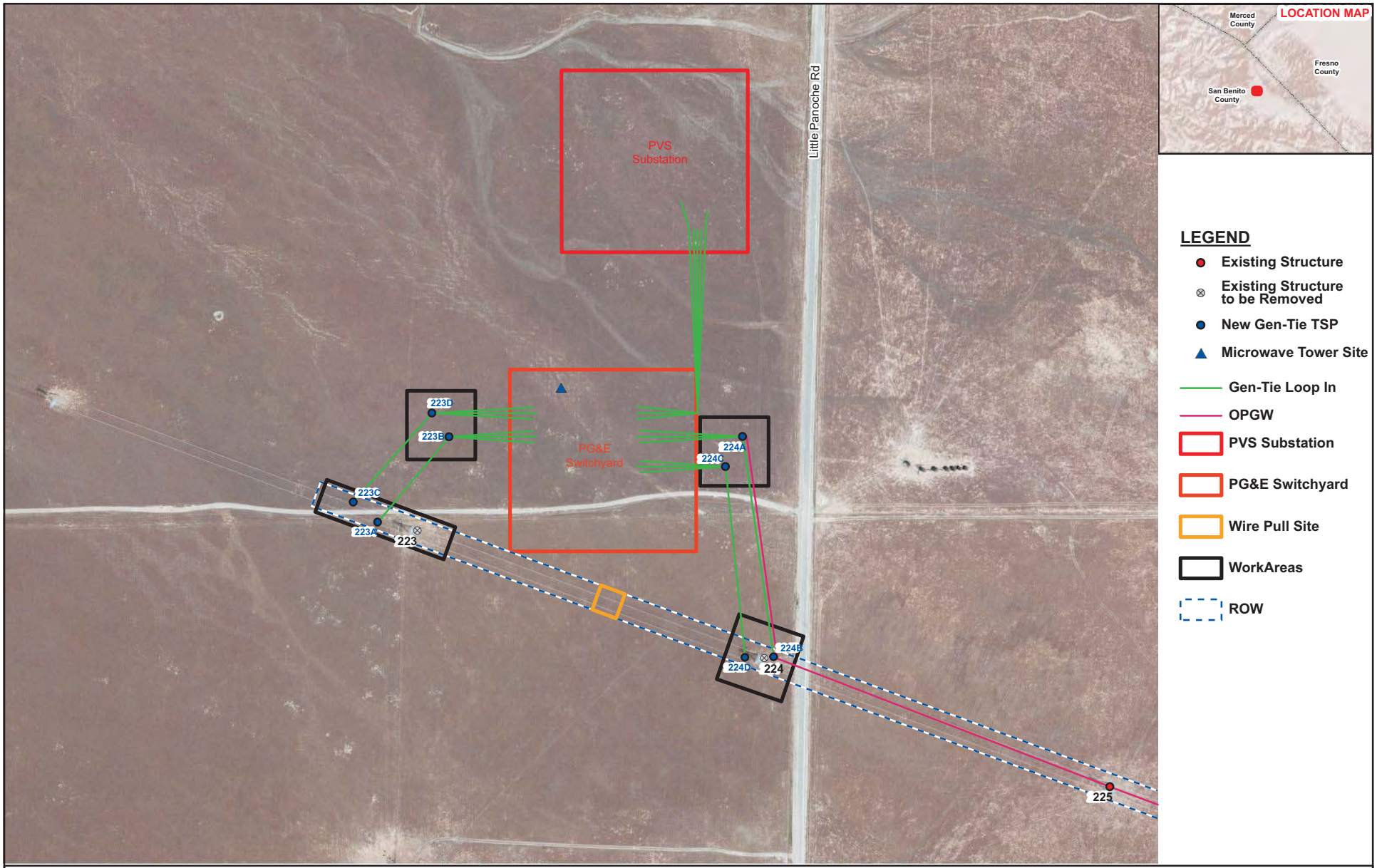
0 0.25 0.5 1 Miles

Source: PVS LLC, Platts 2013, ESRI

- 230 kV Transmission Line
- Little Panoche Road
- PV Panel Block
- Grading Area
- Revised Project Area
- Perimeter Fence
- Perimeter Road
- Laydown Yard
- Helipad
- Substation & Switchyard
- Microwave Tower Site
- TSP Work Areas
- O&M Building
- Stream Crossing Disturbance
- Temporary Water Pond

Figure B-4

Temporary and Permanent Ground Disturbance




Aspen Environmental Group

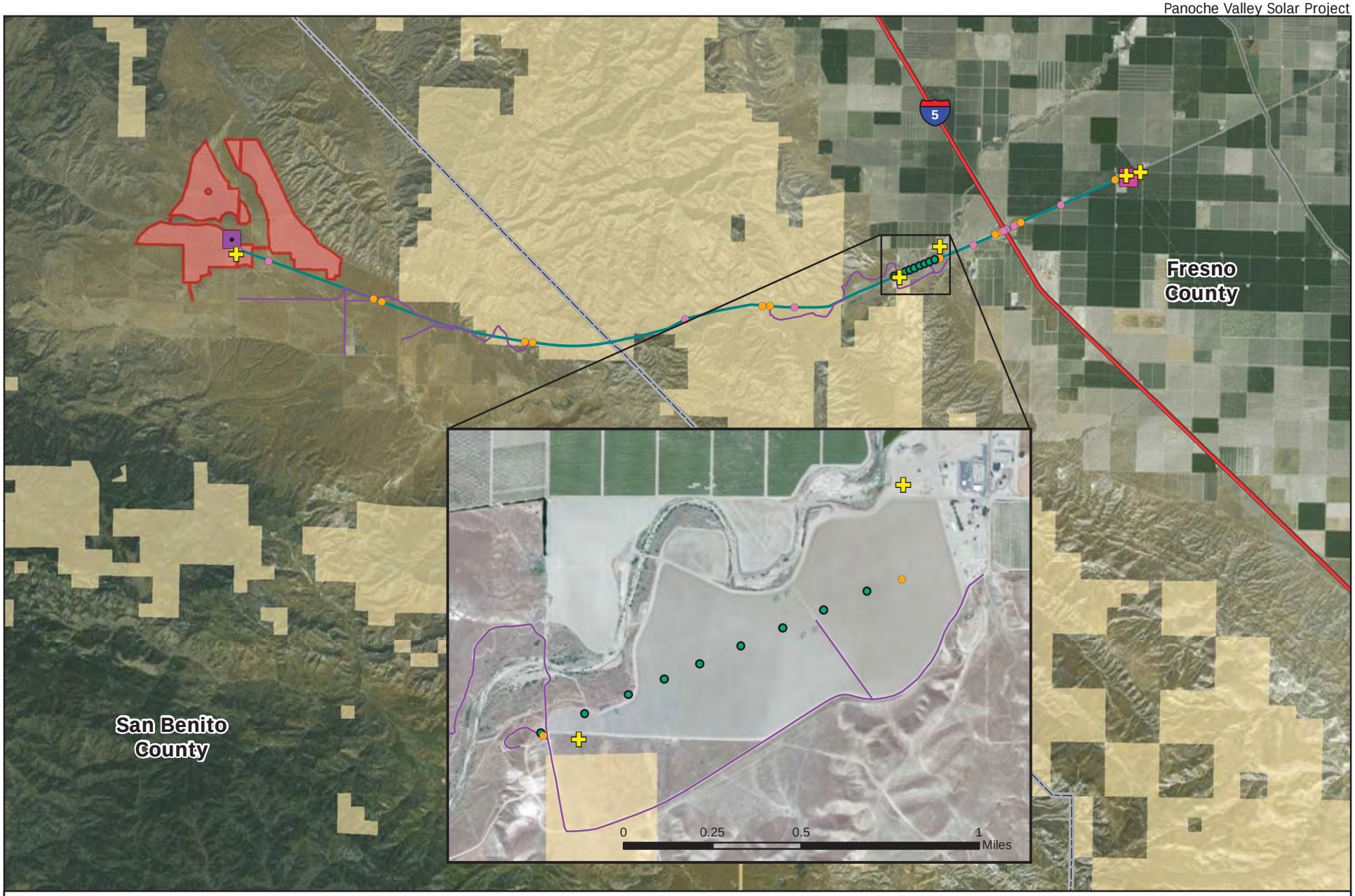
N

0 250 500 1,000 Feet

Source: PVS, 2014.

Figure B-5

Interconnection Facilities




Aspen Environmental Group

N

0 2.5 5 Miles

Source: PVS LLC, ESRI

OPGW
Access Roads
Interstate
County Boundary

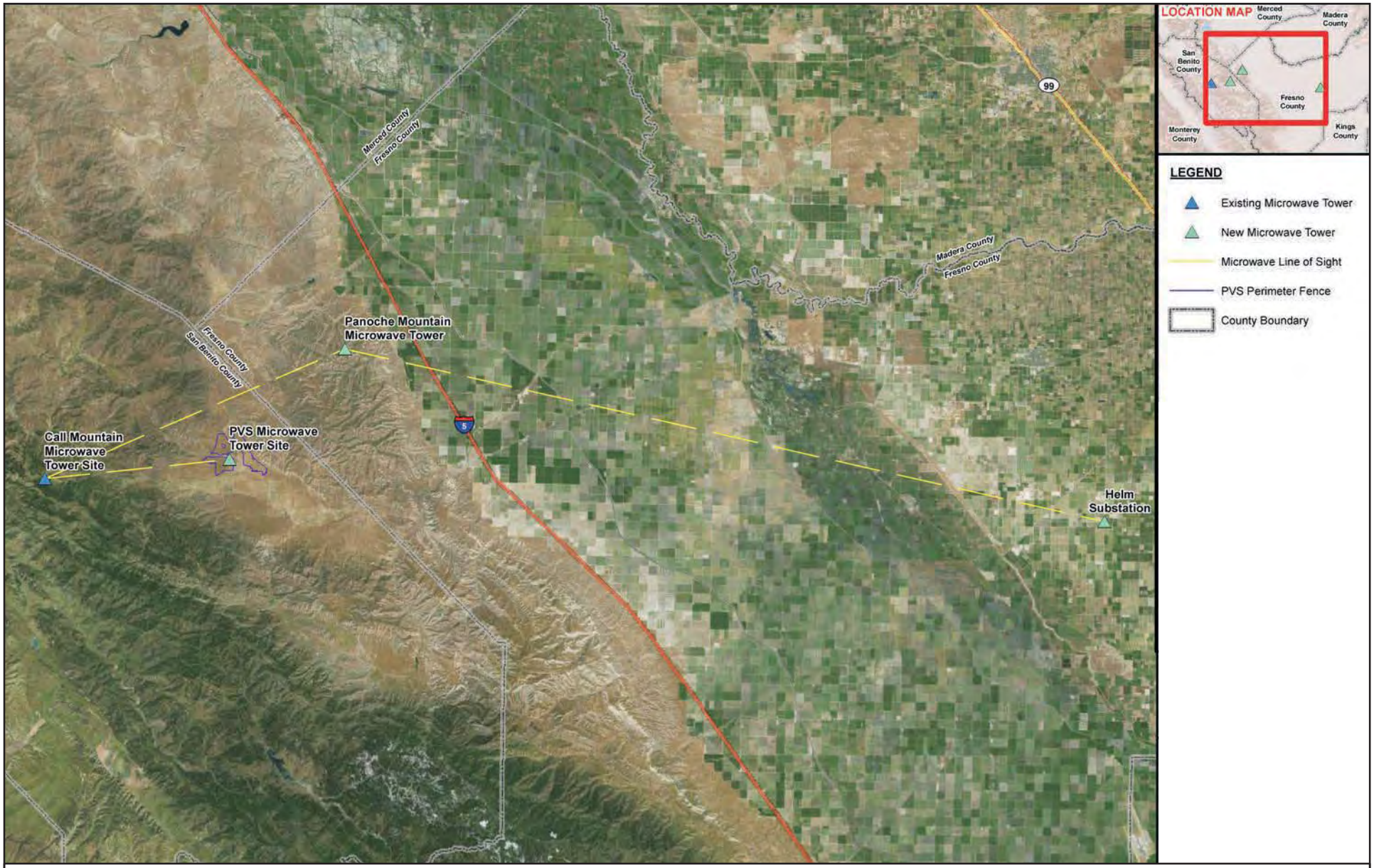
New Wood Poles
Wire Pull Site
Guard Structure Site
Helicopter Landing Site

Existing Substation
Proposed Substation
Revised Project Area
Bureau of Land Management

Figure B-6

PG&E Upgrades: OPGW

December 2014




Aspen Environmental Group

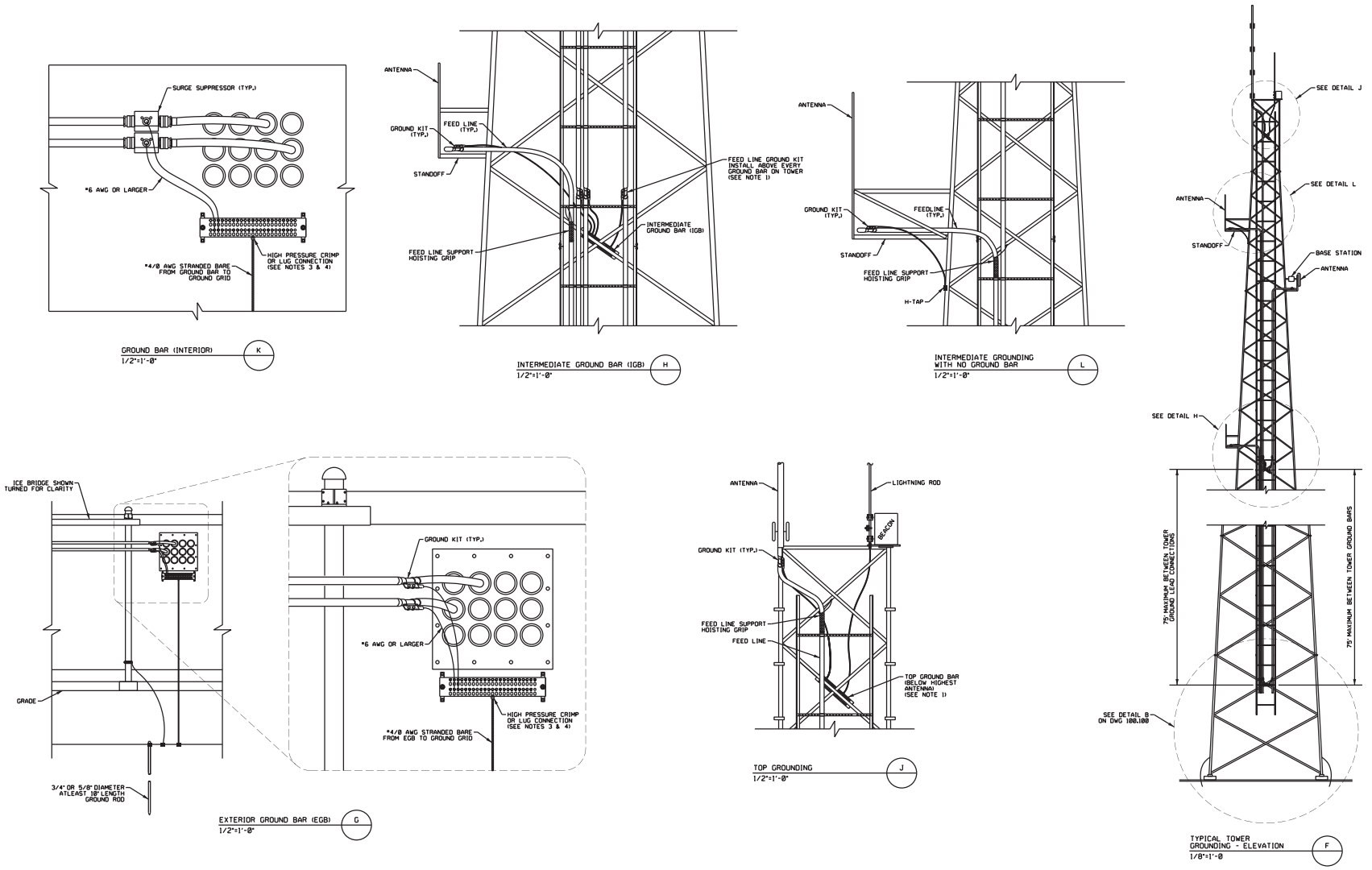
N

0 5 10 20 Miles

Source: PVS, 2014.

Figure B-7

PG&E Upgrades: Microwave Towers




GENERAL NOTES:

1. TOWER GROUND BARS (TOP, INTERMEDIATE, BOTTOM) SHOULD BE BONDED TO THE TOWER USING STRUCTURAL BOLTS. HORIZONTAL CROSS-BRACING IS PREFERRED. IF NOT AVAILABLE, MOUNT TO ANGLED BRACING.
2. ALL BELOW-GRADE BONDS AND JOINTS (E.G. CABLE-TO-CABLE, CABLE-TO-GROUND ROD, CABLE-TO-STEEL BAR, ETC.) SHOULD BE EXOTHERMICALLY WELDED.
3. EXOTHERMIC WELDING SHOULD BE USED FOR ABOVE-GROUND CONNECTIONS ONLY WHEN OTHER BONDING METHODS ARE NOT POSSIBLE.
4. WHEN EXOTHERMIC WELDING IS NOT APPLICABLE, THE FOLLOWING BONDING METHODS SHOULD BE USED: PIPE CLAMPS, LUGS AND COMPRESSION CLAMPS.

Aspen Environmental Group

Figure B-8

Microwave Tower Design

Source: PVS, 2014.

# C.1 Introduction to Environmental Analysis

## C.1.1 Organization of Section C

Section C describes the potential environmental impacts resulting from the incremental changes to the Panoche Valley Solar Project (PVSP) and the required PG&E transmission upgrades. The analysis in this section is intended to supplement the extensive analysis that was included in the previously certified 2010 Final EIR. This section has been organized as follows:

C.2 Aesthetics
C.3 Agriculture
C.4 Air Quality
C.5 Climate Change
C.6 Biological Resources
C.7 Cultural and Paleontological Resources
C.8 Geology, Mineral Resources, and Soils
C.9 Hazards and Hazardous Materials
C.10 Land Use and Recreation
C.11 Noise
C.12 Population and Housing
C.13 Public Services, Utilities, and Service Systems
C.14 Transportation and Circulation
C.15 Water Resources

## C.1.2 Environmental Assessment Methodology

The methodology used to determine potential impacts of the incremental changes to the project and the transmission upgrades consist of three key components, summarized below. These factors are discussed for each issue area in Sections C.2 through Section C.15, which follow this introduction.

**Environmental Setting Update.** The environmental setting update describes any changes to existing conditions in the project site that have occurred since the County certified the Final EIR in 2010 and the area that will be affected by the transmission upgrades. Pursuant to CEQA Guidelines (Section 15125(a)), the environmental setting used for the supplemental impact analysis reflects the conditions at the time of the issuance of the Notice of Preparation for the Supplemental EIR (October 31, 2014).

**Applicable Regulations, Plans, and Standards.** Each issue area considers whether the 2010 information requires updating to present current public policies, regulations, programs, and standards that apply to the Revised Project.

**Environmental Impacts and Mitigation.** This section evaluates whether the proposed changes to the solar project (e.g., design changes, construction changes, changes to the Applicant Proposed Measures [APMs], etc.) or the transmission system upgrades would result in any new environmental impact that was not previously analyzed and disclosed in the 2010 Final EIR, or substantially increases the severity of any environmental impact that was previously identified and analyzed in the 2010 Final EIR. The analysis is based on the same significance criteria defined in the 2010 Final EIR. In determining whether the incremental change or transmission upgrades results in any new impact or substantially increases the severity of a prior impact, the assessment considers the ability of existing regulations and other public agency requirements, as well as APMs, to reduce potential incremental impacts from the project changes. This section also evaluates any Applicant proposed changes to adopted mitigation measures and APMs and whether these changes result in new or substantially more severe environmental impacts.

If a new or substantially more severe impact results from the project changes or transmission upgrades despite the proposed APMs and application of existing regulations and requirements, the Draft Supplemental Environmental Impact Report (SEIR) recommends mitigation measures to reduce or avoid the impact, where feasible. Once impacts and mitigation measures, as applicable, are presented, the "level of significance after mitigation" is defined in a summary section.

These sections also analyzes whether any of the incremental project changes and transmission upgrades result in new or more severe cumulative impacts for each environmental discipline, and the cumulative project scenario is described in Section D. Section E summarizes the Alternatives considered in the 2010 Final EIR.

### Impact Significance

In the event the analysis identifies a new impact or an increase in the severity of a previously identified impact, the new or more severe impact is characterized as follows:

- **Class I:** Significant impact; cannot be mitigated to a level that is less than significant
- **Class II:** Significant impact; can be mitigated to a level that is less than significant through implementation of recommended mitigation measures
- **Class III:** Adverse impact; but less than significant, so mitigation is not normally recommended
- **Class IV:** Beneficial impact; mitigation is not required
- **No impact**

## C.1.3 Applicant Proposed Measures and Mitigation Measures

### Applicant Proposed Measures

The Applicant has incorporated many of the design features, measures, and procedures that were previously identified in the 2010 Final EIR into the description of its Revised Project to avoid or reduce impact from project construction and operation. These measures are referred to as Applicant Proposed Measures (APMs) in this document and are considered in the analysis of impacts and in the determinations of impact significance. APMs that will continue to be incorporated into the Revised Project but that have not been modified since 2010 are presented for reference in Appendix 3, and the relevant measures are summarized in each part of Section C. Where the Applicant has proposed changes to the APMs included in the 2010 Final EIR, each proposed change is evaluated to determine whether the change results in a new environmental impact that was not previously analyzed and disclosed in the 2010 Final EIR or substantially increases the severity of an environmental impact defined in the 2010 Final EIR.

### Mitigation Measures

The mitigation measures adopted by the County in 2010 are presented, and where measures are proposed for modification by the Applicant, the modified measures are presented and evaluated. Measures that are unchanged since the County's adoption in 2010 are presented for reference only in Appendix 3. Each mitigation measure defines the specific requirements to reduce impacts, and also defines the relevant milestone (the timeframe within which the measure must be implemented) and the mitigation monitoring requirement. Section C.1.4 defines the overall mitigation monitoring program and the Applicant's responsibility to provide financial support and documentation.

### Avoidance and Minimization Measures

For the evaluation of the PG&E transmission system upgrades, PG&E has developed Avoidance and Minimization Measures (AMMs) that PG&E will implement during construction and operation.

## C.1.4 Mitigation Monitoring

Public Resources Code Section 21081.6 establishes two distinct requirements for agencies involved in the CEQA process. Subdivisions (a) and (b) of the section relate to mitigation monitoring and reporting, and the obligation to mitigate significant effects where possible. Pursuant to subdivision (a), whenever a public agency completes an EIR and makes a finding pursuant to Section 21081(a) of the Public Resources Code taking responsibility for mitigation identified in the EIR, the agency must adopt a program of monitoring or reporting which will ensure that mitigation measures are complied with during implementation of the project.

The County is responsible for monitoring of the mitigation measures that were previously adopted for the Approved Project and any additional measures adopted pursuant to this Supplemental EIR. One important step in monitoring is defining the responsibility of the Applicant to support this process. Mitigation Measures EM-1 and EM-2 from the 2010 Final EIR define this process, and are required to support all other mitigation measures and Applicant Proposed Measures defined in this EIR. Mitigation Measure EM-1 has not been modified from the measures adopted in 2010; the text of that measure is presented for reference only in Appendix 3. Mitigation Measure EM-2 has been modified to account for the shorter construction timeframe of the Revised Project; changes are shown in underlined and strikeout text.

**MM EM-2** **Provide documentation for monitoring.** To guarantee the success of the overall environmental monitoring program defined in Mitigation Measure EM-1, the Applicant shall retain a qualified individual to verify that all adopted measures have been successfully implemented. The Applicant shall prepare monitoring reports, on an annual basis, for ~~no less than five years~~ each calendar year in which construction occurs. The first report shall be submitted to the County one year after the initiation of construction, and thereafter on an annual basis until the monitor, in consultation with the County, has determined that all measures have been successfully established. The Applicant, and successors-in-interest, shall agree to complete any necessary remedial measures identified in the report(s) to maintain compliance with all adopted mitigation measures.

# C.2 Aesthetics

This section analyzes whether the Revised Project and PG&E Upgrades result in any new significant impacts to aesthetic resources that were not previously identified and disclosed in the 2010 Final EIR, or whether there has been a substantial increase in the severity of any previously identified impacts. It considers changes to the existing visual landscape in the study area, changes to the aesthetic character of the Approved Project, and changes to potential aesthetic impacts and related mitigation measures associated with construction and operation.

## C.2.1 Environmental Setting

This section describes changes to the environmental setting that have occurred since 2010. Section C.2.1.1 describes any changes to the environmental setting that was presented in the 2010 Final EIR. Section C.2.1.2 describes the environmental setting for the area surrounding the PG&E transmission system upgrades.

### C.2.1.1 Revised Solar Project

The aesthetic environmental setting for the Revised Project site has remained substantially unchanged since approval of the 2010 Final EIR. Panoche Valley remains generally undeveloped and pastoral in character. No new development has occurred, and no major new structures have been built in the valley. Grazing remains the primary land use in the area. The viewshed for the site remains confined to Panoche Valley including residences and roads within the valley, as well as facing slopes and ridges of the surrounding hills. No new parks or other sensitive viewing areas have been established within the project viewshed.

### C.2.1.2 PG&E Upgrades

The PG&E Upgrades associated with the Revised Project include installation of approximately 17 miles of optical ground wire (OPGW) primarily on existing transmission towers between the Panoche Valley Solar Project site and the existing Panoche Substation in Fresno County. The telecommunications system upgrades also include construction of up to three new microwave communication towers and upgrades to an existing microwave tower. The PG&E transmission system upgrades would include eight new transmission structures that are required to tie the existing Moss Landing–Panoche 230 kV transmission line into the proposed PG&E switchyard, located within the Revised Project site boundaries. The new transmission structures would be installed by PG&E after site preparation is completed by the Applicant.

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, the Call Mountains (west of the Panoche Valley), Panoche Mountain (east of the Panoche Valley), and the area surrounding the Helm Substation (approximately 13 miles southwest of the City of Fresno).

The upgraded portion of the Moss Landing–Panoche transmission line runs east to west, beginning at the Panoche Substation and ending adjacent to the project substation. The eastern portion of the line traverses mainly agricultural lands before crossing Interstate 5 and Panoche Creek. The line then traverses private and BLM land within the Panoche Hills, north and west of the Tumey Hills, and enters Panoche Valley from the east. Construction activities would be visible to hikers, campers, and other recreational users on BLM land in the Panoche Hills and Tumey Hills both north and south of the transmission line upgrades. Construction activities for the western portion of the proposed transmission line upgrades would be visible to Panoche Valley residents and visitors. Construction activities would be

highly visible to motorists on West Panoche Road, which runs immediately adjacent to the proposed transmission line upgrades both east and west of Interstate 5. Similarly, construction activities would be visible to motorists on Interstate 5 near to where the highway crosses under the transmission line. Motorists on Panoche Road, which begins west of Interstate 5 and runs roughly parallel to and south of the proposed transmission line upgrades, would also have intermittent views of construction activities. Finally, construction activities for the western portion of the transmission line upgrades would be visible to motorists on Little Panoche Road.

A new microwave communication tower would be constructed within the fence line of the proposed Panoche Valley Solar Project substation. This new communication tower would be 100 feet tall, similar to the height of the lattice transmission towers.

The Call Mountains site is in an area of uninhabited mixed forest and shrubland open space located west of the Panoche Valley. At this location, a microwave dish would be added to an existing microwave communication tower. Call Mountain facilities may be intermittently visible from Panoche Road, which runs east to west approximately 3 miles north of the Call Mountain site. Because a dish would be added to an existing tower, the aesthetic landscape as seen by a motorist 3 miles away would remain essentially unchanged.

Panoche Mountain, northeast of the project site, consists of uninhabited grassland and shrubland open space. Panoche Mountain currently has two existing microwave communication towers, and a new tower, up to 100 feet tall, may be required if existing towers cannot be used. Panoche Mountain facilities are located 4 miles to the west of Interstate 5 and 4 miles to the south and east of Little Panoche Road. The distance between the Panoche Mountain facilities and the nearest roadways, as well as the presence of intervening topography, would likely result in only intermittent visibility of the facilities. Additionally, the proposed microwave communication tower would be located adjacent to two existing towers. The aesthetic landscape as seen by a motorist 4 miles away would remain essentially unchanged. The Panoche Mountain site is surrounded by BLM land, and the proposed tower would be visible to recreational users. However, the potential structural contrast of the proposed tower would be reduced by the presence of existing towers.

Helm Substation is surrounded by agricultural lands, 13 miles southwest of the City of Fresno. There is currently no microwave communication tower at the substation. A new tower would be constructed within the fence line of the substation, and would be 100 feet tall. The tower would be visible from nearby roads, including West Manning Avenue 0.75 miles to the north.

## C.2.2 Applicable Regulations, Plans, and Standards

No changes have occurred to the regulatory setting for aesthetics since 2010. However, the PG&E facilities upgrades traverse land in the jurisdiction of Fresno County.

### C.2.2.1 Fresno County

**Code of Ordinances.** Applicable ordinances include Chapter 13.12.040 Director of Public Works and Planning or Designee-Duties, which provides direction that it is unlawful for any person to plant, trim, prune, or remove any tree located upon a designated scenic drive without first obtaining a permit from the Director of Public Works and Planning or Designee.

The Revised Project would be subject to Section 816 “AE” Exclusive Agricultural District requirements; however, none of the requirements pertain to scenic resources or aesthetic concerns.

**General Plan.** The County of Fresno Draft General Plan contains policies[1] aimed at preserving scenic views and panoramas and designating and maintaining scenic roadways including highways, scenic drives, and landscaped drives. The County of Fresno Draft General Plan identifies roadways and highways that are County Designated Scenic Drives and Highways[2]. State Designated Scenic Highways in the County of Fresno include portions of State Route (SR) 180, SR-168. None of these highways have views of the PG&E work areas. The nearest Designated Scenic Highway, Highway 180 is located approximately 14 miles east of the Panoche Substation. The County of Fresno has additionally designated Scenic Drives and Scenic Highways. These include: portions of State Route 180, SR-168, and SR-198 as well as portions of Interstate-5 rural roads.[3] With the exception of Interstate 5, none of these roadways are located in visual proximity to the PG&E ROW.

## C.2.3 Environmental Impacts and Mitigation Measures

This section addresses whether the changes to the Approved Project would result in any new significant aesthetic impacts or increase the severity of previously identified aesthetic impacts. Section C.2.3.1 restates the significance criteria used in 2010 to determine whether any project changes result in new or more severe significant impacts. Section C.2.3.2 summarizes the impacts and mitigation measures presented in the 2010 Final EIR for ease of reference. Section C.2.3.3 presents the updated impact analysis for the Revised Project, and Section C.2.3.4 addresses changes to two APMs. Section C.2.3.5 addresses the environmental impacts that would occur as a result of the PG&E Upgrades, and Section C.2.3.6 describes cumulative impacts.

### C.2.3.1 Significance Criteria

The following significance criteria for aesthetics were derived from the Environmental Checklist in CEQA Appendix G. These significance criteria have been amended or supplemented, as appropriate, to address the nature of solar photovoltaic (PV) and transmission facilities in general, and the full range of potential impacts related to this Revised Project in particular. An impact of the solar project and PG&E Upgrades would be considered significant and would require mitigation if it would:

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

Also given consideration are any General Plan goals, policies, or designations that are designed to reduce aesthetic impacts. Conflicts with such laws, ordinances, regulations, and standards can constitute evidence

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1 Refer to Policies: OS-K.1 through OS-K.4; OS-L.1 through OS-L.9; and LU-B.10. These policies are available here: http://www2.co.fresno.ca.us/4510/4360/General_Plan/GP_Final_policy_doc/Open_Space_Element_rj.pdf and http://www.co.fresno.ca.us/ViewDocument.aspx?id=54226

2 A full list and maps of Fresno County Designated Scenic Drives and County Designated Scenic Highways can be found in the Draft General Plan, accessible here: http://www.co.fresno.ca.us/ViewDocument.aspx?id=60071

3 A full list and maps of Fresno County Designated Scenic Drives and County Designated Scenic Highways can be found in the Draft General Plan, accessible here: http://www.co.fresno.ca.us/ViewDocument.aspx?id=60071

of a significant aesthetic impact. Lastly, a significant aesthetic impact could occur if the Revised Project's incremental aesthetic impact would be cumulatively considerable.

## C.2.3.2 Approved Project Impacts and Mitigation Measures

Table C.2-1 presents a summary of the impacts and mitigation measures applicable to the Approved Project. These conclusions are unchanged after analysis of the Revised Project.

**Table C.2-1. Summary of Impacts and Mitigation: Aesthetics**

| Impact No. and Text | Mitigation Required | CEQA Conclusion |
|---|---|---|
| Impact AE-1: Long-term visibility of construction activities, equipment, and night lighting. | MM AE-1.1: Reduce night lighting impacts | Class I |
| Impact AE-2: Long-term visibility of land scars and vegetation clearance. | MM BR-G.3: Develop and implement a Habitat Restoration and Revegetation Plan | Class II |
| Impact AE-3: Project would introduce structure contrast, developed character, view blockage, and glare. | MM AE-3.1: Treat surfaces of project structures and buildings | Class I for KVPs 1–4<br>Class III for KVP 5 |
| Impact AE-4: Project would introduce panel glint and glare. | None | Class III |
| Impact AE-5: Contribute to cumulatively considerable aesthetics impacts. | None | Class III |

## C.2.3.3 Revised 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 Final EIR.

***Impact AE-1: Long-term visibility of construction activities, equipment, and night lighting (Class I)***

The Revised Project would be constructed in approximately 18 months. Therefore aesthetic impacts of construction activities would occur for a shorter period of time. The construction equipment used would remain the same, but the shorter construction schedule would result in a greater number of vehicles present each day within the project area during construction. Nighttime lighting would remain the same as described in the 2010 Final EIR. While the duration of aesthetic impacts for construction activities would be reduced, the intensity would be slightly increased. This impact would remain significant (Class I) and the same mitigation measures would apply (see Table C.2-1).

***Impact AE-2: Long-term visibility of land scars and vegetation clearance (Class II)***

The long-term visibility of land scars and vegetation clearance would be reduced under the Revised Project. The permanent disturbance footprint of the Revised Project was reduced to 1,888 acres from the Approved Project (2,203 acres) footprint. Permanent on-site access roads would be eliminated from the project and interstitial space (dirt paths between rows of PV panels) would be utilized as transportation corridors as needed for maintenance; therefore, the intensity of land scarring within the project perimeter would be reduced. However, a graveled perimeter access road would be added to the Revised Project, which would slightly increase the long-term visibility of land scarring and vegetation clearance. This impact would remain less than significant with mitigation (Class II).

***Impact AE-3: Project would introduce structure contrast, developed character, view blockage, and glare (Class I)***

This impact would be reduced in intensity for distant viewers, as a result of the smaller size of the project overall. The total number of solar panels that would be installed under the Revised Project would be greatly reduced compared to the Approved Project. Overall, the mostly undeveloped and pastoral aesthetic character of the valley would still be altered to a significant degree despite the reduced project footprint.

Views from KVP 1 and KVP 2 (located immediately north and south of the project boundaries) would be nearly identical to those of the Approved Project. The alteration of views from KVP 3 (located south of the southwest corner of the project) and KVP 4 (located south of the southeastern end of the Revised Project) would be slightly reduced as compared with the Approved Project, but would remain significant (Class I). Visual photosimulations from these viewpoints were presented in the 2010 Final EIR, Figures E-5 through E-8. For KVP 5, this impact would remain less than significant (Class III).

***Impact AE-4: Project would introduce panel glint and glare (Class III)***

Many fewer panels would be installed under the Revised Project than under the Approved Project, and therefore this impact would be reduced in intensity. However, this impact would remain adverse, but less than significant (Class III).

## C.2.3.4 Changes to Adopted Mitigation Measures

The applicant has not proposed any modifications to the mitigation measures adopted by the County in 2010. However, the applicant has proposed changes to two of the Applicant Proposed Measures (APMs) for aesthetics. These changes are shown below with underlining for proposed new text and strikeout for text proposed to be eliminated. Mitigation Measures and APMs not shown in this section have not changed and are presented for reference only in Appendix 3.

The proposed changes to APM AES-1 and APM AES-3 would not result in more severe or more extensive impacts. The changes to APM AES-1 serve only to clarify the applicability of the measure. As a result of the changes to APM AES-3, the total amount of project lighting would be reduced, and therefore the intensity of nighttime visual impacts would be reduced.

**APM AES-1** "Dulled" metal finish structures, and facility buildings painted in earth tones, will be used to reduce visual impacts where feasible. The solar module cells will be blue or green toned and non-reflective. Certain electrical equipment, such as transformers and capacitors cannot be dulled. Equipment that cannot be dulled will have an ANSI gray manufacturer finish. The perimeter fence will also be galvanized steel.

**APM AES-3** Operation Lighting: During operation of the project, motion-sensor lighting will be used at ~~each 2 MW block~~ the main entrance, substation and switching station. The lighting will consist of energy efficient lamps that will only be lit when human activity is detected. Motion sensors will have sensitivities set to avoid activating the lights when animal activity is occurring. This will be done to prevent startling animals and creating false alarms for security personnel. In addition to lighting, security cameras will be installed ~~near the lighting to view any activity that has caused the lighting to turn on~~ onsite. Constant lighting, at a low level, ~~will~~ may be required at the O&M building for security and safety. This will be a single lamp source near the entrance of the O&M building, which

will be activated by a timer. All lighting will have a power switch to conserve energy when the lighting is not required.

## C.2.3.5 PG&E Upgrades Impacts

The temporary and permanent aesthetic impacts for the PG&E Upgrades are analyzed in this section. This analysis is based on the impact statements defined for the solar project, but only the impacts that apply to the PG&E Upgrades are discussed. The following impacts would not occur as a result of construction or operation of the PG&E Upgrades:

- Impact AE-2: Long-term visibility of land scars and vegetation clearance
- Impact AE-4: Project would introduce panel glint and glare

***Impact AE-1: Visibility of construction activities, equipment, and night lighting (Class III)***

The construction of the PG&E Upgrades, including installation of the optical ground wire (OPGW) and new microwave communication towers, would involve the use of helicopters, pulling and stringing equipment, and other heavy machinery. These construction activities would occur in locations along the 17-mile length of the transmission line and at the proposed microwave communication tower sites for approximately 12 to 16 weeks. PG&E would also construct up to 12 new tubular steel poles (TSPs) to tie the existing transmission line into the new PG&E switchyard located within the Revised Project boundaries. Construction at any one location would take from 2 to 3 weeks and would include the presence of typical construction equipment such as scrapers, graders, backhoes and construction vehicles. Helicopters may be used to transport workers to construction areas, deliver materials, and install OPGW on existing structures. PG&E anticipates impacts within BLM-administered land (which could be visible to recreational users) would include approximately one acre of temporary disturbance associated with pull/reel and splice sites, temporary guard structures, and the microwave tower installation at Panoche Mountain.

Construction on BLM land would be visible to hikers, campers, and other recreational users, including visitors to the Panoche and Tumey Hills. Construction activities occurring within the Panoche Valley and in the western portion of the Panoche Hills would be visible to valley residents and recreational visitors to the Panoche Hills Wilderness Study Area. Construction activities east and west of Interstate 5 would be highly visible to passing motorists. Construction activities would occur during daylight hours and would not involve the use of night lighting.

Due to the short construction period and the minor temporary disturbance areas associated with construction in areas visible to recreational users, and relatively remote location of the majority of the construction, this impact would be adverse, but less than significant (Class III).

***Impact AE-3: Project would introduce structure contrast, developed character, view blockage, and glare (Class III)***

The PG&E Upgrades would include the installation of new optical ground wire (OPGW) on existing transmission towers. The OPGW would replace the existing shield wire and this component of the project would not be noticeably different from the existing shield wire on the towers.

The upgrades would also include new microwave communications towers at the Panoche Valley Solar Project site and at the Helm Substation. A third tower may be constructed on Panoche Mountain. The existing tower at Call Mountain (owned by CAL FIRE) will be used to collocate equipment needed to provide telecommunications from the project site to PG&E's system. Since an existing tower will be used

there would be no increase in visual impacts in the area. The new towers in the Panoche Valley and at Helm Substation would be 100 feet tall, and may include lighting for aviation safety if required.

The new tower on Panoche Mountain would be adjacent to two existing communication towers. The two existing towers and the proposed new tower site are located approximately 4 miles from the nearest roadway. The proposed new tower likely would be only intermittently visible to passing motorists, and may be entirely invisible due to distance and intervening topography. The proposed new tower would be visible to hikers, campers, and other recreational users of BLM land in the Panoche and Tumey Hills. Although recreational use of these hills is relatively low, these recreational users would have clear views of the new tower. Due to the substantial distance from most viewers and the presence of two existing towers adjacent to the proposed tower site, this impact would be adverse, but less than significant (Class III).

The tower at the Helm Substation would be visible, but would not be much taller than any other nearby transmission structures. This tower would be seen by motorists on adjacent roads. No residences are located near the Helm Substation, and the proposed new tower would be seen only by passing motorists and agricultural workers. Due to the low number of viewers surrounding Helm Substation and the presence of existing infrastructure (such as 230 kV transmission towers), this impact would be adverse but less than significant (Class III).

The proposed microwave tower adjacent to the project substation would also be 100 feet tall, and would be located near the tubular steel poles that would interconnect the PG&E transmission line to the project substation. The tower may require night lighting for aviation safety. The proposed substation for the project would include electrical equipment that would be up to 35 feet tall, and there would be up to 12 new steel transmission poles to interconnect the solar project with the substation, each about 85 feet tall.

The 2010 Final EIR concluded that solar project structures, including the substation equipment, would result in significant (Class I) visual impacts for four of the five Key Viewpoints (KVPs) analyzed. The new microwave tower would be about the same height as other project components. In the context of those future interconnection structures, the visibility of the proposed microwave tower within the Panoche Valley would be less than significant (Class III). Avoidance and Minimization Measure (AMM) AES-1 (presented in Table B-12, Section B.11.3) would require that PG&E use “dulled” metal finish structures to reduce the visibility of the new tubular steel transmission structures and the microwave towers.

### C.2.3.6 Cumulative Impacts

The projects that have been constructed or proposed in the area of potential cumulative effects have changed since 2010, as described in Section D. However, even considering the new project list, the Revised Project and the PG&E Upgrades would not combine with impacts of other projects to result in a cumulatively significant impact (Class III).

## C.2.4 Summary of Impacts

The significance of impacts for aesthetics for the Revised Project and for the PG&E Upgrades is summarized in Sections C.2.4.1 and C.2.4.2. Section C.3.3 summarizes the impacts of all project components.

### C.2.4.1 Revised Solar Project

There are no changes to the significance of impacts from the conclusions of the 2010 Final EIR. The impacts summarized in Table C.2-1 remain accurate.

While the Revised Project's construction period would be approximately 18 months, as opposed to the five year period originally defined, construction would still result in significant and unmitigable (Class I) impacts on aesthetics due to the visibility of construction equipment, materials, and activities. However, the visibility of residual land scars and vegetation clearance as a result of construction, though significant, could be mitigated to levels that would be less than significant (Class II) with the effective revegetation and restoration of the project site. The operation of the project and associated long-term visibility of developed features would result in significant and unmitigable (Class I) aesthetic impacts from four of the 5 key viewpoints, and adverse but less than significant impacts from the fifth viewpoint (Class III).

### C.2.4.2 PG&E Upgrades

The PG&E Upgrades would result in a less than significant impact to the visibility of construction activities and equipment (Class III). The construction period would be short, and the work would not be highly visible. The presence of the new microwave towers at the Panoche Valley switchyard, Helm Substation, and Panoche Mountain would result in less than significant impacts (Class III) with implementation of AMM AES-1 and due to the presence of other similar structures immediately adjacent to the microwave towers.

### C.2.4.3 Overall Significance of Impacts

The visual impacts of the Revised Project remain significant and unmitigable, even though the project is reduced in size. PG&E's installation of new OPGW and microwave towers would not create significant impacts from either construction or operation.

# C.3 Agriculture

This section analyzes whether the Revised Project and PG&E Upgrades would result in any new significant impacts to agriculture that were not previously identified and disclosed in the 2010 Final EIR, or whether there would be a substantial increase in the severity of any previously identified impacts to agriculture. As part of this analysis, the section considers changes to the agricultural lands and activities in the study area, changes to the development footprint of the project, and changes to potential agricultural impacts and mitigation measures.

Data sources that were used for this analysis include farmland data from the California Department of Conservation (DOC, 2013, 2014a, 2014b), soil survey data from the Natural Resources Conservation Service (NRCS, 2014), and agricultural data from the California Department of Food and Agriculture and Fresno County (CDFA, 2013; Fresno County, 2012).

## C.3.1 Environmental Setting

The following section describes changes to the environmental setting that have occurred since 2010. Section C.3.1.1 describes any changes to the environmental setting that was presented in the 2010 Final EIR. Section C.3.1.2 describes the environmental setting for the area surrounding the PG&E Upgrades.

### C.3.1.1 Revised Solar Project

The agricultural environmental setting for the Revised Project site has remained substantially unchanged since approval of the 2010 Final EIR. Panoche Valley remains generally undeveloped and pastoral in character. No new development has occurred, and no major new structures have been built in the valley. Grazing remains the primary land use in the area. The previous Williamson Act contracts on and adjacent to the project site were approved for cancellation in 2010. As shown on Figure C.3-1 (at the end of this section), the project site is surrounded by agricultural land that is enrolled in Williamson Act contracts. While there are remaining Williamson Act contracts affected by the proposed project, these contracts are approved for cancellation.

The California Department of Conservation's Farmland Mapping and Monitoring Program (DOC FMMP) identifies Important Farmland throughout California based on both current use and soil quality. In order to be classified as Prime Farmland or Farmland of Statewide Importance by FMMP, land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date. As noted in the 2010 Final EIR the FMMP classifies the entire project area as Grazing Land. This classification has not changed and reflects the current grazing use of the site.

In 2010, most of the land nearby the project site was used for grazing cattle, except for a limited amount of orchards, vineyards, and field crops within approximately a mile of the southeast portion of the project site. These same agricultural activities continue in 2014. Most of the surrounding agricultural operations continue to rely on rotational grazing and dry farming (Williams, pers. comm., 2010; McCormick, pers. comm., 2014). The Revised Project would be approximately 4,770 feet northwest of farmland designated as Prime Farmland and approximately 5,700 feet northwest of farmland designated as Unique Farmland. The project boundary is more than 5 miles east of Farmland of Local Importance. Figure C.3-2 shows FMMP designations near the project site.

In addition to using the FMMP designation the 2010 Final EIR identified soil types, which have not changed. Project site soil types were identified and assessed based on the California Revised Storie Index, Land Capability Class, and United States Department of Agricultural Natural Resources Conserva-

tion Service (USDA NRCS) Classification. Table C.3-1 (Panoche Valley Solar Soil Types and Agricultural Classifications) shows the soil types present on the project site and whether they are considered Prime agricultural soils based on Storie Index, Land Capability Class, and NRCS Classification.

**Table C.3-1. Panoche Valley Solar Soil Types and Agricultural Classifications**

| Name (Map Unit Symbol) | California Revised Storie Index | Land Capability Class | | NRCS Prime Farmland Classification | Prime Soil? |
|---|---|---|---|---|---|
| | | Non-Irrigated | Irrigated | | |
| Gullied lands (GuE) | Not Rated | 8 | — | Not Prime Farmland | No |
| Kettleman loam, 15-50% slopes (KeF2) | Grade Three–Fair | 6 | — | Not Prime Farmland | No |
| Los Banos clay loam, 2-9% slopes (LuC) | Grade One–Excellent | 4 | 2 | Farmland of Statewide Importance | Yes |
| Los Banos clay loam, 15-50% slopes, severely eroded (LuF3) | Grade Two–Good | 6 | — | Not Prime Farmland | No |
| Panhill loam, 2-9% slopes (PhC) | Grade One–Excellent | 4 | 2 | Farmland of Statewide Importance | Yes |
| Panoche sandy loam, 0-2% slopes (PkA) | Grade One–Excellent | 4 | 1 | Prime Farmland if Irrigated | Yes |
| Panoche sandy loam, 2-9% slopes (PkC) | Grade One–Excellent | 4 | 2 | Prime Farmland if Irrigated | Yes |
| Panoche loam, 0-2% slopes (PIA) | Grade One–Excellent | 4 | 1 | Prime Farmland if Irrigated | Yes |
| Panoche loam, 2-9% slopes (PIC) | Grade One–Excellent | 4 | 2 | Prime Farmland if Irrigated | Yes |
| Riverwash (Rw) | Not Rated | 8 | — | Not Prime Farmland | No |
| Shedd loam, 15-30% slopes, eroded (ShE2) | Grade Three–Fair | 4 | 4 | Not Prime Farmland | No |
| Vallecitos rocky loam, 30-50% slopes, eroded (VrF2) | Grade Four–Poor | 6 | — | Not Prime Farmland | No |
| Yolo loam, 2-9% slopes (YoC) | Grade One–Excellent | 3 | 2 | Prime Farmland if Irrigated | Yes |
| Yolo gravelly loam, 0-5% slopes (YvB) | Grade Three – Fair | 3 | 2 | Prime Farmland if Irrigated | Yes |

Table C.3-2 shows a comparison of the soil classifications for the project boundary from the 2010 Final EIR and the project boundary for the Revised Project.

**Table C.3-2. Panoche Valley Solar Soil Classification for 2010 Final EIR and 2014 Revised Project**

| Soil Classification | 2010 Final EIR | | 2014 Revised Project | |
|---|---|---|---|---|
| | Acres | Percentage | Acres | Percentage |
| Storie Index | | | | |
| Grade One – Excellent | 4,255.9 | 87% | 2,430.4 | 97% |
| Grade Two – Good | 6.5 | 0.1% | 7.0 | 0.3% |
| Grade Three – Fair | 471.66 | 9.7% | 56.4 | 2.3% |
| Grade Four – Poor | 10.2 | 0.2% | 10.1 | 0.4% |
| Null or Not Rated | 141.5 | 3% | 2.1 | 0.1% |
| Total | 4,885.7 | 100% | 2,506 | 100% |

**Table C.3-2. Panoche Valley Solar Soil Classification for 2010 Final EIR and 2014 Revised Project**

| | 2010 Final EIR | | 2014 Revised Project | |
|---|---|---|---|---|
| Soil Classification | Acres | Percentage | Acres | Percentage |
| Land Capability Class and Subclass (Non-Irrigated)[1] | | | | |
| 3e | 469.6 | 9.6% | 424.3 | 16.9% |
| 4e | 4,237.8 | 86.8% | 2,048.0 | 81.8% |
| 6e | 36.8 | 0.8% | 31.6 | 1.3% |
| 8e/w | 141.5 | 2.9% | 2.1 | 0.1% |
| Total | 4,885.7 | 100% | 2,506 | 100% |
| NRCS Farmland Classification | | | | |
| Prime Farmland if Irrigated | 4,058.2 | 83% | 2,163.8 | 86.3% |
| Farmland of Statewide Importance | 629.4 | 13% | 266.6 | 10.7% |
| Not Prime Farmland* | 198.1 | 4% | 75.6 | 3.1% |
| Total | 4,885.7 | 100% | 2,506 | 100% |

1 - Capability subclasses are designated by adding a small letter, e, w, s, or c, to the class numeral, for example, 2e. The letter e shows that the main hazard is the risk of erosion unless close-growing plant cover is maintained; w shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); s shows that the soil is limited mainly because it is shallow, droughty, or stony; and c, used in only some parts of the United States, shows that the chief limitation is climate that is very cold or very dry (NRCS,2014).

Source: Web Soil Survey, NRCS, 2014.

* - Not Prime Farmland designation primarily consists of Class 6 and 7 soils, which are characterized by severe limitations that make them generally unsuitable for cultivation and restrict their use mainly to grazing, pasture, and rangeland (NRCS, 2010b). For more detail about NRCS farmland classification categories, see NRCS – National Soil Survey Handbook Part 622: http://soils.usda.gov/technical/handbook/contents/part622.html. Source: Soil Survey Staff, NRCS, 2010.

### Williamson Act

At the time of the 2010 Final EIR, nearly the entire originally proposed project site was enrolled in Williamson Act contracts. The Board approved cancellation of these contracts, totaling 6,953 acres in October 2010. The acreage approved for cancellation exceeded the acreage within the project boundary because several of the Williamson Act contracts extended outside the project boundary, but were not eligible for partial cancellation. Of the total acreage cancelled, 4,302 acres were classified as Prime by the County and 2,651 acres were classified as Non-Prime. All of the land subject to the Williamson Act cancellations was used solely for cattle grazing and not for field crop production.

## C.3.1.2 PG&E Upgrades

The proposed PG&E Upgrades would be located in San Benito County (7 miles) and Fresno County (10 miles). A portion of the PG&E ROW is on BLM land (2.3 miles in San Benito County and 4.1 miles in Fresno County).

Most of the PG&E work would consist of overhead installation of OPGW on existing transmission towers. However, an existing 230 kV transmission line crosses under two existing 500 kV transmission lines 1.5 miles west of the I-5 crossing. At this location, upgrades would require installation of approximately 9 permanent wooden poles (10 square feet total) over a 4,650-foot section of transmission line. The new poles would be installed within the existing PG&E ROW on agricultural land. PG&E Upgrades would also require installation of microwave towers and eight new transmission structures that are required to tie the existing Moss Landing–Panoche 230 kV transmission line into the proposed PG&E switchyard located within the Revised Project site boundaries, as described in Section B (Project Description). The new transmission structures would be installed by PG&E after site preparation is completed by the Applicant.

Table C.3-3 shows the overlap of permanent structures from the PG&E Upgrades with FMMP-designated agricultural land.

**Table C.3-3. PG&E Upgrades: Permanent Structures on FMMP-Designated Farmland**

| FMMP Designation | Wood Poles (Permanent Impact) | Microwave Sites (Permanent Impact) |
|---|---|---|
| P-Prime Farmland | 6.66 square feet (6 poles) | N/A |
| G-Grazing Land | 3.33 square feet (3 poles) | 0.23 acres (10,019 square feet) |
| Total | 10 square feet | 0.23 acres (10,019 square feet) |

The site of the Helms Substation microwave tower is designated as Urban and Built-Up Land by the FMMP, which is not considered a farmland category and is, therefore, not included in Table C.3-3. The Panoche Mountain microwave tower site is designated as Grazing Land. There would be 6 wood poles on Prime Farmland, and 3 wood poles on Grazing Land. The affected Prime Farmland is currently being used for farming pomegranates.

The PG&E ROW supports agricultural production (vineyards and crop production) as well as rangeland/ grazing land. The PG&E ROW is similar to the project site and the setting presented in the 2010 Final EIR. The surrounding land uses are used for agricultural operations such as; vineyards, orchards, and field crops as well as cattle grazing along the western portion of the alignment in San Benito County. See Figure C.3-3 for an overview of FMMP designations along the PG&E ROW and at the microwave tower sites. PG&E's ROW passes through approximately 5 miles of Williamson Act lands in San Benito County and approximately 4.4 miles of Williamson Act land in Fresno County.

### San Benito County

Seven miles of the affected PG&E ROW are in San Benito County, as is the proposed microwave tower on Call Mountain, which is approximately 9 miles west of the solar project site. A general description of agricultural land in San Benito County is included in Section C.3.1.1 (Solar Project: Changes to Environmental Setting since Project Approval) and in the 2010 Final EIR. All of the PG&E Upgrades in San Benito County would occur on land zoned for agricultural use. A small amount, 58.9 acres, of land designated as Prime Farmland and another 8.1 acres designated as Unique Farmland are located within 1 mile of the PG&E OPGW upgrades in San Benito County. No FMMP-designated Important Farmland exists within 1 mile of either the Call Mountain or Panoche Mountain microwave towers. Within San Benito County, there are no FMMP designated Prime Farmlands, Unique Farmlands, or Farmlands of Local Importance within 0.25 miles of the PG&E ROW, or the microwave tower site at Call Mountain.

### Fresno County

Ten miles of the proposed PG&E Upgrades would be located in the San Joaquin Valley in western Fresno County, as would the Panoche Mountain microwave tower. Several categories of FMMP Important Farmland are located within 1 mile of the PG&E OPGW upgrades in Fresno County, including 5,394.8 acres of Prime Farmland, 44.2 acres of Farmland of Statewide Importance, 27.5 acres of Unique Farmland, and 89.0 acres of Farmland of Local Importance. In addition, several categories of FMMP Important Farmland are located within 1 mile of the proposed microwave tower at Helm Substation in Fresno County, including 128.1 acres of Prime Farmland, 1,236.5 acres of Farmland of Statewide Importance, and 452.2 acres of Unique Farmland. Within the portion of the PG&E ROW and microwave tower sites located in Fresno County, approximately 2.35 acres are designated as Prime Farmland, 0.13 acres is des-

ignated Farmland of Local Importance. The remaining areas are designated as Grazing Land (1.27 acres), Urban and Built-Up Land (1.13 acres), and Vacant or Disturbed Land (0.60 acres).

Agriculture dominates Fresno's economy. Fresno County has ranked first in the nation based on the gross value of its agricultural production since the 1950s (Fresno County General Plan, 2014; Fresno County Crop Report, 2012). In 2012, the value of the County's agriculture was $6.58 billion. The County's top four agricultural commodities are almonds, livestock, grapes, and milk (CDFA, 2013). The value of the County's top 10 leading crops is shown in Table C.3-4.

**Table C.3-4. Fresno County Top 10 Crops**

| Crop | 2012 Rank | 2012 Dollar Value |
|---|---|---|
| Grapes | 1 | $1,106,081,000 |
| Almonds | 2 | $952,056,000 |
| Poultry | 3 | $728,503,000 |
| Milk | 4 | $450,064,000 |
| Tomato | 5 | $433,700,000 |
| Cattle and Calves | 6 | $380,309,000 |
| Cotton | 7 | $272,379,000 |
| Pistachios | 8 | $195,969,000 |
| Peach | 9 | $169,861,000 |
| Plum | 10 | $144,909,000 |
| Total for Top Ten | | $4,883,849,000 |

Source: Fresno County Crop Report, 2013.

As of 2012, there were approximately 1.5 million acres of Williamson Act lands in Fresno County (DOC, 2013).

### BLM Land

Over 6 miles of the proposed PG&E Upgrades and the Panoche microwave tower would occur on lands managed by the BLM. These lands are managed as Grazing Land under the supervision of the BLM Hollister Field Office.

## C.3.2 Applicable Regulations, Plans, and Standards

The applicable regulations, plans, and standards that apply to the assessment of agriculture impacts at the state and federal level and within the San Benito County portion of the project area are presented in Section C.3.2 of the 2010 Final EIR. Because a portion of the PG&E ROW traverses BLM lands and Fresno County, relevant Fresno County policies and BLM policies are discussed below.

### BLM Land Management Policies

**Federal Land Policy and Management Act (FLPMA) of 1976.** FLPMA is the BLM's "organic act," which establishes the agency's multiple-use mandate. FLPMA was enacted to establish a unified, comprehensive, and systematic approach to managing and preserving public lands in a way that protects "the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values." In the context of the FLPMA, public lands consist of federally owned lands that have not been set aside for national forests and parks, wildlife preservation areas, military bases, or other federal purposes. Under FLPMA, the BLM is required to establish a planning process for the management of public lands that accommodates multiple uses of the land and its resources and achieves sustained yields of natural resources.

**Central California Standards for Rangeland Health and Guidelines for Livestock Grazing Management** (BLM, 1999). These standards for rangeland health are intended to accomplish the following goals: (1) Watersheds are properly functioning; (2) Ecological processes are in order; (3) Water quality complies with State standards; and (4) Habitats of special-status species are protected.

## Fresno County Agricultural Policies

The Fresno County 2000 General Plan includes the following goals and policies related to agricultural resources:

- **Agricultural Land Use Designation.** This designation provides for the production of crops and livestock, and for location of necessary agriculture commercial centers, agricultural processing facilities, and certain non-agricultural activities.
- **LU-A.1 (Agricultural Land Conservation).** The County shall maintain agriculturally designated areas for agriculture use and shall direct urban growth away from valuable agricultural lands to cities, unincorporated communities, and other areas planned for such development where public facilities and infrastructure are available or can be provided consistent with the adopted General or Community Plan.
- **LU-A.3 (Special Agricultural Uses).** The County may allow by discretionary permit in areas designated Agriculture, special agricultural uses and agriculturally related activities, including value-added processing facilities, and certain non-agricultural uses listed in Table LU-3. Approval of these and similar uses in areas designated Agriculture shall be subject to listed criteria.
- **LU-A.12 (Agricultural Protection).** In adopting land uses policies, regulations, and programs, the County shall seek to protect agricultural activities from encroachment of incompatible land uses.
- **LU-A.13 (Agricultural Buffers).** The County shall protect agricultural operations from conflicts with non-agricultural uses by requiring buffers between proposed nonagricultural uses and adjacent agricultural operations.
- **LU-A.14 (Agricultural Land Conversion Review).** The County shall ensure that the review of discretionary permits includes an assessment of the conversion of productive agricultural land and that mitigation be required where appropriate.
- **LU-A.16 (Agricultural Land Preservation Programs).** The County should implement agricultural land preservation programs for long-term conservation of viable agricultural operations.
- **LU-A.17 (Williamson Act Contracts).** The County should accept Williamson Act contracts on all designated agricultural land subject to location, acreage, and use limitations established by the County.
- **LU-A.19 (Reduced Soil Erosion).** The County shall encourage landowners to participate in programs that reduce soil erosion and increase soil productivity. To this end, the County shall promote coordination between the Natural Resources Conservation Service, Resource Conservation Districts, UC Cooperative Extension, and other agencies and organizations.
- **LU-A.20 (Water Resources).** The County shall adopt and support policies and programs that seek to protect and enhance surface water and groundwater resources critical to agriculture.
- **LU-B.1 (Westside Rangeland Purpose).** The County shall maintain areas designated Westside Rangeland for grazing and other appropriate open space uses and shall direct development to areas specifically planned for more intensive uses.
- **LU-B.2 (Allowed Uses).** The County shall allow by right in areas designated Westside Rangeland, grazing and other agricultural activities related to the production of food and fiber and support uses incidental and secondary to the onsite agricultural operations.
- **LU-B.3 (Discretionary Uses).** The County may allow by discretionary permit in areas designated Westside Rangeland special agricultural uses and agriculturally related activities, and certain non-agricultural uses. Approval uses in areas designated Westside Rangeland shall be subject to listed criteria.

- **LU-B.10 (Scenic Rangelands Protection).** The County shall require that new development requiring a County discretionary permit be planned and designed to maintain the scenic open space character of rangelands including view corridors of highways. New development shall use natural landforms and vegetation in the least visually disruptive way possible, and use design, construction and maintenance techniques that minimize the visibility of structures on hillsides, ridgelines, steep slopes, and canyons.

## C.3.3 Environmental Impacts and Mitigation Measures

This section addresses whether the changes to the Approved Project would result in a new significant agricultural impacts or increase the severity of previously identified agricultural impacts. Section C.3.3.1 restates the significance criteria used in 2010 to determine whether any project changes result in any new or more severe significant impacts. Section C.3.3.2 summarizes the impacts and mitigation measures presented in the 2010 Final EIR for ease of reference. Section C.3.3.3 presents the updated impact analysis for the Revised Project, and Section C.3.3.4 addresses the impacts of a proposed change in a previously adopted APM. Section C.3.3.5 addresses the environmental impacts that would occur as a result of the PG&E Upgrades, and Section C.3.3.6 describes cumulative impacts.

### C.3.3.1 Significance Criteria

The following significance criteria for agriculture were derived from the Environmental Checklist in CEQA Appendix G. These significance criteria were used for the 2010 Final EIR and are also applied to this SEIR. They have been amended or supplemented, as appropriate, to address the nature of solar photovoltaic (PV) facilities and transmission line upgrades in general, and the full range of potential impacts related to this Revised Project in particular. An impact of the Revised Project and PG&E Upgrades would be considered significant and would require mitigation if it would:

- Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared by the DOC's FMMP, to non-agricultural use
- Conflict with Williamson Act contracts, existing zoning for agricultural use, or objectives in the County General Plan's Agriculture and Conservation and Open Space Elements
- Involve other changes in the existing environment which, due to their location or nature, could impair agricultural use of nearby properties

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

### C.3.3.2 Approved Project Impacts and Mitigation Measures

Table C.3-5 presents a summary of the impacts and mitigation measures applicable to the Approved Project.

**Table C.3-5. Summary of Impacts and Mitigation: Agriculture**

| Impact No. and Text | Mitigation Required | CEQA Conclusion |
|---|---|---|
| Impact AG-1: Project would convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared by the Department of Conservation's (DOC's) Farmland Mapping and Monitoring Program (FMMP), to non-agricultural use. | MM BR-G.3: Development and implementation of a Habitat Restoration and Revegetation Plan.<br>MM BR-G.5: Create permanent conservation easements as compensation for impacts to biological resources.<br>MM BR-G.6: Develop and implement Habitat Mitigation and Monitoring Plan for mitigation lands.<br>MM BR-1.2: Develop and implement a Grazing Plan for the project site. | Class II |
| Impact AG-2: Project would conflict with Williamson Act contracts, existing zoning for agricultural use, or objectives in the County General Plan's Agriculture and Conservation and Open Space Elements. | MM AG-2.1: Create agricultural conservation easement(s).<br>MM BR-1.2: Develop and implement a Grazing Plan for the project site.<br>MM BR-G.3: Development and implementation of a Habitat Restoration and Revegetation Plan.<br>MM BR-G.5: Create permanent conservation easements as compensation for impacts to biological resources.<br>MM BR-G.6: Develop and implement Habitat Mitigation and Monitoring Plan for mitigation land. | Class II |
| Impact AG-3: Construction and operation of project would impair agricultural use of nearby properties. | MM AQ-1.1: Reduce fugitive dust.<br>MM BR-1.1: Prepare and implement a Weed Control Plan.<br>MM BR-1.2: Develop and implement a Grazing Plan for the project site.<br>MM BR-G.5: Create permanent conservation easements as compensation for impacts to biological resources.<br>MM LU-1.1: Establish construction liaison.<br>MM LU-1.2: Provide advance notification of construction.<br>MM LU-1.3: Provide quarterly construction updates.<br>MM WR-1.1: Groundwater Monitoring and Reporting Plan.<br>MM WR-1.2: Aquifer Testing and Well Interference Analysis.<br>MM WR-6.1: Accidental spill control and environmental training.<br>MM WR-6.2: Store fuels and hazardous materials away from sensitive water resources.<br>MM WR-6.3: Maintain vehicles and equipment. | Class II |
| Impact AG-4: Contribute to cumulatively considerable agricultural impacts. | MM AG-2.1: Create agricultural conservation easement(s).<br>MM BR-G.3: Development and implementation of a Habitat Restoration and Revegetation Plan.<br>MM BR-G.5: Create permanent conservation easements as compensation for impacts to biological resources.<br>MM BR-G.6: Develop and implement Habitat Mitigation and Monitoring Plan for mitigation land.<br>MM BR-1.2: Develop and implement a Grazing Plan for the project site. | Class II |

## C.3.3.3 Revised Solar Project Impacts

Three agriculture impacts are addressed in this section; cumulative impacts are evaluated in Section C.3.3.6.

***Impact AG-1: Project would convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared by the Department of Conservation's (DOC's) Farmland Mapping and Monitoring Program (FMMP), to non-agricultural use (Class II)***

Because the footprint of the Revised Project is smaller than the project as evaluated in the 2010 Final EIR, impacts related to conversion of agricultural land would be reduced.

The project site is zoned as Agricultural Rangeland and is still used for grazing. The Revised Project would result in permanent impacts to 2,506 acres of FMMP designated Grazing Land. As with the Approved Project, the Revised Project would lead to a loss of grazing land and open space resources, and encroachment of development into a rural agricultural setting, but it would not convert any Farmland (as defined by the DOC FMMP [e.g. Prime Farmland, Unique Farmland, or Farmland of Statewide Importance]) to non-agricultural use. As shown in Tables C.3-1, C.3-2, and C.3-3 and like the Approved Project, the Revised Project would convert prime agricultural soils to non-agricultural use, but to a lesser extent based on the smaller project footprint. The Revised Project would permanently impact 2,163.8 acres of Prime Farmland (based on NRCS Farmland Classification) and 2,430.4 acres of Grade One (Excellent) soils according to the Storie Index.

As described in APM AG-1, and like the Approved Project, the Revised Project would include sheep grazing on the project site. Sheep grazing would occur during operation of the Revised Project during years when there is enough forage on the site to support grazing. Ongoing grazing will be similar to the levels anticipated in the 2010 Final EIR. The number of sheep required to appropriately graze the feed produced on the project site would vary seasonally depending on the rainfall and temperature of each grazing season. During normal rainfall years, anywhere from 1 to 3 bands of sheep (with each band consisting of between 750 and 1,200 adult sheep and offspring, depending on the season) would graze the project site during the winter and spring months (January to May) to use the amount of forage produced prior to and during that season.

The Revised Project would also implement the other adopted mitigation measures that were described in the 2010 Final EIR and summarized in Table C.3-5.

As the 2010 Final EIR explained, the conservation easement(s) would be managed primarily for the preservation of biological resources; and would allow for the continuation of grazing as appropriate. The Applicant would develop an adaptive grazing management plan for the site(s) that facilitates the preservation of both biological resources and the appropriate level of grazing (as part of Mitigation Measure BR-1.2). Although the agricultural use of these biological mitigation lands could be reduced over time as required for the protection of protected species, the presence of permanent conservation easements would ensure that the open space value and rural character of these mitigation lands is protected.

With the implementation of these APMs and mitigation measures, the impacts of the Revised Project on conversion of agricultural land would be slightly less than the Approved Project based on the reduced development footprint and would remain less than significant (Class II).

***Impact AG-2: Project would conflict with Williamson Act contracts, existing zoning for agricultural use, or objectives in the County General Plan's Agriculture and Conservation and Open Space Elements (Class II)***

Before the publication of the 2010 Final EIR, nearly the entire project site was enrolled in Williamson Act contracts; however, all of these contracts were subsequently approved for cancellation in 2010 on the grounds that the project is incompatible with the Williamson Act and is in the public interest. In all, 12

Williamson Act contracts were fully or partially approved for cancellation; totaling 6,953 acres of contracts (County Assessor's Office, 2010).

The project site is currently zoned as "Agricultural Rangeland" under the San Benito County Zoning Ordinance (County, 2008). San Benito's Zoning Ordinance prohibits most forms of industrial activities in agricultural zones. However, Section 25.07.005 (BB) of the ordinance allows for the uses stated in 25.29.106 as a conditional use in Agricultural Rangeland districts, which includes "public utility facility" as a possible permitted use if these facilities are deemed essential or desirable for the public welfare. Several goals and policies in the Land Use and Conservation Elements of the County's General Plan address preservation of agricultural soils, open space, and rural identity. Specific San Benito County policies are discussed in the 2010 Final EIR.

The Revised Project would not conflict with the Williamson Act since all of the Williamson Act contracts on the project site were approved for cancellation in 2010. The Revised Project would affect the rural character of the Panoche Valley and would convert Prime agricultural soils to non-agricultural use. Because of the smaller footprint of the Revised Project, these impacts would be less than those of the Approved Project.

As with the Approved Project, impacts would be reduced by adopted mitigation measures that were described in the 2010 Final EIR and summarized in Table C. 3-5. With the implementation of these measures, conflicts with existing zoning for agricultural use and objectives in the County of San Benito General Plan's Agriculture and Conservation and Open Space Elements would be less than significant (Class II).

***Impact AG-3: Construction and operation of project would impair agricultural use of nearby properties (Class II)***

As described in the 2010 Final EIR, there are active agricultural operations near the project boundary. These are predominantly grazing operations, in addition to some orchards, vineyards, and field crops near the southeast portion of the project site. The Revised Project would be approximately 4,770 feet northwest of farmland designated as Prime Farmland and approximately 5,700 feet northwest of farmland designated as Unique Farmland. The project boundary is more than 5 miles east of Farmland of Local Importance.

The 2010 Final EIR identified and analyzed the following potential project impacts on surrounding agricultural land:

- Grading, construction, vehicle operation would create fugitive dust, which could interfere with agricultural operations adjacent to the project site by impacting the biological functions of row crops and annual grassland species used for livestock forage.
- Vehicle operation, grading, and other construction activities could increase erosion and stormwater runoff.
- Construction activities could introduce or increase the populations of invasive weed species that would interfere with nearby field crops, vineyards, and orchards.
- Project construction and operation could restrict the habitat of native predators and lead to increased predation of livestock on nearby farms and ranches.
- Project construction and operation could displace local herbivores and lead to increased damage to nearby croplands from agricultural pests.

- Construction and operational activities could contaminate water resources with hazardous materials, which could run off onto adjacent agricultural land.
- Construction and operational activities would slightly reduce the availability of groundwater for nearby agricultural operations.

Because of its smaller footprint and a 3.5-year reduction in the project construction schedule, the Revised Project would be less disruptive on adjacent agricultural operations over the long term. However, because of the shorter construction period for the Revised Project, the aforementioned construction-phase impacts on surrounding agricultural operations would be greater during the approximately 18 months of construction activities.

In addition and while daily groundwater demand for the Revised Project would be greater during the 18-month construction period, the Revised Project, once operational, would use substantially less water over the 30-year life of the project. Once operational the Revised Project would use approximately 2.84 acre-feet of water per year for operations (assuming that the average number of full time workers is 15 per day) compared to 25.5 acre-feet for the Approved Project.

The Revised Project would implement the same mitigation measures and APMs as the Approved Project to reduce impacts to nearby agricultural properties. These measures are described in the 2010 Final EIR and summarized in Table C.3-5.

The Applicant would also follow Best Management Practices (BMPs) for reducing erosion and sedimentation per the project's required Stormwater Pollution Prevention Plan, which would reduce impacts from potential stormwater runoff. With the implementation of these APMs and mitigation measures, the impacts of the Revised Project on the agricultural use of nearby properties would be less than significant (Class II).

## C.3.3.4 Changes to Adopted Mitigation Measures

There have been no changes to the agriculture mitigation measure that was adopted in 2010. The Applicant has proposed a change to one of the Applicant Proposed Measures, which is shown below. Deleted text is shown in strikethrough, added text is shown in underline. Mitigation Measures and APMs not shown in this section have not changed and are presented for reference only in Appendix 3.

**APM AG-1** **Grazing sheep on the project site.** ~~Sheep~~ <u>If necessary for vegetation control, sheep</u> would be grazed throughout the project site, except on the 50-65 acres where new roads ~~and~~, buildings~~. Solar panels~~<u>, switchyard/substation are constructed or where safety concerns</u> would ~~be raised 2 feet off the ground, which would allow sheep to graze underneath~~ <u>prevent grazing</u>. The grazing operation would be a rotational system using short-duration intensive grazing alternating with periods of rest. The project site would be divided into ~~nine~~ pastures, which ~~would~~ <u>could</u> provide forage for between 750 and 3,600 adult sheep depending on annual rainfall and temperatures. The project site would be grazed between January and May. The Applicant would construct new sheep fencing as necessary. Each pasture would have access to water from existing livestock watering facilities.

## C.3.3.5 PG&E Upgrades Impacts

The temporary and permanent agriculture impacts of the PG&E Upgrades are analyzed in this section. This analysis is based on the impact statements defined for the solar project, but only the impacts that

apply to the PG&E Upgrades are evaluated. Three agriculture impacts are addressed in this section; cumulative impacts are evaluated in Section C.8.3.6.

***Impact AG-1: Project would convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared by the Department of Conservation's (DOC's) Farmland Mapping and Monitoring Program (FMMP), to non-agricultural use (Class III)***

The PG&E Upgrades would be located on Farmland in San Benito and Fresno Counties, including Grazing Land managed by BLM. The majority of the PG&E related work will include overhead installation of OPGW on existing towers. However, existing 230 kV transmission line crosses under two existing 500 kV transmission lines about 1.5 miles west of the I-5 crossing. At this location, an approximately 4,650-foot section will require the installation of approximately nine permanent wood poles (on a total of 10 square feet) within the existing ROW and on land currently used for agricultural purposes. Installation of these poles would permanently impact approximately 6.66 square feet of Prime Farmland and 3.33 square feet of Grazing Land. Table C.3-1 shows the FMMP designations for the PG&E ROW. Figure C.3-3 depicts the FMMP designations for the PG&E permanent impact areas. Other permanent impacts associated with PG&E telecommunications upgrades, with the exception of the microwave site being installed in the PVS footprint, includes the microwave site at Helm Substation as depicted on Figure C.3-4. As stated above, the site of the Helms Substation microwave tower site is designated as Urban and Built-Up Land by the FMMP, which would not be considered an impact to farmland. In addition to the telecommunications upgrades described above, PG&E would also construct up to twelve new tubular steel poles (TSPs) to tie the existing transmission line into the new PG&E switchyard located within the Revised Project boundaries. These TSPs would be located within the Revised Project site boundaries.

Temporary work areas associated with the PG&E Upgrades are included in the Project Description, Table B-10. Because temporary impacts would not represent conversion of Farmland, this analysis pertains to the area where permanent impacts are anticipated (i.e., locations of new wood poles).

East of the Panoche Valley and west of I-5, the PG&E Moss Landing–Panoche 230 kV transmission line traverses about 6 miles of BLM administered land in the Panoche Hills designated for Grazing Land. The line is located south of the Panoche Hills South Wilderness Study Area. Pull sites are anticipated to be needed within the BLM section of PG&E's ROW. On BLM lands, the OPGW would be installed on existing structures using existing access roads or helicopters. The following PG&E telecommunications upgrades elements would be located on BLM lands:

- 4 temporary wire stringing/pulling sites (75' x 75');
- 2 temporary guard structures (75' x 75'); and,
- A microwave tower temporary work area at Panoche Mountain (100' x 100').

This Panoche Mountain microwave tower site is located on lands managed by the BLM. However, the microwave tower would be collocated on existing American Tower Company (ATC) equipment or constructed entirely within the fenceline of a California Highway Patrol (CHP) station, on which CHP holds a ROW grant until 2040. There would be a 0.23-acre permanent impact to BLM designated Grazing Lands due to construction of the microwave tower; however, because the tower will be located within an existing CHP station, this impact is considered less than significant.

Because permanent conversion of FMMP designated Farmlands would be very limited (10 square feet total, 6.66 square feet of impact to Prime Farmlands), this impact would be less than significant (Class III).

***Impact AG-2: Project would conflict with Williamson Act contracts, existing zoning for agricultural use, or objectives in the County General Plan's Agriculture and Conservation and Open Space Elements (Class III)***

PG&E Upgrades would occur on lands enrolled in the Williamson Act in both San Benito and Fresno Counties. The upgraded portion of PG&E's ROW passes through approximately 5 miles of Williamson Act lands in San Benito County and approximately 4.4 miles of Williamson Act land in Fresno County. However, transmission lines are generally considered compatible with Williamson Act enrollment and the PG&E Upgrades would take place within existing utility corridors. Microwave tower installations would be located in areas where existing substations or other similar electrical telecommunications infrastructure exists. All of the land where PG&E Upgrades would take place is designated as Agricultural by San Benito and Fresno Counties. However, because impacts would take place within areas with existing utility infrastructure and because permanent impacts on FMMP-designated Farmland would be less than 10 square feet, this impact would be less than significant (Class III).

***Impact AG-3: Construction and operation of project would impair agricultural use of nearby properties (Class III)***

PG&E Upgrades would occur along 17 miles of transmission line and at several microwave tower sites in agricultural areas San Benito and Fresno Counties. Although permanent impacts would be small and upgrade work would use only existing access roads through agricultural lands, there could be a range of temporary impacts on adjacent agricultural operations during construction. PG&E's construction activities would last between 12 and 16 weeks, with construction at any one location lasting 2 to 3 weeks. Potential temporary impacts would include:

- Grading, construction, vehicle operation would create fugitive dust, which could interfere with agricultural operations adjacent to the PG&E upgrade sites by impacting the biological functions of row crops and annual grassland species used for livestock forage.
- Vehicle operation and other construction activities could increase erosion and stormwater runoff.
- Construction activities could introduce or increase the populations of invasive weed species that would interfere with nearby field crops, vineyards, and orchards.
- Accidental spills related to construction activities could contaminate water resources with hazardous materials, which could run off onto adjacent agricultural land.

The PG&E Upgrades could affect nearby agricultural properties. This risk would be reduced by AMMs that minimize fugitive dust, reduce the spread of noxious weeds, and establish a prevention and response plan for accidental spills of hazardous materials. These measures would be implemented as part of the proposed PG&E Upgrades. The full text of these AMMs is presented in Table B-12 (Section B.11).

In addition, state law requires that PG&E shall create and implement a Hazardous Materials Business Plan. PG&E would also follow its standard BMPs for reducing erosion and sedimentation per the project's required Stormwater Pollution Prevention Plan, which would reduce impacts from potential stormwater runoff. With the implementation of these AMMs, the impacts of the PG&E Upgrades on the agricultural use of nearby properties would be less than significant (Class III).

### C.3.3.6 Cumulative Impacts

The projects that have been constructed or proposed in the area of potential cumulative effects have changed since 2010, as described in Section D. The cumulative impacts of the Revised Project would be reduced compared with the Approved Project. The same mitigation measures would apply as described in the 2010 Final EIR. With implementation of Mitigation Measures AG-2.1 (Create agricultural conservation easements), BR-1.2 (Develop and implement a Grazing Plan for the project site), BR-G.3 (Develop and implement a Habitat Restoration and Revegetation Plan), BR-G.5 (Create permanent conservation easements as compensation for impacts to biological resources), and BR-G.6 (Develop and implement Habitat Mitigation and Monitoring Plan for mitigation land), this impact would remain less than significant (Class II). Impacts on agricultural resources from PG&E Upgrades would be minimal. PG&E Upgrades would not significantly contribute to cumulatively considerable agricultural impacts (Class III). Other projects in the area of potential cumulative effects generally would implement mitigation measures similar to those described for the Revised Project. With implementation of mitigation and AMMs, overall cumulative agriculture impacts would be less than significant (Class II).

## C.3.4 Summary of Impacts

The significance of impacts for agriculture for the Revised Project and for the PG&E Upgrades is summarized in Sections C.3.4.1 and C.3.4.2. Section C.3.4.3 summarizes the impacts of all project components.

### C.3.4.1 Revised Solar Project

There are no changes to the significance of impacts from the conclusions of the 2010 Final EIR. Impact AG-1 (Conversion of Farmland) would be Class II; Impact AG-2 (Conflicts with Williamson Act and zoning) would be Class II; Impact AG-3 (Impairment of nearby properties) would be Class II.

### C.3.4.2 PG&E Upgrades

Impact AG-1 (Conversion of Farmland) would be Class III; Impact AG-2 (Conflicts with Williamson Act and zoning) would be Class III; Impact AG-3 (Impairment of nearby properties) would be Class III.

### C.3.4.3 Overall Significance of Impacts

There are no significant impacts to agriculture 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 agriculture impacts related to the PG&E Upgrades would be less than significant (Class III).

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

## C.3.5 References

BLM (Bureau of Land Management). 1999. Central California Standards for Rangeland Health. http://www.blm.gov/style/medialib//blm/ca/pdf/pdfs/caso_pdfs.Par.84e7fdd8.File.pdf/Central-Grazing.pdf

CDFA (California Department of Food and Agriculture). 2013. California Agricultural Statistics Review. http://www.cdfa.ca.gov/statistics/

DOC (California Department of Conservation, Division of Land Resource Protection). 2014a. Farmland Mapping and Monitoring Program, GIS Data Download Site. [online]: http://www.conservation.ca.gov/dlrp/fmmp

_____. 2014b. Williamson Act GIS data for Fresno County. November, 2014.

_____. 2013. The Land Conservation Act 2012 Status Report. October 2013. http://www.consrv.ca.gov/dlrp/lca/stats_reports/Documents/2012%20WA%20Status%20Report.pdf. Accessed December 2014.

Environmental Assessment Specialists. 2010. Phase One Environmental Site Assessment of Panoche Valley Solar Farm. Vicinity of Little Panoche Road and Panoche Road, San Benito County, California. August 31.

Fresno County. 2014. 2000 General Plan Review, General Plan Policy Document http://www.co.fresno.ca.us/ViewDocument.aspx?id=60071. Accessed December 2014.

_____. 2012. 2012 Fresno County Annual Crop and Livestock Report. http://www.fcfb.org/PDF-Files/Fresno%20Ag/2012%20Crop%20Report.pdf. Accessed December 2014.

McCormick, Robin. 2014. Personal communication with Jennifer Kaminisky of Burns & McDonnell. December 15.

NRCS (Natural Resources Conservation Service, U.S. Department of Agriculture). 2014. Web Soil Survey. http://websoilsurvey.nrcs.usda.gov/. Accessed December 2014.

San Benito County. 2014. Williamson Act GIS data for San Benito County. November, 2014.

_____. 2010. San Benito County General Plan: Background Report. Public Review Draft. March.

_____. 2008. San Benito County Zoning. http://www.san-benito.ca.us/departments/planning/zoning.htm. Accessed May 3, 2010.

Williams, Kim. 2010. Personal communication with Amy Morris of Aspen Environmental Group. April 20 and 21.

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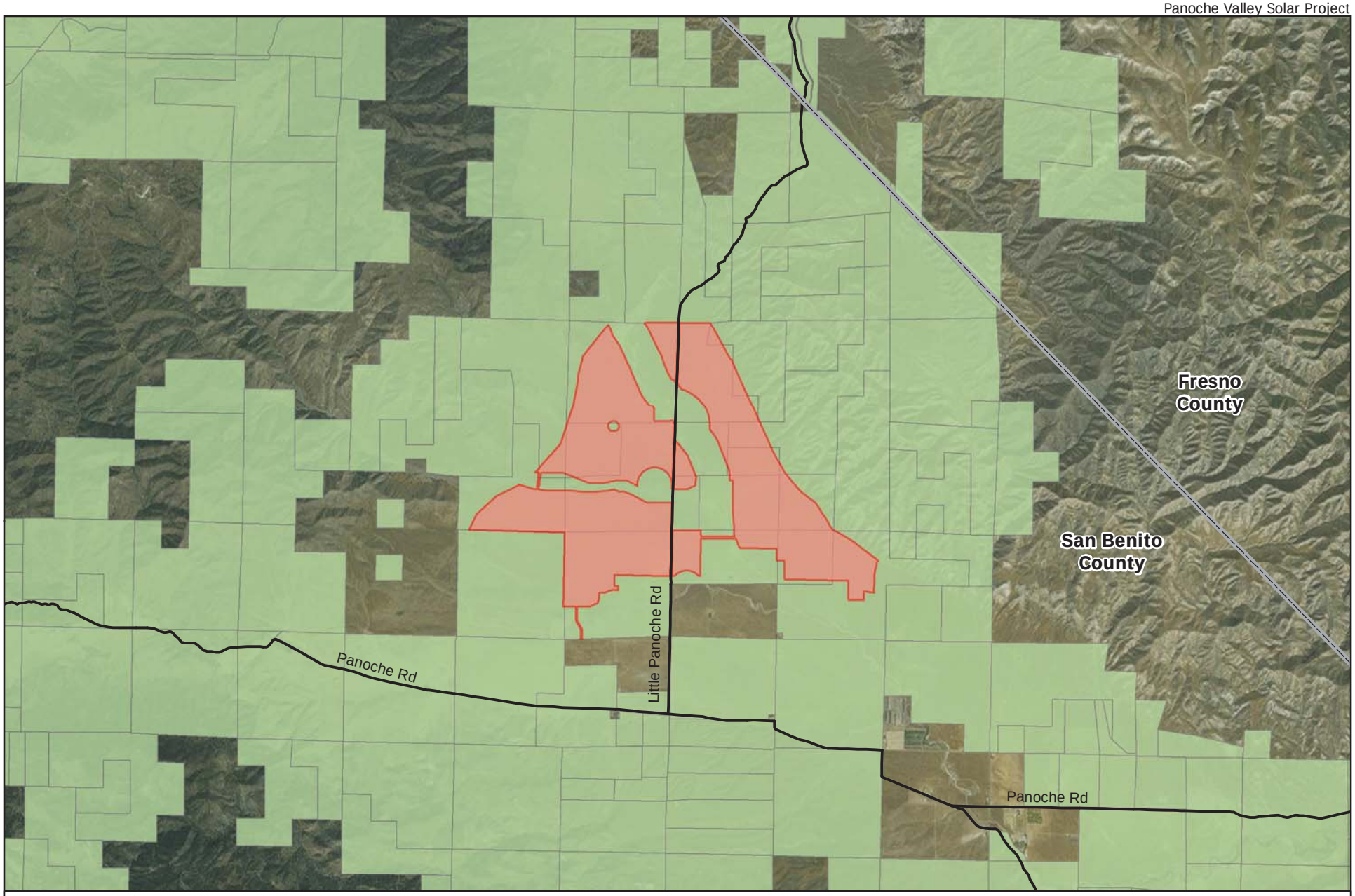



Aspen Environmental Group

N

0 0.75 1.5 3 Miles

Source: PVS LLC, DOC, San Benito County, ESRI

Local Road

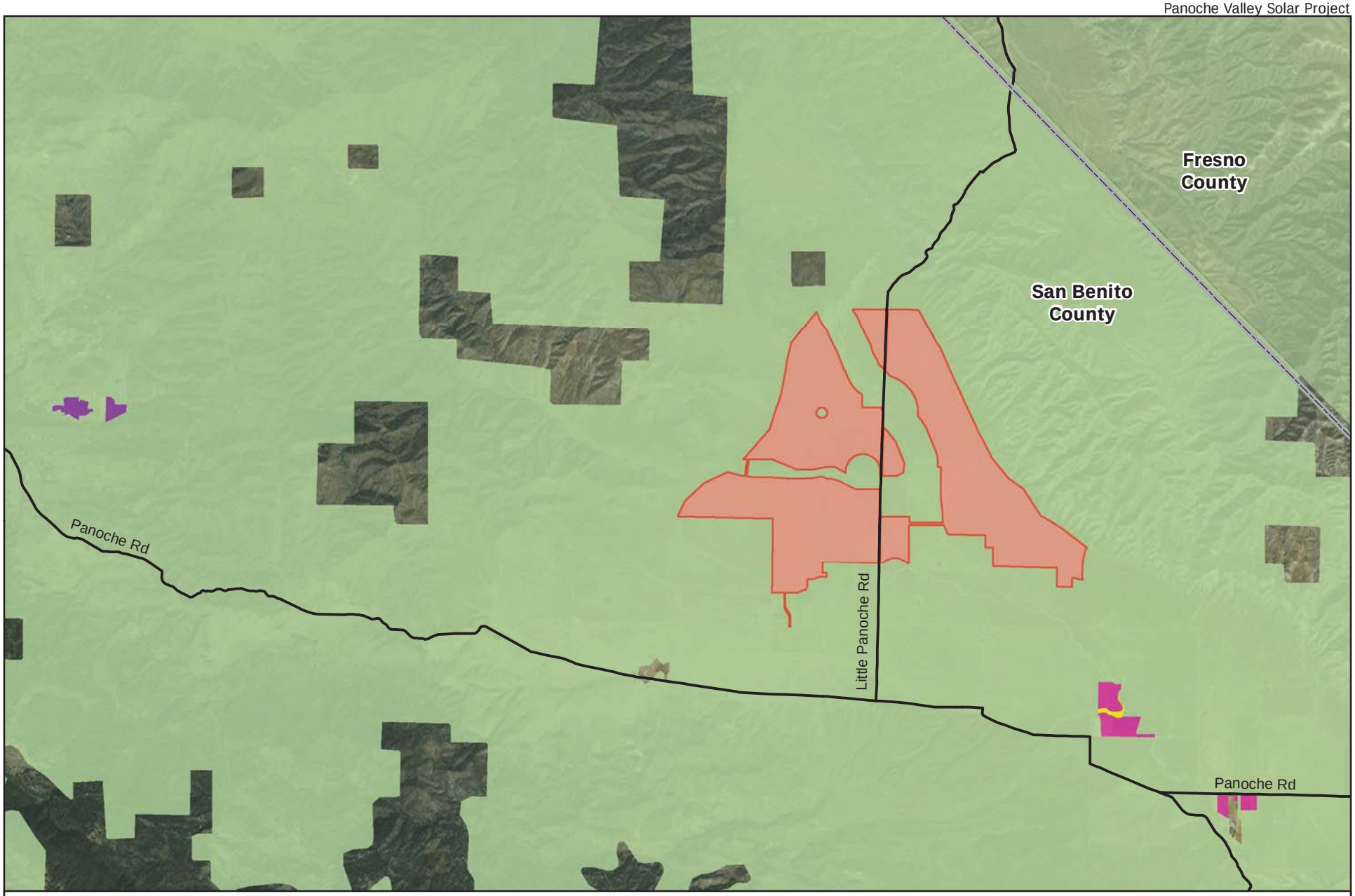
County Boundary

Revised Project Area

Williamson Act Land

Figure C.3-1

Williamson Act Land
Near Revised Project




Aspen Environmental Group

N

0 0.75 1.5 3 Miles

Source: PVS LLC, DOC, ESRI

Local Road
County Boundary
Revised Project Area

**FMMP Designations**
Grazing Land
Farmland of Local Importance
Prime Farmland
Unique Farmland

Figure C.3-2

FMMP Designations
Near Revised Project

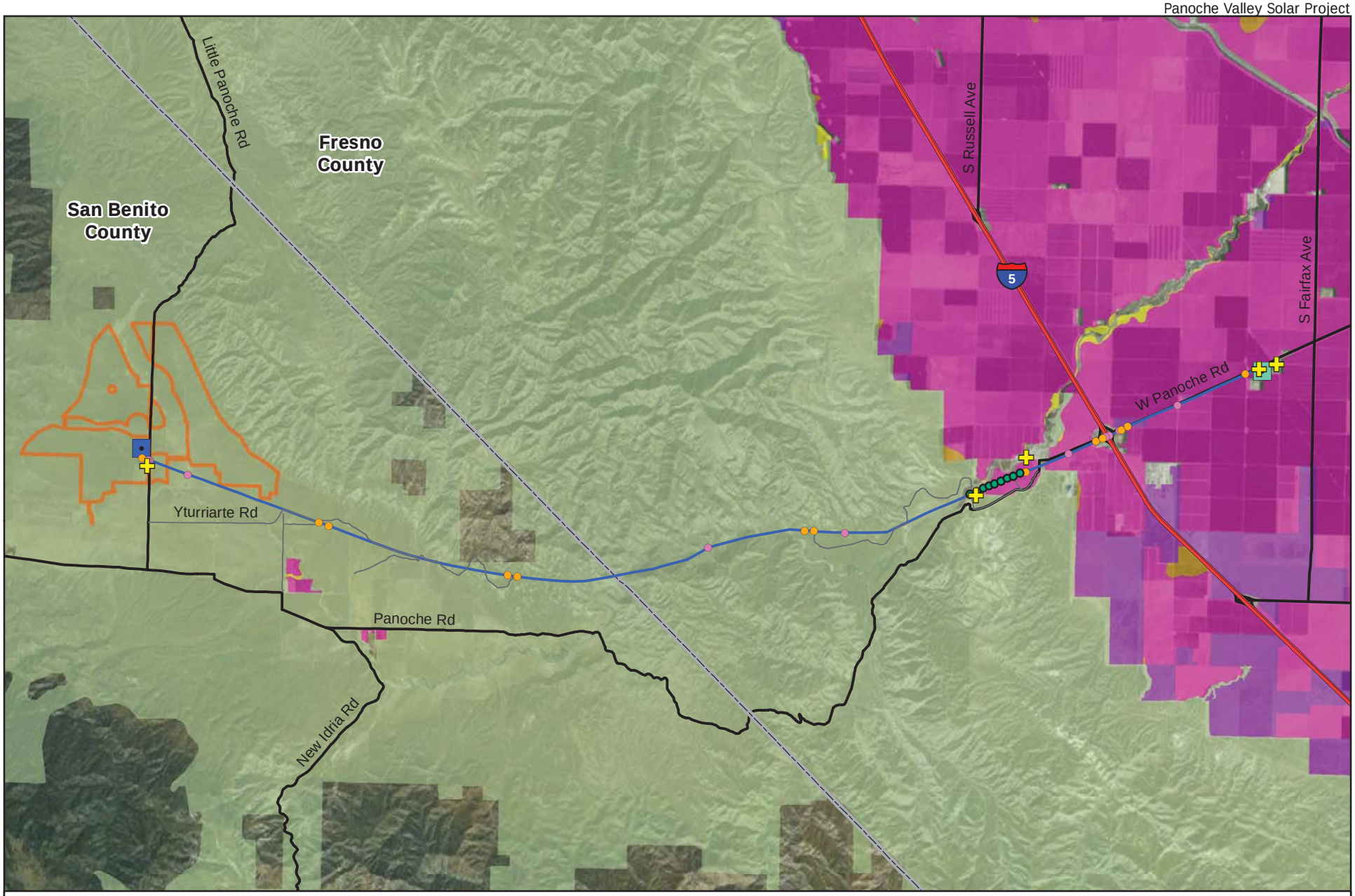



Figure C.3-3

FMMP Designations Near PG&E Upgrades

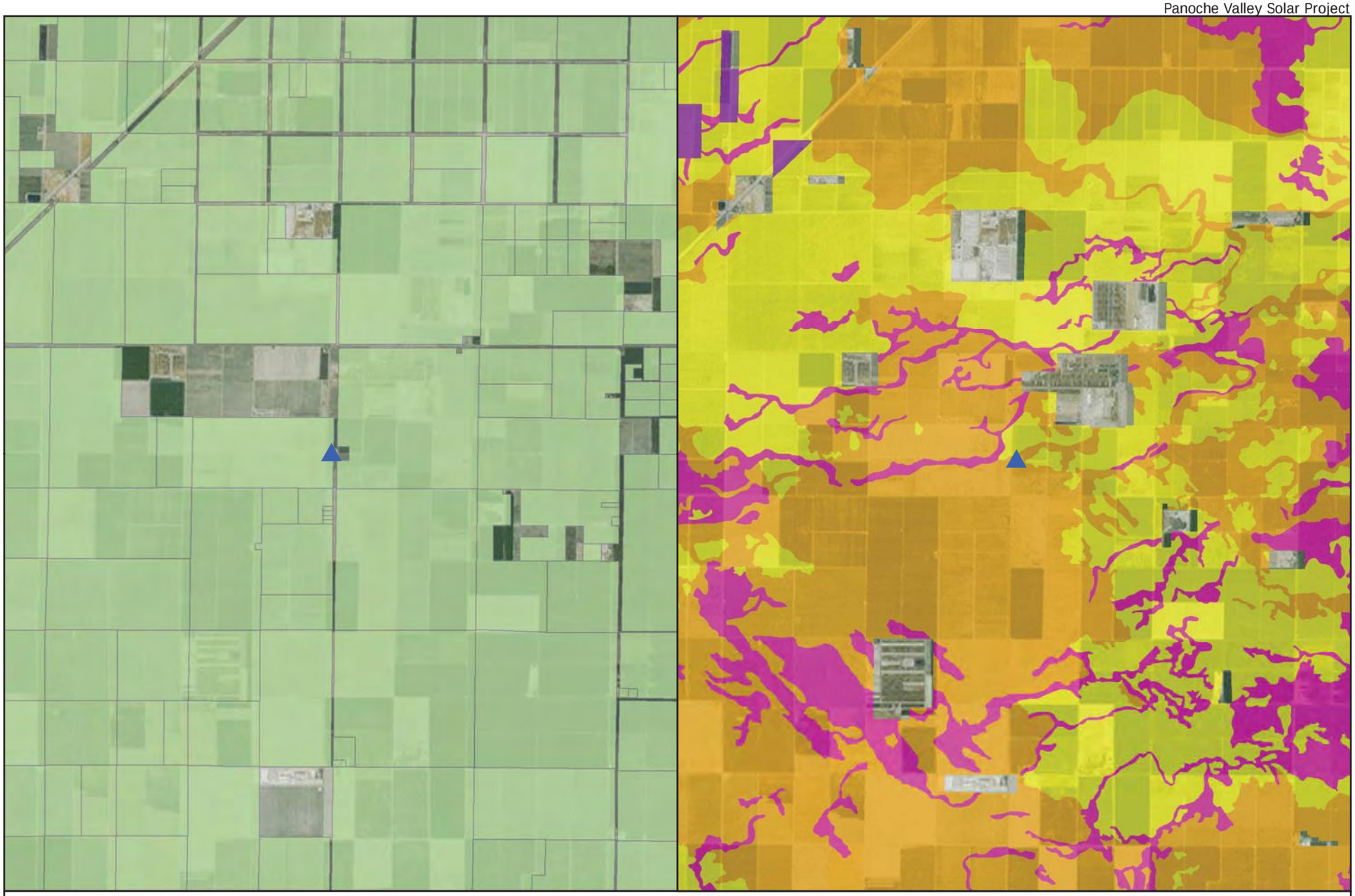



Figure C.3-4

Helm Microwave Tower
Agricultural Land

# C.4 Air Quality

This section analyzes whether the Revised Project and PGE Upgrades result in any new significant air quality impacts that were not previously identified and disclosed in the 2010 Final EIR or a substantial increase in the severity of any previsouly identified Air Quality impacts. As part of this analysis, the section considers changes to the existing ambient air quality in the study area, changes to the emissions of the Approved Project, and changes to potential air quality impacts and mitigation measures.

An updated Air Quality Technical Report, prepared by the Applicant's consultant (AMEC, 2014) was used to evaluate the Revised Project.

## C.4.1 Environmental Setting

This section describes changes to the environmental setting that have occurred since 2010. Section C.4.1.1 describes any changes to the environmental setting that was presented in the 2010 Final EIR. Section C.4.1.2 describes the environmental setting for the area surrounding the PG&E transmission system upgrades.

The United States Environmental Protection Agency (U.S. EPA), California Air Resources Board (CARB), and the local air districts classify an area as attainment, unclassified, or nonattainment depending on whether or not the monitored ambient air quality data show compliance, insufficient data available, or non-compliance with the ambient air quality standards, respectively. The National and California Ambient Air Quality Standards (NAAQS and CAAQS, respectively) relevant to the Revised Project are provided in Table C.4-1.

**Table C.4-1. National and California Ambient Air Quality Standards**

| Pollutant | Averaging Time | California Standards | National Standards |
|---|---|---|---|
| Ozone ($O_3$) | 1-hour | 0.09 ppm | — |
| | 8-hour | 0.070 ppm | 0.075 ppm |
| Respirable particulate matter (PM10) | 24-hour | 50 µg/m$^3$ | 150 µg/m$^3$ |
| | Annual mean | 20 µg/m$^3$ | — |
| Fine particulate matter (PM2.5) | 24-hour | — | 35 µg/m$^3$ |
| | Annual mean | 12 µg/m$^3$ | 12 µg/m$^3$ |
| Carbon monoxide (CO) | 1-hour | 20 ppm | 35 ppm |
| | 8-hour | 9.0 ppm | 9.0 ppm |
| Nitrogen dioxide ($NO_2$) | 1-hour | 0.18 ppm | 100 ppb |
| | Annual mean | 0.030 ppm | 0.053 ppm |
| Sulfur dioxide ($SO_2$) | 1-hour | 0.25 ppm | 75 ppb |
| | 24-hour | 0.04 ppm | 0.14 ppm |
| | Annual mean | — | 0.030 ppm |

ppm = parts per million; ppb= parts per billion
µg/m$^3$ = micrograms per cubic meter
— = no standard
Source: CARB, 2013.

### C.4.1.1 Revised Solar Project

The air quality environmental setting for the Revised Project site has remained substantially unchanged since approval of the Final EIR. Panoche Valley remains generally undeveloped and pastoral in character. No new development has occurred, and no major new structures have been built in the valley. Grazing remains the primary land use in the area.

The North Central Coast Air Basin remains designated as nonattainment with respect to the ozone and PM10 CAAQS, and the North Central Coast Air Basin is designated as being in attainment or as unclassified for all other pollutants. Since 2012, the North Central Coast Air Basin has been in attainment for all pollutants with respect to the NAAQS.

Table C.4-2 summarizes the current federal and State attainment status of criteria pollutants for the region as provided by Monterey Bay Unified Air Pollution Control District (APCD), based on the NAAQS and CAAQS, respectively.

**Table C.4-2. Attainment Status for the North Central Coast Air Basin**

| Pollutant | Attainment Status Federal | Attainment Status State |
|---|---|---|
| Ozone | Attainment/Unclassified | Nonattainment |
| PM10 | Attainment | Nonattainment |
| PM2.5 | Attainment/Unclassified | Attainment |
| CO | Attainment/Unclassified | Unclassified |
| $NO_2$ | Attainment/Unclassified | Attainment |
| $SO_2$ | Attainment | Attainment |

Source: Monterey Bay Unified APCD, 2013.

### C.4.1.2 PG&E Upgrades

The portions of the PG&E Upgrades that would occur within Fresno County and the San Joaquin Valley Air Basin, which is under the jurisdiction of the San Joaquin Valley Air Pollution Control District (SJVAPCD). Table C.4-3 summarizes the federal and State attainment status of criteria pollutants for the region as provided by SJVAPCD, based on the NAAQS and CAAQS, respectively.

**Table C.4-3. Attainment Status for the San Joaquin Valley Air Basin**

| Pollutant | Attainment Status Federal | Attainment Status State |
|---|---|---|
| Ozone | Nonattainment (Extreme) | Nonattainment |
| PM10 | Attainment | Nonattainment |
| PM2.5 | Nonattainment | Nonattainment |
| CO | Attainment/Unclassified | Attainment/Unclassified |
| $NO_2$ | Attainment/Unclassified | Attainment |
| $SO_2$ | Attainment/Unclassified | Attainment |

Source: SJVAPCD, 2014.

## C.4.2 Applicable Regulations, Plans, and Standards

The applicable regulations, plans, and standards that apply to the assessment of air quality impacts of that portion of the Revised Project within San Benito County are presented in Section C.4.2 of the Final

EIR. Since 2010, the Monterey Bay Unified APCD adopted on April 17, 2013 a new Triennial Plan Revision (2009-2011) for the region's Air Quality Management Plan that builds on past plans and continues to focus on achieving attainment of the State ozone standard. Regulatory changes by the Monterey Bay Unified APCD since 2010 do not substantially alter the regulatory setting for air quality within San Benito County.

However, as noted above, the Revised Project also includes the PG&E Upgrades that affect land within Fresno County that is under the jurisdiction of the SJVAPCD, which is the agency responsible for monitoring and regulating air pollutant emissions from stationary, area, and indirect sources within Fresno County and throughout the San Joaquin Valley Air Basin. Like the MBUPCD, the SJVAPCD has adopted regulations to implement air quality plans for ozone, PM10, and PM25.

**Regulation VIII – Fugitive PM10 Prohibitions.** Regulation VIII is comprised of District Rules 8011 through 8081, which are designed to reduce PM10 emissions (predominantly dust/dirt) generated by human activity, including construction and demolition activities, road construction, bulk materials storage, paved and unpaved roads, carryout and track out, landfill operations, etc.

**Rule 8021 – Construction, Demolition, Excavation, and Other Earthmoving Activities.** District Rule 8021 requires owners or operators of construction projects to submit a Dust Control Plan to the District if at any time the project involves non-residential developments of five or more acres of disturbed surface area or moving, depositing, or relocating of more than 2,500 cubic yards per day of bulk materials on at least three days of the project. The proposed project will meet these criteria and will be required to submit a Dust Control Plan to the District in order to comply with this rule.

**Rule 4641 – Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations.** If asphalt paving will be used, then paving operations of the proposed project will be subject to Rule 4641. This rule applies to the manufacture and use of cutback asphalt, slow cure asphalt and emulsified asphalt for paving and maintenance operations.

**Rule 9510 – Indirect Source Review (ISR).** District Rule 9510 is designed for the purposes of reducing emissions of NOx and PM10 from new development projects. In general, new development contributes to the air-pollution problem in the Valley by increasing the number of vehicles and vehicle miles traveled. In 2005, on-road vehicles generated approximately 200 tons per day of NOx and direct PM10 pollution in the Valley. The ISR rule will apply to future development along the Golden State Boulevard corridor.

## C.4.3 Environmental Impacts and Mitigation Measures

This section addresses whether the changes to the Approved Project would result in a new significant agricultural impacts or increase the severity of previously identified agricultural impacts. Section C.4.3.1 restates the significance criteria used in 2010 to determine whether any project changes result in any new or more severe significant impacts. Section C.4.3.2 summarizes the impacts and mitigation measures presented in the 2010 Final EIR for ease of reference. Section C.4.3.3 presents the updated impact analysis for the Revised Project, and Section C.4.3.4 addresses changes to two adopted mitigation measures and two APMs. Section C.4.3.5 addresses the environmental impacts that would occur as a result of the PG&E Upgrades, and Section C.4.3.6 describes cumulative impacts.

## C.4.3.1 Significance Criteria

### Monterey Bay Unified APCD

The following significance criteria for air quality were derived from the Monterey Bay Unified APCD's *2008 CEQA Air Quality Guidelines* (APCD, 2008).

**Significance Criteria for Construction-Related Emissions.** Short-term construction emission thresholds, as stated in the Monterey Bay Unified APCD's *2008 CEQA Air Quality Guidelines* (APCD, 2008), involve identifying the level of construction activity that could result in significant temporary impacts if not mitigated. Construction activities (e.g., excavation, grading, on-site vehicles) that directly exceed the APCD criterion for PM10 would have a significant impact on local air quality when they are located nearby and upwind of sensitive receptors (APCD, 2008). Regarding ozone, construction projects using typical construction equipment that temporarily emit ozone precursors are accommodated in the emission inventories of State and federally required air quality management plans and would not have a significant impact on ozone concentrations (APCD, 2008).

If construction-related activities exceed the PM10 threshold of 82 pounds (Table C.4-4), the project would be characterized as contributing substantially to existing violations of the State-level ambient air quality standards for PM10.

**Table C.4-4. Significance Thresholds for Construction Emissions**

| Pollutant of Concern | Threshold |
|---|---|
| Fugitive Particulate Matter ($PM_{10}$) | 82 lbs |

Source: Monterey Bay Unified APCD, 2008.

The APCD also offers the following as examples of the level of construction activity that could exceed threshold in Table C.4-4:

- Construction site with minimal earthmoving exceeding 8.1 acres per day.
- Construction site with earthmoving (grading, excavation) exceeding 2.2 acres per day.

**Significance Criteria for Operational Emissions.** The threshold criteria established by the Monterey Bay Unified APCD's *2008 CEQA Air Quality Guidelines* to determine the significance and appropriate mitigation level for long-term operational emissions from a project are presented in Table C.4-5.

**Table C.4-5. Significance Thresholds for Operational Emissions**

| Pollutant of Concern | Daily Threshold |
|---|---|
| Ozone Precursors (NOx as $NO_2$) | 137 lbs/day (direct + indirect) |
| Fugitive Particulate Matter (PM10), Dust | 82 lbs/day (on-site)[1] |
| | AAQS exceeded along unpaved roads (off-site) |
| Carbon Monoxide (CO) | LOS at intersection/road segment degrades from D or better to E or F or V/C ratio at intersection/road segment at LOS E or F increases by 0.05 or more or delay at intersection at LOS E or F increases by 10 seconds or more or reserve capacity at unsignalized intersection at LOS E or F decreases by 50 or more[2] |
| | 550 lbs/day (direct)[2] |

**Table C.4-5. Significance Thresholds for Operational Emissions**

| Pollutant of Concern | Daily Threshold |
|---|---|
| SOx as $SO_2$ | 150 lbs/day (direct) |

1 - The District's 82 lb/day operational phase threshold of significance applies only to on-site emissions and project-related exceedances along unpaved roads. These impacts are generally less than significant. On large development projects, almost all travel is on paved roads (0%) unpaved), and entrained road dust from vehicular travel can exceed the significance threshold. District approved dispersion modeling can be used to refute (or validate) a determination of significance if modeling shows that emissions would not cause or substantially contribute to an exceedance of State and national AAQS;
2 - Modeling should be undertaken to determine if the project would cause or substantially contribute (550 lb/day) to exceedance of CO AAQS. If not, the project would not have a significant impact;
Source: Monterey Bay Unified APCD, 2008.

In addition to the tabulated thresholds, a project may also have significant adverse impacts on air quality if the project individually or cumulatively results in any of the following:

- Exceedance of a State or federal ambient air quality standard for any criteria pollutant (as determined by modeling).
- Exposure of sensitive receptors to substantial pollutant concentrations of toxic air contaminants.
- Exposure of a substantial number of people to objectionable odors.
- Inconsistency with applicable Monterey Bay Unified APCD air quality management plans, polices, or regulations.

The criteria for assessing cumulative impacts on localized air quality (i.e., carbon monoxide, PM10) are identical to those for individual project operation (Table C.4-5). The criteria for determine a project's cumulative impact on regional ozone levels depends on consistency with the applicable air quality management plan. Consistency with the AQMP does not mean that a project will not have a significant project-specific adverse air quality impact. However, inconsistency with the AQMP is considered a significant cumulative adverse air quality impact. The Association of Monterey Bay Area Governments provides consistency determinations for population-related projects, which the Revised Project is not. As a non-residential project, with little attributable population growth (see Section C.12, Population and Housing), the APCD could make a consistency determination for this project.

### San Joaquin Valley Air Pollution Control District (SJVAPCD)

The SJVAPCD has identified PM10 as the pollutant of greatest concern for construction related emissions. In the Guide for Assessing and Mitigating Air Quality Impacts, the SJVAPCD recommends that construction PM10 impacts be evaluated based on implementation of effective and comprehensive dust control measures rather than detailed quantification (SJVAPCD, 2002b).

SJVAPCD has not established a CEQA significance threshold for PM10 or PM2.5 emissions associated with construction activities. The SJVAPCD has also not established quantitative CEQA thresholds for ozone precursors associated with construction activities. In lieu of CEQA significance thresholds for construction emissions of ozone precursors, projected emissions can be compared to the SJVAPCD's operational CEQA threshold of 10 tons per year for both NOx and Reactive Organic Gases (ROG). Regarding construction emissions of CO and SO2, the SJVAPCD has not developed quantitative thresholds for these pollutants either.

Conclusions regarding the significance of each identified air quality impact are made per the significance classification system provided in Section C.1 (Introduction to Environmental Analysis).

## C.4.3.2 Approved Project Impacts and Mitigation Measures

The Air Quality impacts of the Approved Project were analyzed in Sections C.4 and E.3.1.A of the 2010 Final EIR. Table C.4-6 presents a summary of the impacts and mitigation measures applicable to the Approved Project.

**Table C.4-6. Summary of Impacts and Mitigation: Air Quality**

| Impact No. and Text | Mitigation Required | CEQA Conclusion |
|---|---|---|
| Impact AQ-1: Construction activities would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants. | AQ-1.1: Reduce fugitive dust<br>AQ-1.2: Designate a dust complaint monitor | Class II |
| Impact AQ-2: Operation, maintenance, and inspections would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants. | None | Class III |
| Impact AQ-3: Power generated by operation of the solar power plant would indirectly affect operations and emissions from other power plants. | None | Class IV |
| Impact AQ-4: Project-related emissions may be inconsistent with relevant air quality management plans. | AQ-1.1: Reduce fugitive dust<br>AQ-1.2: Designate a dust complaint monitor | Class II |
| Impact AQ-5: Contribute to cumulatively considerable air quality impacts. | None | Class III |

## C.4.3.3 Revised Solar Project Impacts

As discussed below, overall, the air quality impacts of the Revised Project would be incrementally greater than the Approved Project during the temporary construction period due to the accelerated construction schedule; however, pollutant emmissions would not exceed thresholds identified in Section 3.4.3.1 above and emissions would be either less severe or not substantially different from the conclusions of the Final EIR.

***Impact AQ-1: Construction activities would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants (Class II)***

Like the Approved Project, the Revised Project would emit fugitive dust, reactive organic gases (ROGs), NOx, CO, PM10, PM2.5, SOx, and toxic diesel particulate matter (DPM) during the construction phase that would contribute to regional and localized degradation of air quality. Emissions from construction would result from fuel combustion and exhaust from construction equipment and vehicle traffic, grading, and use of materials that contain volatile and/or toxic compounds (e.g., paints and lubricants).

The Revised Project, while about 78% of the fenced area of the Approved Project, would result in a more intense construction period due to the compressed construction schedule for the Revised Project (approximately 18 months compared to the Approved Project schedule of approximately 5 years). As a result, the Revised Project would have increased daily use of typical construction equipment such as dump trucks, graders, scrapers, bulldozers, compactors, and front end loaders that emit precursors of ozone (ROG and NOx) and fugitive dust-generating activities when compared with the Approved Project. The Revised Project also requires an increase in the amount of daily ground disturbance activities. Although construction of the Revised Project would result in a shorter period during which construction emissions would occur, the compressed construction schedule would result in higher average daily emissions levels; however, as demonstrated in the August 8, 2014 Technical Memorandum including a "CalEEMod Analysis of Potential Particulate Emissions from Construction Activities at the Panoche Valley

Solar Farm Project" the construction emissions would not exceed the significance thresholds with implementation of mitigation measures. The modified Mitigation Measure AQ-1.1 (Reduce fugitive dust) for the Revised Project would allow for an increase in the grading limits from 8.1 to 50 acres per day. The Air Quality Technical Report (AMEC, 2014) prepared for the Revised Project demonstrates that the daily significance threshold for fugistive dust emissions would not be exceeded if the frequency of watering is increased from two times per day to three times per day. Therefore, Mitigation Measure AQ-1.1 has also been revised to require watering three times per day to ensure that daily significance thresholds are not exceeded.

As with the Approved Project, temporary construction-phase VOC and NOx emissions caused by construction of the Revised Project would contribute to existing ozone violations. The contribution would not be considered significant because temporary construction emissions are accommodated in the AQMP inventory of construction emissions that are assumed to occur by the Monterey Bay Unified APCD in demonstrating maintenance of the ozone standards. As such, based on Monterey Bay Unified APCD guidance (Monterey Bay Unified APCD, 2013a), construction-phase ozone precursors would not cause violations of or disrupt the attainment and maintenance of ozone ambient air quality standards.

Like the Approved Project, emissions of other criteria pollutants, including PM10, PM2.5, CO, and $NO_2$ from construction activities would not be expected cause a violation of any ambient air quality standard beyond the project boundary due to the relatively large land area of the Revised Project and the widespread distribution of construction emissions (SCEC, 2010).

Emissions of fugitive dust would be subject to mitigation measures and applicant proposed measures for dust control and activity management. Specific and feasible dust control measures identified in the 2010 Final EIR would remain required to reduce the impact of dust emissions: Mitigation Measure AQ-1.1 includes specific requirements for reducing fugitive dust, and Mitigation Measure AQ-1.2 requires designation of a dust complaint monitor. As explained above, Mitigation Measure AQ-1.1 has been revised to require watering for dust suppression three times per day. Based on updated emissions forecasting by the Applicant (AMEC, 2014), increasing the dust control frequency to include watering three times daily would ensure that PM10 and fugitive dust emissions of the Revised Project are less than significant (Class II).

***Impact AQ-2: Operation, maintenance, and inspections would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants (Class III)***

The Revised Project would include fewer panels and a smaller site footprint than the Approved Project. Operation, maintenance, and inspection activities would be largely the same, but of a lower intensity. This impact would remain less than significant (Class III).

***Impact AQ-3: Power generated by operation of the solar power plant would indirectly affect operations and emissions from other power plants (Class IV)***

The Revised Project would generate about 62% of the electrical energy of the Approved Project, and therefore would have a lower potential to indirectly affect operations and emissions from other fossil fuel-fired California and western U.S. power plants. However, the Revised Project would still offset fossil fuel-fired emissions, and this impact would remain beneficial (Class IV).

***Impact AQ-4: Project-related emissions may be inconsistent with relevant air quality management plans (Class II)***

Emissions from the Revised Project would require mitigation similar to that identified for the Approved Project, and with the recommended mitigation, these emissions would be consistent with the regional air quality management plan. With sufficient control required by mitigation measures for construction, the project impacts would be managed sufficiently to ensure fugitive dust and construction equipment emissions remain consistent with regional plans, resulting in a less than significant impact (Class II).

## C.4.3.4 Changes to Adopted Mitigation Measures

The Applicant proposed changes to each of the air quality mitigation measures for the Approved Project and to the Applicant Proposed Measures (APM AQ-2 and APM AQ-3). Changes are shown with underline and strikeout, and are evaluated in the following paragraphs.

### Changes to Mitigation Measures

**Proposed changes to MM AQ-1.1.** The changes presented in the text of the measure would not increase the severity of the impact and are acceptable. While the applicant is proposing in AQ-1.1, Item (1) to increase the grading limits from 8.1 to 50 acres per day, the Air Quality Technical Report (AMEC, 2014) prepared for the Revised Project demonstrates that the daily significance threshold for fugistive dust emissions would not be exceeded if the frequency of watering is increased from two times per day to three times per day. Therefore, Mitigation Measure AQ-1.1, (Item 2) has also been revised to require watering three times per day to ensure that daily significance thresholds are not exceeded.

The proposed modification of item (12) allows a range of common alternative methods for soil stabilization to be implemented. These methods are frequently-used alternatives to revegetation, and when properly applied, would not increase amounts of fugitive dust.

Accordingly, the proposed changes to AQ-1.1 would not result in any new significant air quality impact or substantially increase the severity of any previously identified impact.

**MM AQ-1.1** **Reduce fugitive dust.** The Applicant shall implement the following measures to minimize nuisance impacts and to significantly reduce fugitive dust emissions, and the Applicant shall require all of the following measures to be shown on grading and building plans:

(1) Limit grading to ~~8.1~~ 50 acres per day, and grading and excavation to 2.2 acres per day;

(2) Water graded/excavated areas and active unpaved roadways, unpaved staging areas, and unpaved parking areas at least three times ~~twice~~ daily or apply non-toxic chemical soil stabilization materials per manufacturer's recommendations. Frequency should be based on the type of operations, soil and wind exposure;

(3) Prohibit all grading activities during periods of high wind (sustained over 15 mph);

(4) Apply chemical soil stabilizers on inactive construction areas (disturbed lands within construction projects that are unused for at least four consecutive days);

(5) Apply non-toxic binders (e.g., latex acrylic copolymer) or water to exposed areas after cut and fill operations, and hydro-seed area;

(6) Plant vegetative ground cover compliant with County-approved Landscape Plan in disturbed areas as soon as possible;

(7) Cover, enclose, or apply soil stabilizers to inactive storage piles or water three times ~~twice~~ daily;

(8) Install wheel washers or track outs at the entrance to construction sites for all exiting trucks. Track outs will be a minimum of 100 feet long or twice the length of the longest vehicle entering the site. Track out pads will be a combination of corrugated steel "rumble plates" at exits of track out pads and 6 inches thick of class 150 (4" minimum diameter) stone preceding rumble pads. Rumble pads and track out stone will be maintained and cleaned as necessary to remove any deposited materials. Vehicles entering and exiting the site will be free of excessive dirt and debris and will be cleaned as necessary to satisfy fugitive dust control requirements. All on site construction equipment will be required to be washed prior to delivery to the site and washed (utilizing high pressure washers) prior to demobilizing. Construction traffic on site and between sections of the site will utilize track out devices prior to crossing paved roads. Delivery vehicles (over road tractor trailers, concrete and aggregate trucks, and all other delivery vehicles) will be required to travel on established roadways and utilize established lay down areas at the Project site.

Vehicle traffic for employees will travel to established parking areas and enter and exit over the track out devices as previously described. Trackout devices will be regularly maintained and all construction equipment entering the site will be inspected and any equipment observed not to have been washed will not be permitted to enter the Project site.

(9) Use street sweepers, water trucks, or sprinkler systems in sufficient quantities to prevent airborne dust from leaving the site. Reclaimed (non-potable) water should be used whenever possible;

(10) All dirt stock pile areas shall be sprayed daily as needed;

(11) Permanent dust control measures identified in the approved project revegetation and landscape plans shall be implemented as soon as possible following completion of any soil disturbing activities;

(12) Exposed ground areas that are planned to be reworked at dates greater than one month after initial grading shall be sown with a fast germinating, non-invasive grass seed and watered until vegetation is established. Unless restricted in the biological resources mitigation measures, alternative methods for soil stabilization may be implemented, including but not limited to use of water to establish a crust, chemical stabilizers, and straw mulching.

(13) All disturbed soil areas not subject to revegetation shall be stabilized using approved chemical soil binders, jute netting, or gravel for temporary roads and any other methods approved in advance by the Monterey Bay Unified APCD;

(14) Gravel shall be placed on all roadways and driveways as soon as possible after grading for said roadways. In addition, building pads shall be laid as soon as possible after grading unless seeding, soil binders, or frequent water application are used;

(15) Vehicle speed for all construction vehicles shall not exceed 15 mph on any unpaved surface at the construction site;

(16) All trucks hauling dirt, sand, soil, or other loose materials shall be covered or shall maintain at least 2 feet of freeboard (minimum vertical distance between top of load and top of trailer) in accordance with California Vehicle Code Section 23114;

(17) Unpaved road travel shall be limited to the extent possible, for example, by limiting the travel to and from unpaved areas, by coordinating movement between work areas rather than to central staging areas, and by busing workers where feasible;

(18) Install wheel washers where vehicles enter and exit unpaved roads onto streets, or wash off trucks and equipment leaving the site, and inspect vehicle tires to ensure free of soil prior to carry-out to paved roadways. Alternatively, use track outs as defined in (8) above.

(19) Sweep streets at the end of each day, or as needed, if visible soil material is carried onto adjacent paved roads. Water sweepers with reclaimed water shall be used where feasible.

**Proposed change to MM AQ-1.2.** The minor language changes would not create a new air quality impact or substantially increase the severity of an air quality impact.

**MM AQ-1.2** **Designate a dust complaint monitor.** The Applicant shall require the contractor(s) or builder(s) to designate a person or persons to monitor the fugitive dust emissions and enhance the implementation of the measures as necessary to minimize dust complaints, reduce visible emissions below 20 percent opacity, and to prevent transport of dust off-site. Their duties shall include monitoring during holidays and weekend periods only when work ~~may not be~~ is in progress. The name and telephone number of such persons shall be provided to the Monterey Bay Unified APCD Compliance Division prior to the start of any grading, earthwork, or demolition. The Applicant shall provide and post a publicly visible sign that specifies the telephone number and name to contact regarding dust complaints. This person shall respond to complaints and take corrective action within 48 hours. The phone number of the Monterey Bay Unified APCD shall also be visible to ensure compliance with Rule 402 (Nuisance).

## Changes to Applicant Proposed Measures

**Proposed Changes to APM AQ-2.** The minor language changes below would not create a new air quality impact or substantially increase the severity of a air quality impact.

**APM AQ-2:** The Applicant shall implement the following BMPs to further reduce construction vehicle emissions (NOx, VOC, and ~~DPM~~ Diesel Particulate Matter) during project construction:

- Maintain all construction equipment in proper tune according to manufacturer's specifications;
- Use diesel construction equipment meeting ~~CARB's~~ the California Air Resources Board's (CARB's) Tier 2 standards for certified engines or cleaner off-road heavy-duty diesel engines (e.g., Tier 3 and Tier-4, where feasible), and comply with the State In-Use Off-Road Diesel Vehicle Regulation (California Code of Regulations [CCR] Title-13, Article 4.8, Chapter-9, Section 2449);
- Prohibit on and off-road diesel equipment idling for more than 5 minutes, or within time necessary to comply with Title-13, ~~California Code of Regulations~~ CCR, Section 2485 (c) (1) regarding idling of commercial vehicles. Signs shall be posted in the designated queuing areas and or job sites to remind drivers and operators of all idling limits;

~~- Prohibit diesel idling within 1,000 feet of sensitive receptors;~~

- Staging and queuing areas shall not be located within 1,000 feet of sensitive receptors;
- Electrify off-road construction equipment when feasible; and
- Provide incentives for workers to use project-sponsored shuttle bus service or carpooling, where feasible.

For purpose of this mitigation, sensitive receptors shall be defined as occupied residences, senior living centers, parks and recreation areas, medical facilities and schools.

**Proposed changes to APM AQ-3.** The changes shown in the APM below would not result in any new significant air quality impact or substantially increase the severity of any previously identified impact. Gravel track systems are as effective as wheel washers, when properly implemented and when inspections occur.

**APM AQ-3:** The Applicant shall reduce fugitive dust emissions during construction through implementation of the following best management practices to be shown on grading and building plans:

- Water graded/excavated areas and active unpaved roadways, unpaved staging areas, and unpaved parking areas at least three times daily or apply chemical soil stabilizers per manufacturer recommendations. Frequency should be based on the type of operations, soil and wind exposure
- Apply chemical soil stabilizers or water on inactive construction areas (disturbed lands, including dirt stockpiles;
- All disturbed soil areas not subject to revegetation shall be stabilized using approved chemical soil binders, jute netting, or gravel for temporary roads;
- Gravel shall be placed on all perimeter roadways and driveways as soon as possible after grading for said roadways.
- All trucks hauling dirt, sand, soil, or other loose materials shall be covered or shall maintain at least two feet of freeboard (minimum vertical distance between top of load and top of trailer) in accordance with California Vehicle Code Section 23114;
- Install ~~wheel washers~~ gravel track systems where vehicles enter and exit unpaved roads onto streets, ~~or wash off trucks and equipment leaving the site,~~ and inspect ~~vehicle~~ equipment tires to ensure free of soil prior to carry-out to paved roadways.

## C.4.3.5 PG&E Upgrades Impacts

The temporary and permanent air quality impacts of the PG&E Upgrades are analyzed in this section. This analysis is based on the impact statements defined for the solar project, but not all of the air quality impacts apply to the PG&E Upgrades. Impact AQ-3 (Power generated by operation of the solar power plant would indirectly affect operations and emissions from other power plants), addressed for the solar project would not occur as a result of construction or operation of the PG&E Upgrades, and is not analyzed further.

***Impact AQ-1: Construction activities would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants (Class III)***

Installation of the OPGW along the 17-mile upgraded section of the Panoche–Moss Landing transmission line would involve use of helicopters and construction equipment generating exhaust emissions of criteria pollutants and toxic air contaminants and airborne dust from soil disturbance for preparation of pulling/stringing sites as well as for minor improvements to existing access roads. Table C.4-7 lists the

equipment anticipated to be utilized by PG&E during the approximately 16 week construction period for installation of the OPGW.

**Table C.4-7. PG&E Equipment for OPGW Installation**

| Equipment Type | Fuel Type | Quantity |
|---|---|---|
| Dump Truck / Line Truck | Diesel | 2 |
| Excavator/ Back Hoe | Diesel | 1 |
| Skid Steer (Hauling Puller) | Diesel | 1 |
| Pick-up Truck | Gasoline/Diesel | 2 |
| Manlift / Bucket Truck | Diesel | 2 |
| Crawler Cranes <200T | Diesel | 1 |
| Crawler drill rig | Diesel | 1 |
| Helicopter* | Jet Fuel | 1 |

Construction of two to three new microwave communication towers would utilize construction equipment that would generate exhaust emissions and dust emissions, with the construction activity occurring primarily within the fence lines of the proposed substation and other communication tower sites. Although these activities would generate exhaust and dust emissions, construction related emissions would not contribute substantially because the ambient levels for these pollutants in the San Joaquin Valley APCD are well below State and Federal ambient air quality standards, and the emission of CO and SO2 from construction of the PG&E work would be negligible and of short duration.

The construction emissions would not occur at significant levels due to the short construction period, the limited extent of equipment use, and the small footprint of the proposed upgrades. As described in the August 8, 2014 Technical Memorandum including a CalEEMod Analysis of Potential Particulate Emissions from Construction Activities at the Panoche Valley Solar Project, PM10 emissions would not be exceeded if ground disturbance is limited to 50 acres per day and water is applied for dust suppression three times daily. As depicted in Table B-10, approximately 5.62 acres are anticipated to be disturbed as a result of PG&E upgrade activities. Therefore, PG&E activities occurring partially in Fresno County and partially in San Benito County, would not result in an exceedance of Monterey Bay Unified APCD or SJVAPCD PM10 thresolds. Similarly, the amount of equipment that will be used for a short duration will not generate emissions of criteria pollutants above applicable significance thresholds.

PG&E's AMMs AQ-1 (Minimize fugitive dust) and AQ-2 (Limit idling time) would be implemented to ensure that impacts remain less than significant (Class III).

***Impact AQ-2: Operation, maintenance, and inspections would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants (Class III)***

Operation, maintenance, and inspections of the PG&E Upgrades would cause very minor dust, criteria air pollutant and toxic air contaminant emissions from the use of transportation fuels for maintenance and inspection vehicles. However, these inspections would be completed as a component of the transmission line inspections; there would be no separate inspection of the OPGW. These emissions would not occur in quantities notably different from those already occurring as the existing systems are inspected and maintained. The impact would be less than significant (Class III).

***Impact AQ-4: Project-related emissions may be inconsistent with relevant air quality management plans (Class III)***

Emissions from the PG&E Upgrades would generally be limited to construction sources that would be consistent with the regional air quality management plans of both the Monterey APCD and the Fresno County portion of the San Joaquin Valley Air Basin and Fresno County General Plan (County of Fresno, 2000; SJAPCD, 2014b).

In April 2013, MBUAPCD adopted the 2012 Triennial Plan Revision (MBUAPCD, 2013b), which assesses and updates elements of the 2008 AQMP, including the air quality trends analysis, emission inventory, and mobile source programs. The 2012 AQMP Revision only addresses attainment of the state ozone standard. In 2012, EPA designated the NCCAB as attainment of the current national 8-hour ozone standard of 0.075 ppm. Projects that result in an increase in population that is inconsistent with local community plans would be considered inconsistent with the AQMP. The proposed PG&E Upgrades would not conflict with or otherwise obstruct the implementation of the AQMP as there would be no permanent population increases or new stationary sources of emissions associated with the PG&E Upgrades.

The Fresno County General Plan includes policies addressing air quality issues in its Open Space and Conservation Element. The following goal and policy would be applicable to the PG&E Upgrades:

- Goal OS-G: To improve air quality and minimize the adverse effects of air pollution in Fresno County.
- Policy OS-G.2: The County shall ensure that air quality impacts identified during the CEQA review process are fairly and consistently mitigated. The County shall require projects to comply with the County's adopted air quality impact assessment and mitigation procedures.

The SJVAPCD's most recent AQMP for ozone attainment is the 1-hour Extreme Ozone Attainment Demonstration Plan which was adopted in September 2013. The District's 2013 Plan for the Revoked 1-Hour Ozone Standard demonstrates how the Valley will attain the revoked 1-hour ozone standard by 2017. In April 2008, The SJVAPCD Board adopted the 2008 PM2.5 Plan. This plan was designed to attain the federal and State PM2.5 standards in the SJVAB as soon as possible. Through implementation of AMMs AQ-1 (Minimize fugitive dust) and AQ-2 (Limit idling time), the fugitive dust and construction equipment emissions would meet applicable regulatory standards, would not occur at a significant level, and would be consistent with regional plans, resulting in a less than significant impact (Class III).

### C.4.3.6 Cumulative Impacts

No significant additional sources of emissions would be caused by cumulative projects near the Revised Project site or the areas surrounding the PG&E Upgrades. Emissions caused by the Revised Project with recommended mitigation measures would be reduced to minimize the project's cumulative air quality impacts. Although emissions caused by construction, operation, and maintenance of the Revised Project could combine with emissions from other projects in the area of cumulative effects to cause a cumulatively considerable impact, the level of air pollutants emitted not be significant. Any contribution to a cumulatively considerable impact to air quality would be less than significant (Class III).

## C.4.4 Summary of Impacts.

The significance of impacts for air quality for the Revised Project and for the PG&E Upgrades is summarized in Sections C.4.4.1 through C.4.4.3.

### C.4.4.1 Revised Solar Project

There are no changes to the significance of impacts from the conclusions of the 2010 Final EIR. The impacts summarized in Table C.4-6 remain accurate. The Revised Project, with mitigation, would result in less than significant (Class II or III) impacts on air quality due to the generation of exhaust emissions during construction, operations, and maintenance. Mitigation Measures AQ-1.1 and AQ-1.2 would ensure that impacts are not significant. Operation of the Revised Project would result in a beneficial (Class IV) impact through the avoidance of emissions from fossil fuel-fired power plants.

### C.4.4.2 PG&E Upgrades

The PG&E Upgrades would result in less than significant (Class III) impacts on air quality due to the generation of exhaust and dust emissions during construction, operations, and maintenance. Emissions would be reduced with implementation of PG&E's Avoidance and Minimization Measures.

### C.4.4.3 Overall Significance of Impacts

The combined impacts of the Revised Project and those of the PG&E Upgrades would be less than significant, when compared with the standards of the two different APCDs.

## C.4.5 References

AMEC. 2014. Technical Memorandum to: Panoche Valley Solar LLC. Subject: CalEEMod Analysis of Potential Particulate Emissions from Construction Activities at the Panoche Valley Solar Farm Project. August 8, 2014.

CARB (California Air Resources Board). 2013. Ambient Air Quality Standards Chart. Revised: June 4, 2013.

County of Fresno. 2000. Fresno County General Plan—Open Space and Conservation Element. October.

Monterey Bay Unified APCD (Air Pollution Control District). 2013a. North Central Coast Air Basin (NCCAB) Area Designations and Attainment Status – January 2013.

____. 2013b. Air Quality Management Plan Revision - 2012.

SCEC. 2010. SCEC Air Quality Specialists: Air Quality Analysis for Panoche Valley Solar Farm Technical Report. May 2010.

SJVAPCD (San Joaquin Valley Air Pollution Control District). 2014a. Attainment status. Ambient Air Quality Standards & Valley Attainment Status. http://www.valleyair.org/aqinfo/attainment.htm. Accessed November 14, 2014.

____. 2014b. San Joaquin Valley Air Quality Management Plans. http://www.arb.ca.gov/planning/sip/planarea/sanjqnvllysip.htm. Accessed November 14, 2014.

____ 2002. Guide for Assessing and Mitigating Air Quality Impacts, updated January 10, 2002.

# C.5 Climate Change/Greenhouse Gas

This section analyzes whether the Revised Project and PG&E Upgrades result in any new significant impacts related to climate change and greenhouse gas that were not previously identified and disclosed in the 2010 Final EIR, or whether there has been a substantial increase in the severity of any previously identified impacts. As part of this analysis, the section considers changes to the potential changes to regulations, impacts, and mitigation measures.

## C.5.1 Environmental Setting

The following section describes changes to the environmental setting that have occurred since 2010. Section C.5.1.1 describes any changes to the environmental setting that was presented in the 2010 Final EIR. Section C.5.1.2 describes the environmental setting for the area surrounding the PG&E Upgrades.

### C.5.1.1 Revised Solar Project

The climate change and greenhouse gas environmental setting for the Revised Project site has remained substantially unchanged since approval of the 2010 Final EIR. Panoche Valley remains generally undeveloped and pastoral in character. No new development has occurred, and no major new structures have been built in the valley. Grazing remains the primary land use in the area. No new sources of emissions are present in the project area. The construction schedule for the Revised Project would be compressed to approximately 18 months compared to the Approved Project construction schedule of approximately five years. The generating capacity of the Revised Project would be 247 MW, rather than the 399 MW capacity under the Approved Project.

### C.5.1.2 PG&E Upgrades

The PG&E Upgrades associated with the Revised Project include installation of approximately 17 miles of optical ground wire (OPGW) primarily on existing transmission towers between the Panoche Valley Solar Project site and the existing Panoche Substation in Fresno County. The telecommunications system upgrades also include construction of three new microwave communication towers and upgrades to an existing microwave tower. The PG&E Upgrades would include eight new transmission structures that are required to tie the existing Moss Landing–Panoche 230 kV transmission line into the proposed PG&E switchyard, located within the Revised Project site boundaries. The new transmission structures would be installed by PG&E after site preparation is completed by the Applicant.

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, the Call Mountains (west of the Panoche Valley), Panoche Mountain (east of the Panoche Valley), and the area surrounding the Helm Substation (approximately 13 miles southwest of the City of Fresno).

These upgrades would occur over a period of 12 to 16 weeks and would be accomplished using a combination of helicopters and ground-based construction equipment.

## C.5.2 Applicable Regulations, Plans, and Standards

The applicable regulations, plans, and standards that apply to the assessment of climate change and greenhouse gas impacts within the project area are presented in Section C.5.2 of the 2010 Final EIR. Since 2010, various changes have occurred in the regulatory setting, including the implementation of standards by the California Air Resources Board (CARB) for gas-insulated electrical switchgear and the state-

wide Cap-and-Trade Program. However, the regulatory changes do not substantially alter the project regulatory setting for climate change and GHG. The emissions standard for the use of sulfur hexafluoride ($SF_6$) in power transformers and circuit breakers is as follows:

**CARB $SF_6$ Regulations (17 CCR 95350).** In 2010, CARB adopted a regulation for reducing $SF_6$ emissions from electric power system gas insulated switchgear. The regulation requires owners of such switchgear to: (1) annually report their $SF_6$ emissions; (2) determine the emission rate relative to the $SF_6$ capacity of the switchgear; (3) provide a complete inventory of all gas insulated switchgears and their $SF_6$ capacities; (4) produce a $SF_6$ gas container inventory; and (5) keep all information current for CARB enforcement staff inspection and verification.

## C.5.3 Environmental Impacts and Mitigation Measures

This section addresses whether the changes to the Approved Project would result in any new significant impact or increase the severity of previously identified impacts related to climate change. Section C.9.3.1 restates the significance criteria used in 2010 to determine whether any project changes result in any new or more severe significant impacts. Section C.9.3.2 summarizes the impacts and mitigation measures presented in the 2010 Final EIR for ease of reference. Section C.9.3.3 presents the updated impact analysis for the Revised Project, and Section C.9.3.4 addresses changes in adopted mitigation measures. Section C.9.3.5 addresses the environmental impacts that would occur as a result of the PG&E Upgrades, and Section C.9.3.6 describes cumulative impacts.

### C.5.3.1 Significance Criteria

The following significance criteria for climate change/greenhouse gas emissions are from the CEQA Guidelines Appendix G including 2010 amendments. Impacts of the Revised Project and the PG&E Upgrades would be considered significant and would require mitigation if they would:

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or
- Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

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

### C.5.3.2 Approved Project Impacts and Mitigation Measures

Table C.5-1 presents a summary of the impacts and mitigation measures applicable to the Approved Project.

**Table C.5-1. Summary of Impacts and Mitigation: Climate Change/Greenhouse Gas**

| Impact No. and Text | Mitigation Required | CEQA Conclusion |
|---|---|---|
| Impact CC-1: Construction would generate exhaust emissions of greenhouse gases. | None. | Class III |
| Impact CC-2: Operation, maintenance, and inspections would generate exhaust emissions of greenhouse gases. | None. | Class III |
| Impact CC-3: Power generated by operation of the solar power plant would avoid greenhouse gas emissions and land use conversion related to the solar project would alter natural carbon sinks. | None. | Class IV |

**Table C.5-1. Summary of Impacts and Mitigation: Climate Change/Greenhouse Gas**

| Impact No. and Text | Mitigation Required | CEQA Conclusion |
|---|---|---|
| Impact CC-4: The project would conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases. | None. | No Impact |
| Impact CC-5: Contribute to cumulatively considerable greenhouse gas emissions. | None. | Class III |

## C.5.3.3 Revised Solar Project Impacts

Four climate change impacts are addressed in this section; cumulative impacts are evaluated in Section C.5.3.6.

***Impact CC-1: Construction would generate exhaust emissions of greenhouse gases (Class III)***

The Approved Project would have had a generating capacity of 399 MW, with 2,203 acres of permanent disturbance, and the Revised Project would generate 247 MW with 1,888 acres of permanent disturbance. The expected construction activity for the originally proposed 420 MW solar project was estimated at approximately 43,900 metric tonnes of $CO_2$-equivalent (based on Applicant estimates, see Appendix 3 of the 2010 Final EIR for supporting calculations). The Revised Project would be about 51% of the fenced area of the originally proposed project and 78% of the fenced area of the Approved Project; so the Revised Project would be expected to have proportionally fewer GHG emissions from the use of construction equipment and employee commuting. Although the construction schedule for the Revised Project would be compressed to approximately 18 months (compared to the Approved Project schedule of approximately 5 years), the emissions of the Revised Project would still be amortized over the 30-year life of the project. Total emissions are estimated at approximately 22,390 metric tonnes of $CO_2$ equivalent (about 51% of those of the originally proposed project and about 78% of those of the Approved Project because the Revised Project would involve a smaller development overall and less overall ground disturbance). Therefore, construction emissions amortized over the anticipated 30-year life of the project would be about 746 metric tonnes $CO_2$ per year, not exceeding the CARB Mandatory Reporting applicability level of 2,500 metric tonnes $CO_2$ per year. Therefore, the short-term emission of greenhouse gas during construction would remain adverse but less than significant (Class III).

***Impact CC-2: Operation, maintenance, and inspections would generate exhaust emissions of greenhouse gases (Class III)***

Greenhouse gas emissions would occur during operation, maintenance, and inspection of the Revised Project from the use of carbon-based fuels for on-site vehicles and off-site delivery vehicles. The Revised Project would be about 78% of the fenced area of the Approved Project, leading to a small reduction in on-site vehicle use for maintenance and inspections. Also, as described in detail in Section 6.5.1.1 of the 2010 Final EIR, the greenhouse gas sulfur hexafluoride ($SF_6$), which serves to insulate transformers in electric substations, would be used at the PG&E switching station. The quantity of $SF_6$ would be small in quantity and emission rate and would easily be controlled or minimized because the gas can be reused and recycled. Greenhouse gas emissions for operation, maintenance, and inspections would be lower for the Revised Project than for the Approved Project, and this impact would remain less than significant (Class III).

***Impact CC-3: Power generated by operation of the solar power plant would avoid greenhouse gas emissions and land use conversion related to the solar project would alter natural carbon sinks (Class IV)***

The Revised Project would generate about 62% of the electrical energy of the Approved Project, and therefore would offset less greenhouse gas emissions from fossil fuel-fired California and western U.S. power plants. The potential to alter natural carbon sinks would be lower than that of the Approved Project because the Revised Project would involve less overall ground disturbance. Because the renewable energy generated by the Revised Project would still offset fossil fuel-fired emissions of GHG, this impact would remain beneficial (Class IV).

***Impact CC-4: The project would conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases (No Impact)***

The Revised Project would remain a notable contributor to the successful implementation of AB32. Like the Approved Project, the Revised Project would not conflict with any applicable plan, policy or regulation for greenhouse gas reduction or managing global climate change. No impact would occur.

## C.5.3.4 Changes to Adopted Mitigation Measures

The 2010 Final EIR concluded that the Approved Project would result in a less than significant climate change impacts; therefore, no mitigation measures were recommended or required for the Approved Project. As documented above, the same is true for the Revised Project.

## C.5.3.5 PG&E Upgrades Impacts

The temporary and permanent climate change/greenhouse gas impacts of the PG&E Upgrades are analyzed in this section. This analysis is based on the impact statements defined for the solar project, but only the Impacts CC-1, CC-2 and CC-5 apply to the PG&E Upgrades and are discussed. The following two impacts would not occur as a result of construction or operation of the PG&E Upgrades, and are not further addressed:

- Impact CC-3: Power generated by operation of the solar power plant would avoid greenhouse gas emissions and land use conversion related to the solar project would alter natural carbon sinks
- Impact CC-4: The project would conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases

***Impact CC-1: Construction would generate exhaust emissions of greenhouse gases (Class III)***

Construction of the PG&E Upgrades would generate exhaust GHG emissions through the use of helicopters and ground-based construction equipment. Construction activities would occur over a period of 12 to 16 weeks and would include installation of new OPGW primarily on existing structures as well as construction of up to three new microwave communication towers. PG&E would also construct 8 new tubular steel poles (TSPs) to tie the existing transmission line into the new PG&E switchyard located within the Revised Project boundaries. Although these activities would generate exhaust emissions of GHG, the total volume of emissions would not occur at a significant level due to the short construction period, the limited extent of equipment use, and the small footprint of the proposed upgrades. This impact would be less than significant (Class III).

***Impact CC-2: Operation, maintenance, and inspections would generate exhaust emissions of greenhouse gases (Class III)***

Operation, maintenance, and inspections of the PG&E Upgrades would cause greenhouse gas emissions from the use of carbon-based fuels for maintenance and inspection vehicles. However, these inspections would be completed in conjunction with PG&E's existing and ongoing routine inspection program of the transmission line; there would be no separate or increased inspection protocol for the OPGW that would be installed. The operation and maintenance activities and emissions would be comparable to those occurring for the existing transmission and communication systems in the setting. These emissions would not occur in quantities notably different from those already occurring as the existing systems are inspected and maintained. The impact would be less than significant (Class III).

### C.5.3.6 Cumulative Impacts

The projects that have been constructed or proposed in the area of potential cumulative effects have changed since 2010, as described in Section D, and now include numerous solar power facilities. These other solar generation projects will jointly contribute to the overall reduction of greenhouse gas by offsetting current and past generation from coal and natural gas fired power plants.

Greenhouse gas emissions would be generated by vehicles and equipment used in construction, operation, and maintenance of the Revised Project and the PG&E Upgrades. These emissions could combine with emissions from other projects in the region, but those emissions are offset by the larger reductions in greenhouse gas resulting from reductions in fossil fueled generation facilities. Therefore, the overall contribution to cumulative impacts for greenhouse gas emissions would be negligible.

## C.5.4 Summary of Impacts

The significance of impacts for climate change/greenhouse gas for the Revised Project and for the PG&E Upgrades is summarized in Sections C.5.4.1 and C.5.4.2. Section C.5.4.3 summarizes the impacts of all project components.

### C.5.4.1 Revised Solar Project

There are no changes to the significance of impacts from the conclusions of the 2010 Final EIR. The impacts summarized in Table C.5-1 remain accurate. The Revised Project would result in less than significant (Class III) impacts on climate change/greenhouse gas due to the generation of exhaust emissions during construction, operations, and maintenance. Operation of the Revised Project would result in a beneficial (Class IV) impact through the avoidance of emissions from fossil fuel-fired power plants. Construction and operation of the Revised Project would cause a less than significant (Class III) contribution to cumulatively considerable greenhouse gas emissions.

### C.5.4.2 PG&E Upgrades

The PG&E Upgrades would result in less than significant (Class III) impacts on climate change/greenhouse gas due to the generation of exhaust emissions during construction, operations, and maintenance. Construction and operation of the PG&E Upgrades would cause a less than significant (Class III) contribution to cumulative greenhouse gas emissions.

### C.5.4.3 Overall Significance of Impacts

Greenhouse gas impacts of the Revised Project and the PG&E Upgrades would remain less than significant. The electricity generated by the Revised Project would reduce regional GHG emissions, resulting in an overall beneficial impact.

# 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<br>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>BR-G.2: Implement Best Management Practices.<br>BR-G.3: Develop and implement a Habitat Restoration and Revegetation Plan.<br>BR-G.4: Implement biological construction monitoring.<br>BR-G.5: Create permanent conservation easements as compensation for impacts to biological resources.<br>BR-G.6: Develop and implement Habitat Mitigation and Monitoring Plan for mitigation lands.<br>BR-1.1: Prepare and implement a Weed Control Plan.<br>BR-1.2: Develop and implement a Grazing Plan for the project site.<br>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>BR-G.2: Implement Best Management Practices.<br>BR-G.3: Develop and implement a Habitat Restoration and Revegetation Plan<br>BR-G.4: Implement biological construction monitoring.<br>BR-1.1: Prepare and implement a Weed Control Plan.<br>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>BR-G.2: Implement Best Management Practices.<br>BR-G.3: Develop and implement a Habitat Restoration and Revegetation Plan<br>BR-G.4: Implement biological construction monitoring.<br>BR-G.5: Create permanent conservation easements as compensation for impacts to biological resources.<br>BR-G.6: Develop and implement Habitat Mitigation and Monitoring Plan for mitigation lands.<br>BR-1.1: Prepare and implement a Weed Control Plan.<br>BR-1.2: Develop and implement a Grazing Plan for the project site.<br>BR-3.1: Conduct pre-construction surveys for State and Federally Threatened, Endangered, Proposed, Petitioned, and Candidate plants and implement avoidance measures.<br>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>BR-1.1: Prepare and implement a Weed Control Plan.<br>BR-1.2: Develop and implement a Grazing Plan for the project site.<br>BR-G.1: Implement a Worker Environmental Education Program.<br>BR-G.2: Implement Best Management Practices.<br>BR-G.3: Develop and implement a Habitat Restoration and Revegetation Plan<br>BR-G.4: Implement biological construction monitoring.<br>BR-G.5: Create permanent conservation easements as compensation for impacts to biological resources.<br>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>BR-G.2: Implement Best Management Practices.<br>BR-G.3: Develop and implement a Habitat Restoration and Revegetation Plan<br>BR-G.4: Implement biological construction monitoring.<br>BR-G.5: Create permanent conservation easements as compensation for impacts to biological resources.<br>BR-G.6: Develop and implement Habitat Mitigation and Monitoring Plan for mitigation lands.<br>BR-1.1: Prepare and implement a Weed Control Plan.<br>BR-1.2: Develop and implement a Grazing Plan for the project site.<br>BR- 6.1: Conduct pre-construction surveys for nesting and breeding birds and implementation of avoidance measures.<br>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>BR-G.2: Implement Best Management Practices.<br>BR-G.3: Develop and implement a Habitat Restoration and Revegetation Plan<br>BR-G.4: Implement biological construction monitoring.<br>BR-G.5: Create permanent conservation easements as compensation for impacts to biological resources.<br>BR-G.6: Develop and implement Habitat Mitigation and Monitoring Plan for mitigation lands.<br>BR-1.1: Prepare and implement a Weed Control Plan.<br>BR-1.2: Develop and implement a Grazing Plan for the project site.<br>BR- 6.1: Conduct pre-construction surveys for nesting and breeding birds and implementation of avoidance measures.<br>BR- 7a.1: Impacts to all potential breeding habitat for western spadefoot toad shall be avoided to the extent feasible.<br>BR- 7a.2: Conduct focused pre-construction surveys for San Joaquin coachwhip and coast horned lizard and implement avoidance measures.<br>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.<br>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>BR-G.2: Implement Best Management Practices.<br>BR-G.3: Develop and implement a Habitat Restoration and Revegetation Plan<br>BR-G.4: Implement biological construction monitoring.<br>BR-G.5: Create permanent conservation easements as compensation for impacts to biological resources.<br>BR-G.6: Develop and implement Habitat Mitigation and Monitoring Plan for mitigation lands.<br>BR-8.1: Complete full protocol-level surveys of ephemeral pools.<br>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>BR-8.3: Avoid seasonal depressions and known waterbodies.<br>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>BR-G.2: Implement Best Management Practices.<br>BR-G.3: Develop and implement a Habitat Restoration and Revegetation Plan<br>BR-G.4: Implement biological construction monitoring.<br>BR-G.5: Create permanent conservation easements as compensation for impacts to biological resources.<br>BR-G.6: Develop and implement Habitat Mitigation and Monitoring Plan for mitigation lands.<br>BR-9.1: Conduct pre-construction surveys for California tiger salamander and implement avoidance measures.<br>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>BR-G.2: Implement Best Management Practices.<br>BR-G.3: Develop and implement a Habitat Restoration and Revegetation Plan<br>BR-G.4: Implement biological construction monitoring.<br>BR-G.5: Create permanent conservation easements as compensation for impacts to biological resources.<br>BR-G.6: Develop and implement Habitat Mitigation and Monitoring Plan for mitigation lands.<br>BR-10.1: Conduct pre-construction surveys for blunt-nosed leopard lizard and implement avoidance measures<br>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>BR-G.2: Implement Best Management Practices.<br>BR-G.3: Develop and implement a Habitat Restoration and Revegetation Plan<br>BR-G.4: Implement biological construction monitoring.<br>BR-G.5: Create permanent conservation easements as compensation for impacts to biological resources.<br>BR-G.6: Develop and implement Habitat Mitigation and Monitoring Plan for mitigation lands.<br>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>BR-G.2: Implement Best Management Practices.<br>BR-G.3: Develop and implement a Habitat Restoration and Revegetation Plan<br>BR-G.4: Implement biological construction monitoring.<br>BR-G.5: Create permanent conservation easements as compensation for impacts to biological resources.<br>BR-G.6: Develop and implement Habitat Mitigation and Monitoring Plan for mitigation lands.<br>BR- 6.1: Conduct pre-construction surveys for nesting and breeding birds and implementation of avoidance measures.<br>BR-12.2: Avoid and report California condors.<br>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>BR-G.2: Implement Best Management Practices.<br>BR-G.3: Develop and implement a Habitat Restoration and Revegetation Plan<br>BR-G.4: Implement biological construction monitoring.<br>BR-G.5: Create permanent conservation easements as compensation for impacts to biological resources.<br>BR-G.6: Develop and implement Habitat Mitigation and Monitoring Plan for mitigation lands.<br>BR-13.1: Focused pre-construction burrowing owl surveys and implementation of avoidance measures.<br>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>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>BR-G.2: Implement Best Management Practices.<br>BR-G.3: Develop and implement a Habitat Restoration and Revegetation Plan<br>BR-G.4: Implement biological construction monitoring.<br>BR-G.5: Create permanent conservation easements as compensation for impacts to biological resources.<br>BR-G.6: Develop and implement Habitat Mitigation and Monitoring Plan for mitigation lands.<br>AQ-1.1: Reduce Fugitive Dust.<br>BR-15.1: Survey pre-construction for any maternity colony or hibernaculum for sensitive bats.<br>BR-15.2: Provide substitute roosting habitat, should any roosting habitat be identified onsite in the future.<br>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>BR-G.2: Implement Best Management Practices.<br>BR-G.3: Develop and implement a Habitat Restoration and Revegetation Plan<br>BR-G.4: Implement biological construction monitoring.<br>BR-G.5: Create permanent conservation easements as compensation for impacts to biological resources.<br>BR-G.6: Develop and implement Habitat Mitigation and Monitoring Plan for mitigation lands.<br>BR-1.1: Prepare and implement a Weed Control Plan.<br>BR-1.2: Develop and implement a Grazing Plan for the project site.<br>BR-16.1: Conduct focused pre-construction giant kangaroo rat burrow/precinct surveys and implement avoidance measures.<br>BR-16.2: Minimize impacts of foundation support installations.<br>BR-16.3: Establish functional giant kangaroo rat habitat corridors across the project footprint<br>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>BR-G.2: Implement Best Management Practices.<br>BR-G.3: Develop and implement a Habitat Restoration and Revegetation Plan<br>BR-G.4: Implement biological construction monitoring.<br>BR-G.5: Create permanent conservation easements as compensation for impacts to biological resources.<br>BR-G.6: Develop and implement Habitat Mitigation and Monitoring Plan for mitigation lands.<br>BR-1.1: Prepare and implement a Weed Control Plan.<br>BR-1.2: Develop and implement a Grazing Plan for the project site.<br>BR- 17.1: Conduct focused pre-construction surveys for San Joaquin antelope squirrel surveys and implement avoidance measures.<br>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>BR-G.2: Implement Best Management Practices.<br>BR-G.3: Develop and implement a Habitat Restoration and Revegetation Plan<br>BR-G.4: Implement biological construction monitoring.<br>BR-G.5: Create permanent conservation easements as compensation for impacts to biological resources.<br>BR-G.6: Develop and implement Habitat Mitigation and Monitoring Plan for mitigation lands.<br>BR-1.1: Prepare and implement a Weed Control Plan.<br>BR-1.2: Develop and implement a Grazing Plan for the project site.<br>BR- 18.1: Conduct focused pre-construction surveys for American badger surveys and implementation of avoidance measures.<br>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>BR-G.2: Implement Best Management Practices.<br>BR-G.3: Develop and implement a Habitat Restoration and Revegetation Plan<br>BR-G.4: Implement biological construction monitoring.<br>BR-G.5: Create permanent conservation easements as compensation for impacts to biological resources.<br>BR-G.6: Develop and implement Habitat Mitigation and Monitoring Plan for mitigation lands.<br>BR-1.1: Prepare and implement a Weed Control Plan.<br>BR-1.2: Develop and implement a Grazing Plan for the project site.<br>BR-19.1: Conduct focused pre-construction San Joaquin kit fox surveys and implementation of avoidance measures.<br>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>BR-G.2: Implement Best Management Practices.<br>BR-G.3: Develop and implement a Habitat Restoration and Revegetation Plan<br>BR-G.4: Implement biological construction monitoring.<br>BR-G.5: Create permanent conservation easements as compensation for impacts to biological resources.<br>BR-G.6: Develop and implement Habitat Mitigation and Monitoring Plan for mitigation lands.<br>BR-1.1: Prepare and implement a Weed Control Plan.<br>BR-1.2: Develop and implement a Grazing Plan for the project site.<br>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>BR-16.3: Establish functional giant kangaroo rat habitat corridors across the project footprint<br>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<br>▪ 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).~~<br>▪ Provide for connectivity of these avoided areas, ~~which will be largely accomplished via the avoided wash/creek habitat~~ through the Valley Floor Conservation Land.<br>▪ 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.).~~<br>▪ Restoration measures (soil stockpiling and revegetation efforts) will restore temporarily disturbed areas so they provide suitable areas for the species<br>~~On-going monitoring based on the occupancy sampling will be used to determine changes in use of the site.~~<br>~~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<br>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<br>▪ 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 to the extent practicable impacts to individuals (e.g., preconstruction surveys, translocation efforts, education program of workers, site restrictions on access and operations, etc.).<br>▪ Project will utilize the Giant Kangaroo Rat Relocation Plan to relocate Giant Kangaroo Rat present on the site prior to the start of construction.<br>▪ Restoration measures (soil stockpiling and revegetation efforts) will restore temporarily disturbed areas so they provide suitable areas for the species<br>▪ ~~On-going monitoring based on the occupancy~~ Occupancy sampling ~~will be~~ was used to determine changes in ~~use~~ layout of the site.<br>This monitoring ~~will inform~~ informed 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<br>▪ Mitigate at a 3:1 ratio<br>▪ Mitigate an additional 1:1 if after 5 years of monitoring the temporarily restored areas are found to no longer support the species.<br>▪ 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~~, including Valley Floor Conservation Lands, Silver Creek Ranch Conservation Lands, and Valadeao Ranch Conservation Lands provide 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~~.<br>▪ Monitoring of the site will permit an adaptive management program such as modifications of the grazing regime.<br>Off-site lands will be managed by a third party ~~such as the BLM or California Rangeland Trust.~~ selected in consultation with CDFW and USFWS. | 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<br>▪ 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.<br>▪ 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.<br>▪ Monitoring of the site will permit an adaptive management program such as modifications of the grazing regime.<br>▪ 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<br>▪ 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.<br>▪ 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.~~<br>▪ 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.<br>▪ 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 ~~g~~e) 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 ~~h~~f) 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 54.2~~52.4 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.<br>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).<br>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:<br>• 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.<br>• 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.<br>• 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.<br>• All drainage patterns and grades will be returned to preconstruction conditions<br>• 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).

## C.6.5 References

American Bird Conservancy. 2011. Nevada Citizens Asked to Help Prevent Deaths of Thousands, Maybe Millions of Birds. November. [online]: http://www.abcbirds.org/newsandreports/releases/111122.html.

APLIC (Avian Power Line Interaction Committee). 2012. Reducing Avian Collisions with Power Lines: State of the Art in 2012. Edison Electric Institute and the Avian Power Line Interaction Committee, Washington, D.C.

_____. 2006. Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006. Edison Electric Institute, APLIC, and the California Energy Commission. Washington, D.C. and Sacramento, CA. 207 pp.

Avery, M. L., P. F. Spring, and N. S. Dailey. 1978. Avian mortality at man-made structures: an annotated bibliography. U.S. Fish and Wildlife Service, Biological Services Program, National Power Plant Team. FWS/OBS-78/58. 108 pp.

Bloom. 2014. GOEA survey, Panoche project specific

BLM (Bureau of Land Management). 2009. Clear Creek Management Area Draft Resource Management Plan & Draft Environmental Impact Statement. November 2009.

Braun, S.E. 1985. Home range and activity patterns of the giant kangaroo rat, Dipodomys ingens. J. Mammal. 66:1-12.

Brown, W. M. 1993. Avian collisions with utility structures: biological perspective. In: Proceedings of the international conference-Avian interactions with utility structures, September 13-15, 1992, Electric Power Research Institute and Avian Power Line Interaction Committee, Miami, FL.

Bumgardner Biological Consulting. 2014. California Tiger Salamander Pre-construction Avoidance and Minimization Plan for the Panoche Valley Solar Facility Project San Benito County, California. November 2014.

Calflora. 2014. Calflora: Information on California plants for education, research and conservation. 2009. Berkeley, California: The Calflora Database. http://www.calflora.org. Accessed through November 2014.

CBOC (California Burrowing Owl Commission). 1993. Burrowing Owl Survey Protocol and Mitigation Guidelines. – update, Ca BUOW Consortium, 1995?

CCH (Consortium of California Herbaria). 2014. California Herbaria. Regents of the University of California. [online]: http://ucjeps.berkeley.edu/consortium/. Accessed through November 2014 (and other dates).

CDFG (California Department of Fish and Game). 2010. Natural Communities List. [online] http://www.dfg.ca.gov/biogeodata/vegcamp/natural_communities.asp

_____. 2004. Approved Survey Methodology for the Blunt-nosed Leopard Lizard. Revised May 2004.

_____. 1995. BUOW pre-con surveys

CNDDB (California Natural Diversity Database). 2014. Rarefind 5.0. A Program Created by the California Department of Fish and Game, allowing access to the CNDDB.

CNPS (California Native Plant Society). 2014. Inventory of Rare and Endangered Plants (online edition, v8-02). Rare Plant Program. Sacramento, California. [online] http://www.rareplants.cnps.org. Accessed through November 2014 (and other dates).

Constable, J. L., B. L. Cypher, S. E. Phillips, and P. A. Kelly. 2009. Conservation of San Joaquin kit foxes in western Merced County, California. Prepared for the U.S. Bureau of Reclamation, South-Central California Area Office. 50 pp. + appendices.

County of San Benito. 2010. Final Environmental Impact Report – Panoche Valley Solar Farm Project. CUP No. UP 1023-09. State Clearinghouse No. 2010031008. Dept. of Planning and Building Inspection Services. Hollister, CA Sept 2010.

Crawford, R. L., and W. W. Baker. 1981. Bats Killed at a North Florida Television Tower: A 25-Year Record. Journal of Mammalogy 62:651-652.

Energy Renewal Partners, LLC and McCormick Biological Inc. 2014. Panoche Valley Solar San Joaquin Antelope Squirrel Relocation Plan. Prepared for Panoche Valley Solar, LLC. 12 April 2014.

Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. January. Wetlands Research Program Technical Report Y-87-1. Department of the Army, Vicksburg, Mississippi. Fenton, M. B. 1997. The Science and Conservation of Bats. Journal of Mammalogy 78(1):1–14.

Greif, S., and B. M. Siemers. 2010. Innate recognition of water bodies in echolocating bats. Nature Communications 1(107).

Greif, S. 2013. Acoustic mirrors as ecological traps for bats? Presentation given at the 3rd Berlin Bat Meeting: Bats in the Anthropocene. March 1.

Haight, R. G., B. L. Cypher, P. A. Kelly, S. Phillips, H. P. Possingham, K. Ralls, A. M. Starfield, P. J. White, and D. Williams. 2002. Optimizing habitat protection using demographic models of population viability. Conservation Biology 16:1386-1397.

Horváth, G., Kriska, G., Malik, P. & B. A. Robertson. 2009. Polarized light pollution: A new kind of ecological photopollution. Frontiers in Ecology and the Environment.

Horvath, Gabor and M. Blahó, Á. Egri, G. Kriska, I. Seres, and B. Robertson. 2010. Reducing the Maladaptive Attractiveness of Solar Panels to Polarotactic Insects. Conservation Biology. Published online: http://www3.interscience.wiley.com/journal/123369633/abstract?CRETRY=1&SRETRY=0

HTH (H. T. Harvey & Associates). 2013a. California Valley Solar Ranch Avian Activity Surveys: October 2011–October 2012. Prepared for High Plains Ranch II, LLC.

_____. 2013b. California Valley Solar Ranch Project Avian and Bat Protection Plan Annual Postconstruction Fatality Report, 16 August 2012 – 15 August 2013. Prepared for High Plains Ranch II, LLC.

_____. 2013c. California Valley Solar Ranch Avian and Bat Protection Plan 2013 Annual Bat Report. Prepared for High Plains Ranch II, LLC.

_____. 2013d. California Valley Solar Ranch Project Giant Kangaroo Rat (Dipodomys ingens) Relocation Final Report. December 2013. Prepared for High Plains Ranch II, LLC.

_____. 2013e. California Valley Solar Ranch Project 2012 Annual Status Report. Prepared for High Plains Ranch II, LLC.

_____. 2013f. California Valley Solar Ranch Semiannual Status Report—January to June 2013. October. Prepared for High Plains Ranch II, LLC.

_____. 2012. California Valley Solar Ranch Project Avian Fatality during Construction First Annual Report, September 2011 – September 2012. Prepared for High Plains Ranch II, LLC.

_____. 2006. Pallid Bat Habitat Use and Assessment for Feather River and Mt. Hough Ranger Districts, Plumas National Forest. Final report. Prepared for Plumas National Forest Service.

Johnston, D. S., and M. B. Fenton. 2001. Individual and population-level variability in diets of pallid bats (*Antrozous pallidus*) Journal of Mammalogy 82(2). [online]: http://www.jstor.org/pss/1383717.

LOA (Live Oak Associates). 2010a. Proposed Quantitative Sampling Program for Blunt-nosed Leopard Lizards and Other Sensitive Biotic Resources For the Panoche Valley Solar Farm. Prepared for Solargen Energy. Updated 2 February 2010.

_____. 2010b. Summary of Blunt-nosed Leopard Lizard Survey, Sampling and Monitoring Efforts for the Project Site. Prepared for Solargen Energy. 6 February 2010.

_____. 2009. (BNLL survey results, antelope squirrel sightings)

McCormick. 2013/2014. Blunt-nosed leopard lizard Surveys completed by Randi McCormick.

NAIP (National Agriculture Inventory Program). 2005. Aerial Photograph.

National Audubon Society. 2010. Christmas Bird Count data. http://www.audubon.org/bird/cbc/index.html.

NRCS (Natural Resources Conservation Service). 2006. Soil Survey for Fresno County, Western Part. [online]: http://www.nrcs.usda.gov/Internet/FSE_MANUSCRIPTS/california/CA653/0/fresno.pdf

_____. 2003 (soil survey review)

_____. 1969. Soil Survey for San Benito County. [online]: http://www.nrcs.usda.gov/Internet/FSE_MANUSCRIPTS/california/sanbenitoCA1969/sanbenitoCA1969.pdf

Orbach, D. N., and B. Fenton. 2010. Vision impairs the abilities of bats to avoid colliding with stationary obstacles. PLOS ONE 5(11):e13912.

Orloff, S. 2007. Migratory movements of California tiger salamander in upland habitat – a five-year study Pittsburgh, California. Report prepared for Bailey Estates, LLC.

Power Engineers. 2009. Panoche Valley Solar Farm Wetland Delineation Report. Prepared for Solargen Energy. 12 November 2009.

PVS. 2014. Letter to CDFW (supplemental BNLL study plan survey methodology).

_____. 2013. Letter to CDFW (updated BNLL study plan survey methodology).

Russo, D., L. Cistrone, L., and G. Jones. 2012. Sensory ecology of water detection by bats: a field experiment. PLOS ONE 7(10):e48144.

Sawyer, J. O., T. Keeler-Wolf, and J. M. Evens. 2009. A Manual of California Vegetation, Second Edition. Sacramento, CA: California Native Plant Society Press.

-300. http://link.springer.com/referenceworkentry/10.1007%2F978-90-481-3585-1_58 . Accessed December 2014.

Thelander, C. G. 1974. Nesting territory utilization by Golden Eagles (*Aquilo chrysaetos*) in California during 1974, Spec. Wild. Investigations. California Department of Fish and Game, Sacramento.

Trenham, P. C. and H. B. Shaffer. 2005. Amphibian upland habitat use and its consequences for population viability. Ecological Applications. Vol. 15, No 4, pp 1158-1168.

USACE (U.S. Army Corps of Engineers). 2008b. Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0). September 2008. U.S. Army Engineer Research and Development Center.

USDA (United States Department of Agriculture). 2014. Plant Growth Habitat Codes and Definitions. http://plants.usda.gov/growth_habits_def.html. Accessed December 2014.

USFWS (U.S. Fish and Wildlife Service). 2010a. San Joaquin Kit Fox (*Vulpes macrotis mutica)* 5-year Review: Summary and Evaluation. U.S. Fish and Wildlife Service, Sacramento Fish and Wildlife Office, Sacramento, California.

_____. 2010b. Giant Kangaroo Rat (*Dipodomys ingens)* 5-year Review: Summary and Evaluation. U.S. Fish and Wildlife Service, Sacramento Fish and Wildlife Office, Sacramento, California. February 2010.

_____. 2010c. Blunt-Nosed Leopard Lizard (*Gambelia sila)* 5-year Review: Summary and Evaluation. U.S. Fish and Wildlife Service, Sacramento Fish and Wildlife Office, Sacramento, California. February 2010.

_____. 2010d. San Joaquin kit fox 5-year review: summary and evaluation. Sacramento, California.

_____. 2010e. Comment on the Draft Environmental Impact Report, Panoche Valley Solar Farm.

_____. 2002. General Rare Plant Survey Guidelines. Prepared 1996 and revised July 2002 by Ellen A. Cypher.

_____. 1999. Standardized Recommendations for Protection of the San Joaquin Kit Fox Prior to or during Ground Disturbance. Technical Report. Sacramento, California.

_____. 1998. Recovery plan for upland species of the San Joaquin Valley, California. Region 1, Portland, OR. 319 pp.

_____. 1996. Interim Survey Guidelines to Permittees for Recovery Permits under Section 10(a)(1)(A) of the Endangered Species Act for the Listed Vernal Pool Branchiopods. April 19, 1996. Sacramento Field Office, Sacramento, California 8pp.

USFWS and CDFG. (U.S. Fish and Wildlife Service and California Department of Fish and Game). 2003. Interim guidance on conducting site assessments and field surveys for determining presence or a negative finding of the California Tiger Salamander. U.S. Fish and Wildlife Service. California/Nevada Operations Office, Sacramento.

Westphal, M. F. 2010. Recovery moves forward: Hollister BLM's conservation program in the Ciervo-Panoche Natural Area 2010. Abstract. San Joaquin Valley Natural Communities Conference, 25 March 2010, Bakersfield, CA.

Williams, D., P. Kelly, H. Bell, and L. O'Brien. 1996. Report of kit fox activities conducted under California Department of Fish and Game Memorandum of Understanding and U.S. Fish and Wildlife Service Subpermit WILLDF-12. Endangered Species Recovery Program, California State University, Stanislaus, Fresno, CA. 10 pp.

Williams, D. F., and K. S. Kliburn. 1991. Dipodomys ingens. Mammalian Species No. 377, pp. 17, 5 figs. Published 12 April 1991 by The American Society of Mammalogists.

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Aspen Environmental Group

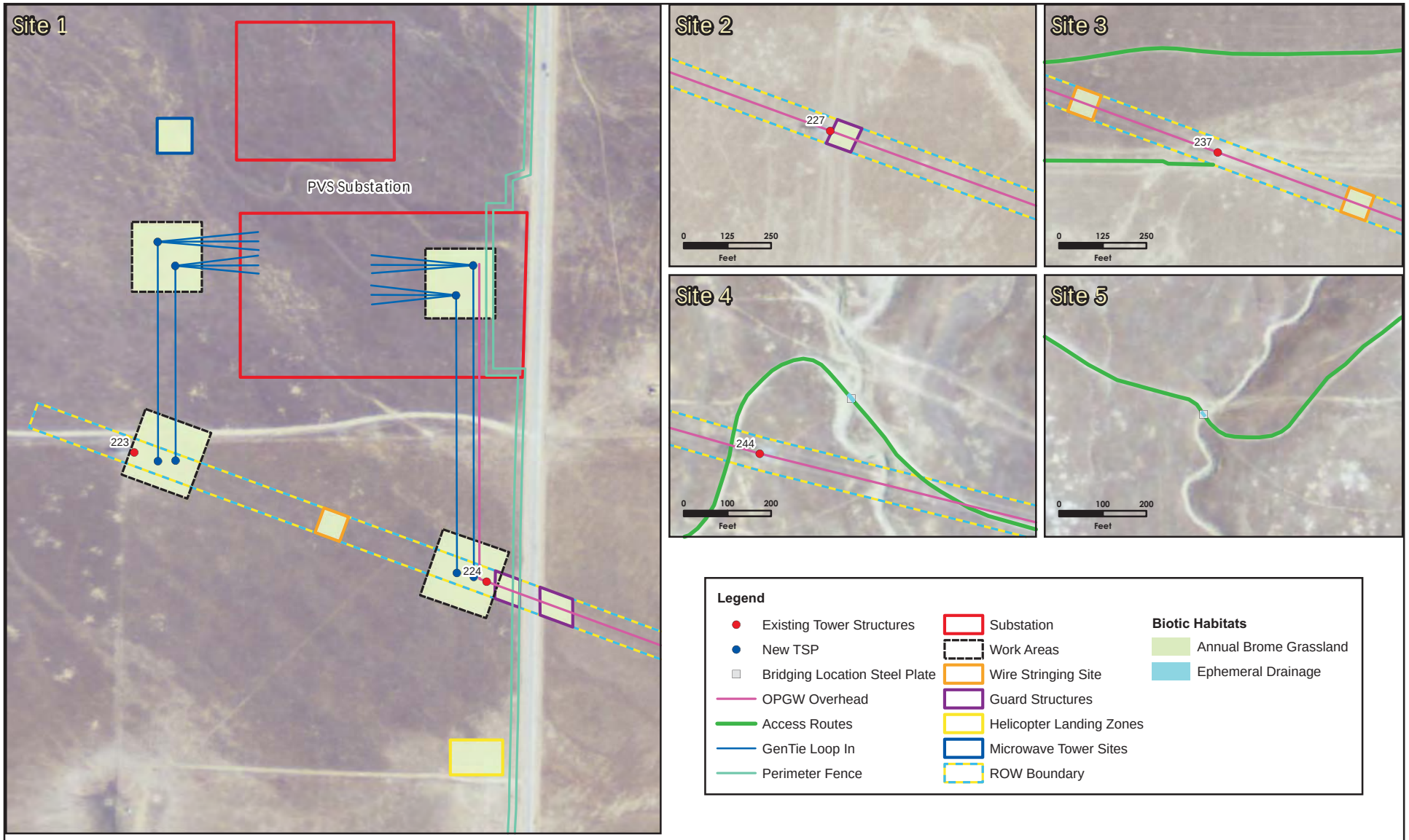
N 6,000 3,000 0 6,000 Feet

**Legend**

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

Figure C.6-1a

Biotic Habitat for PG&E Upgrades

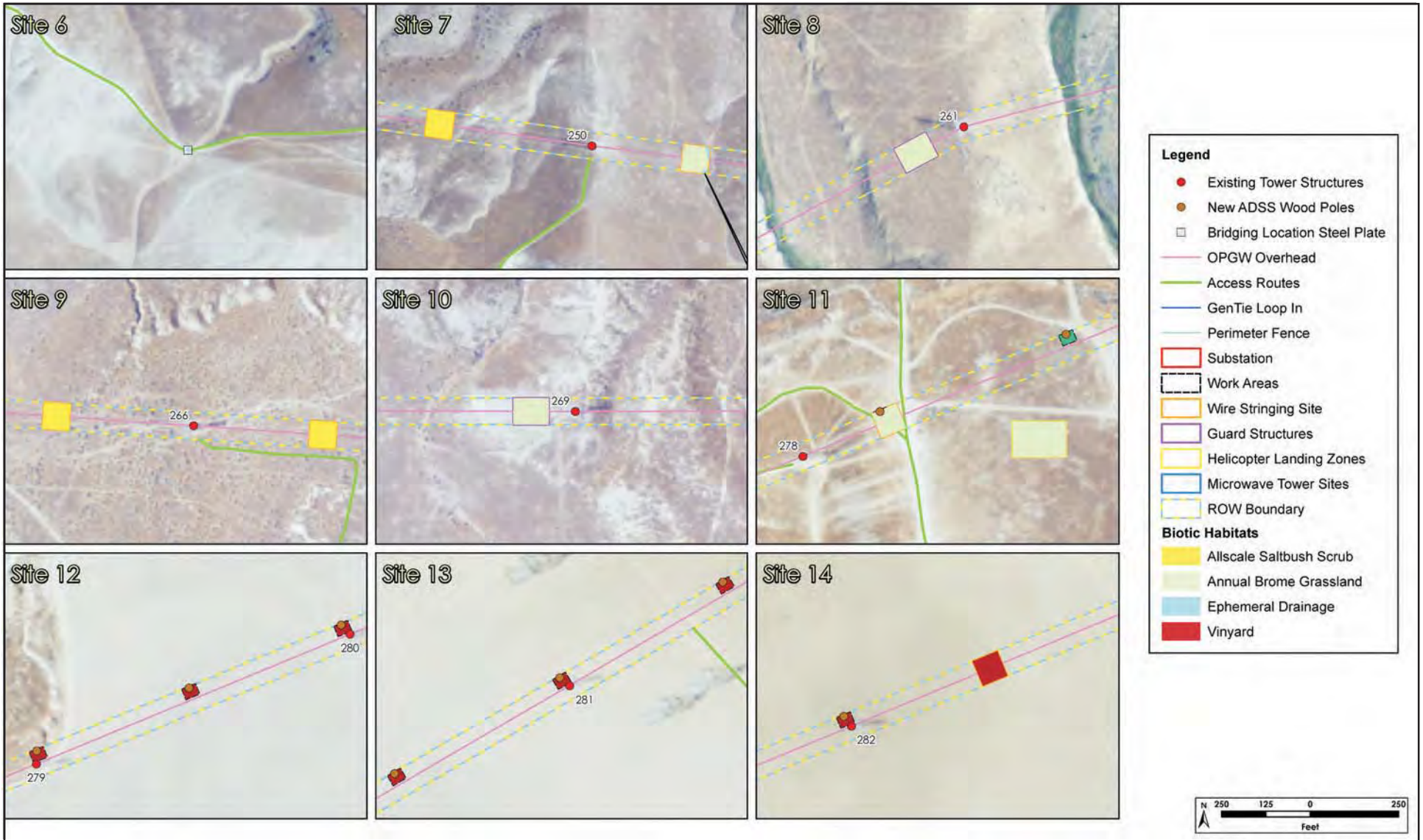



Aspen Environmental Group

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

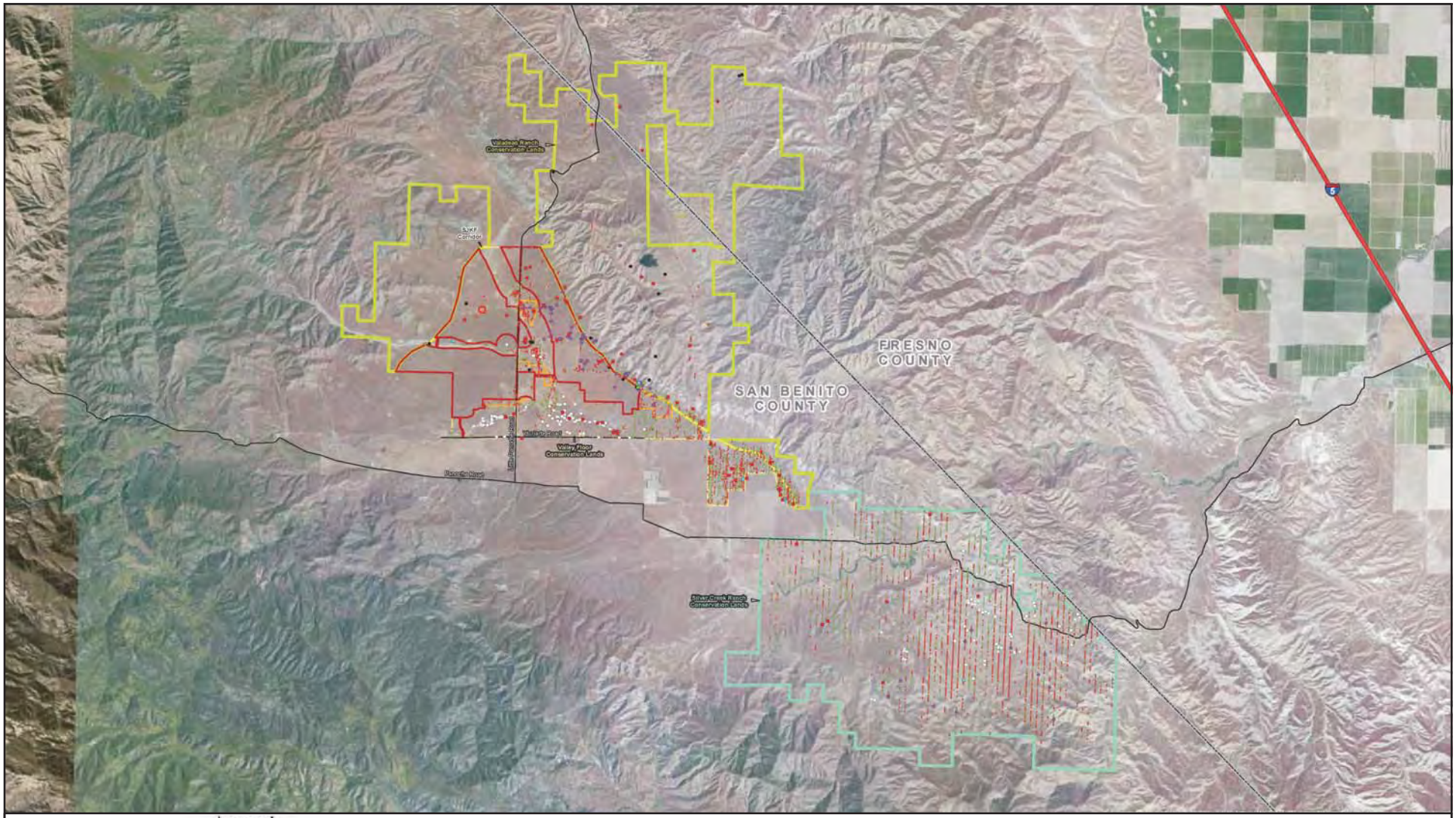
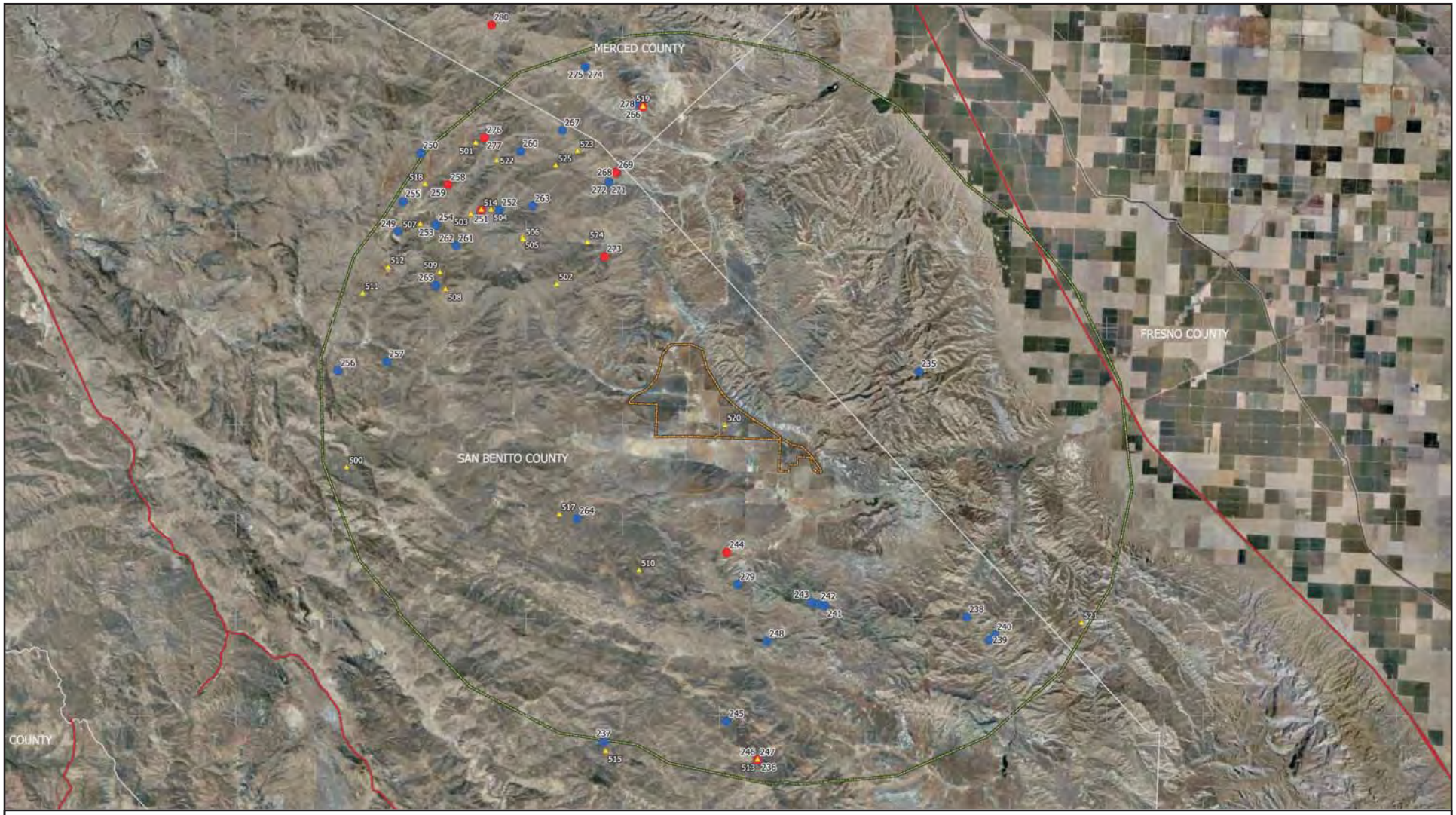



Figure C.6-2

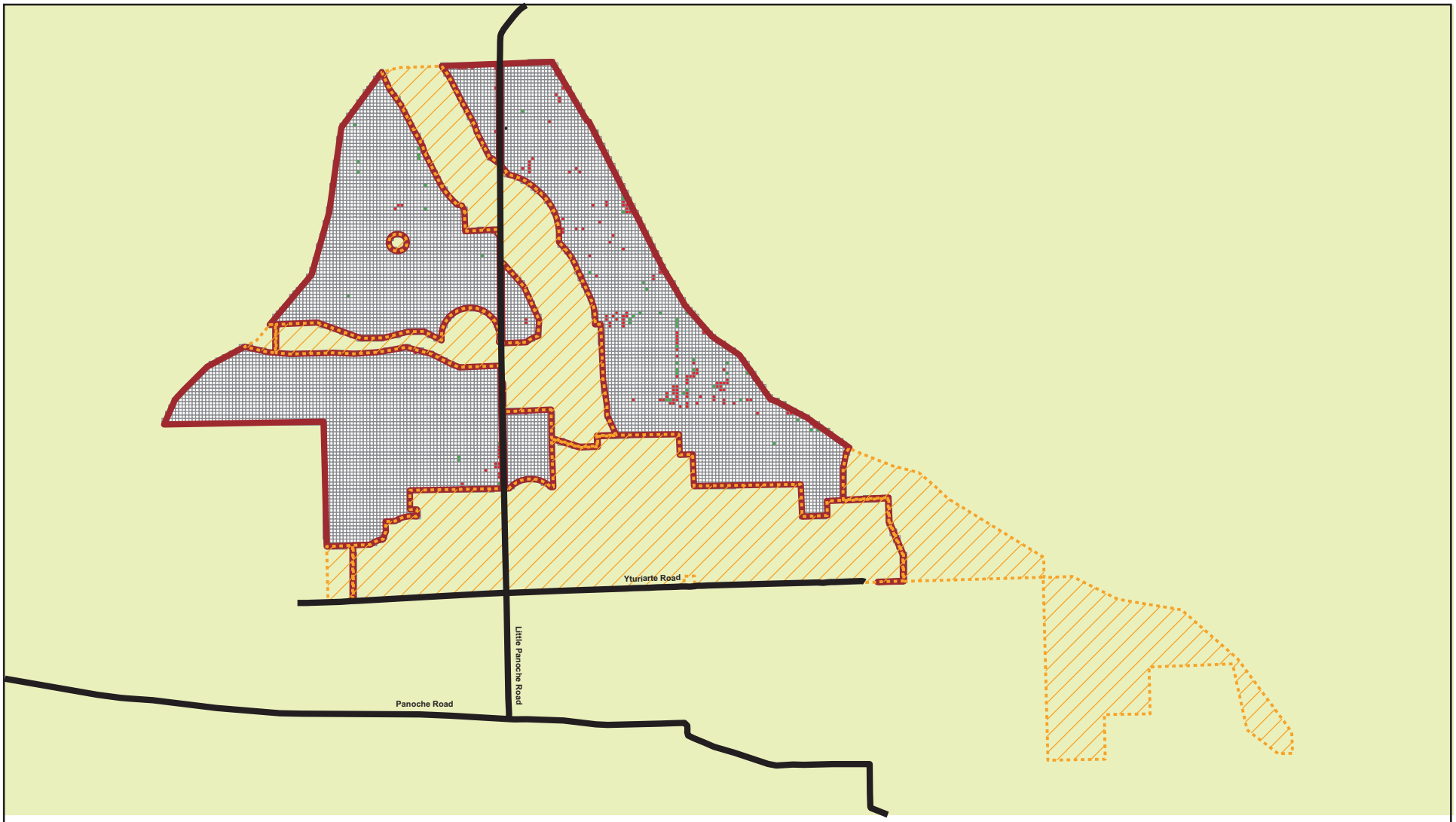
Biological Survey Data Overview




Aspen Environmental Group

Figure C.6-3

Golden Eagle Nesting Survey Results




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

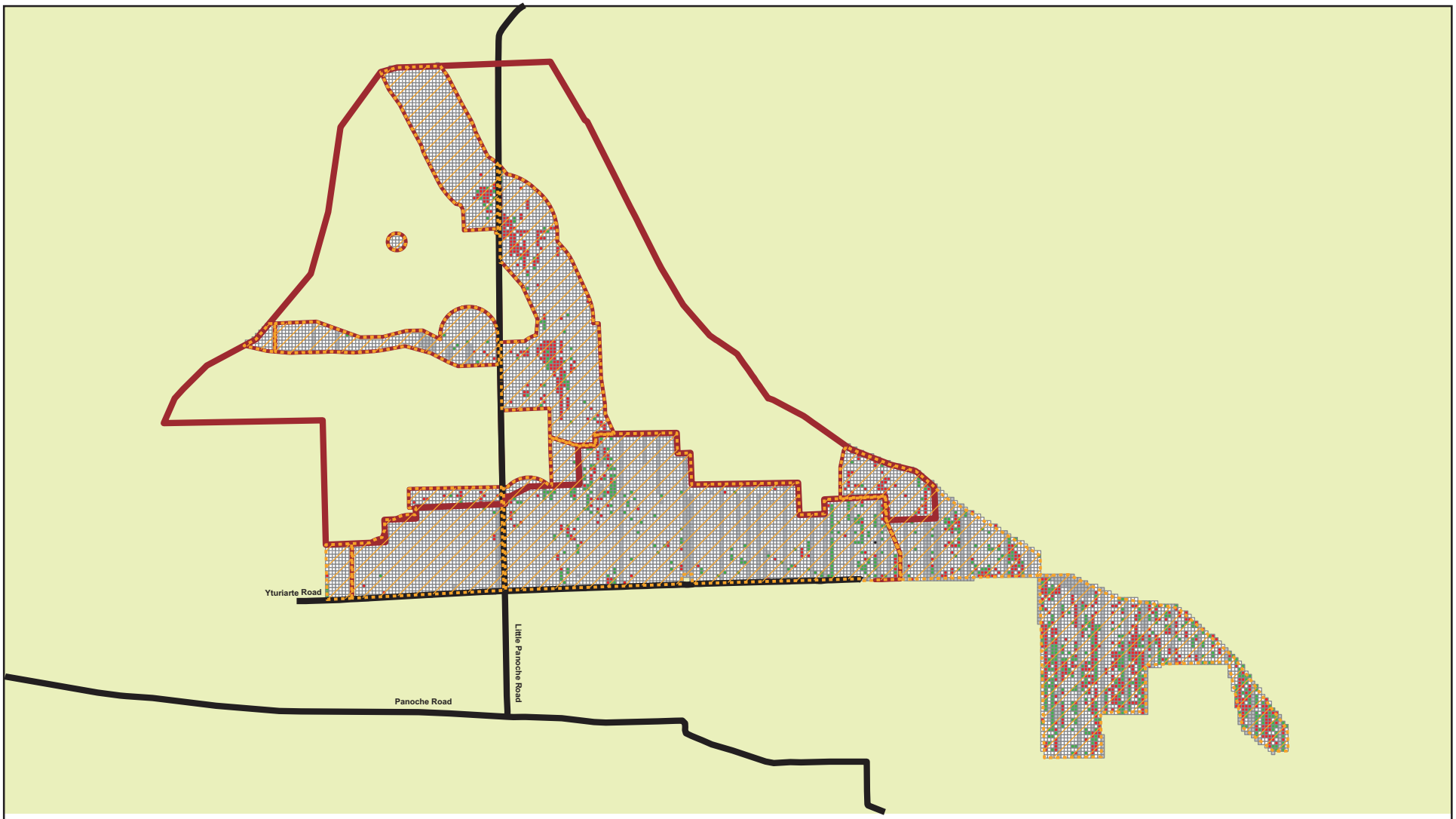
Figure C.6-4a

2013 Giant Kangaroo Rat Observations
Revised Project Footprint

December 2014

Draft SEIR

**11941**




Aspen Environmental Group

N

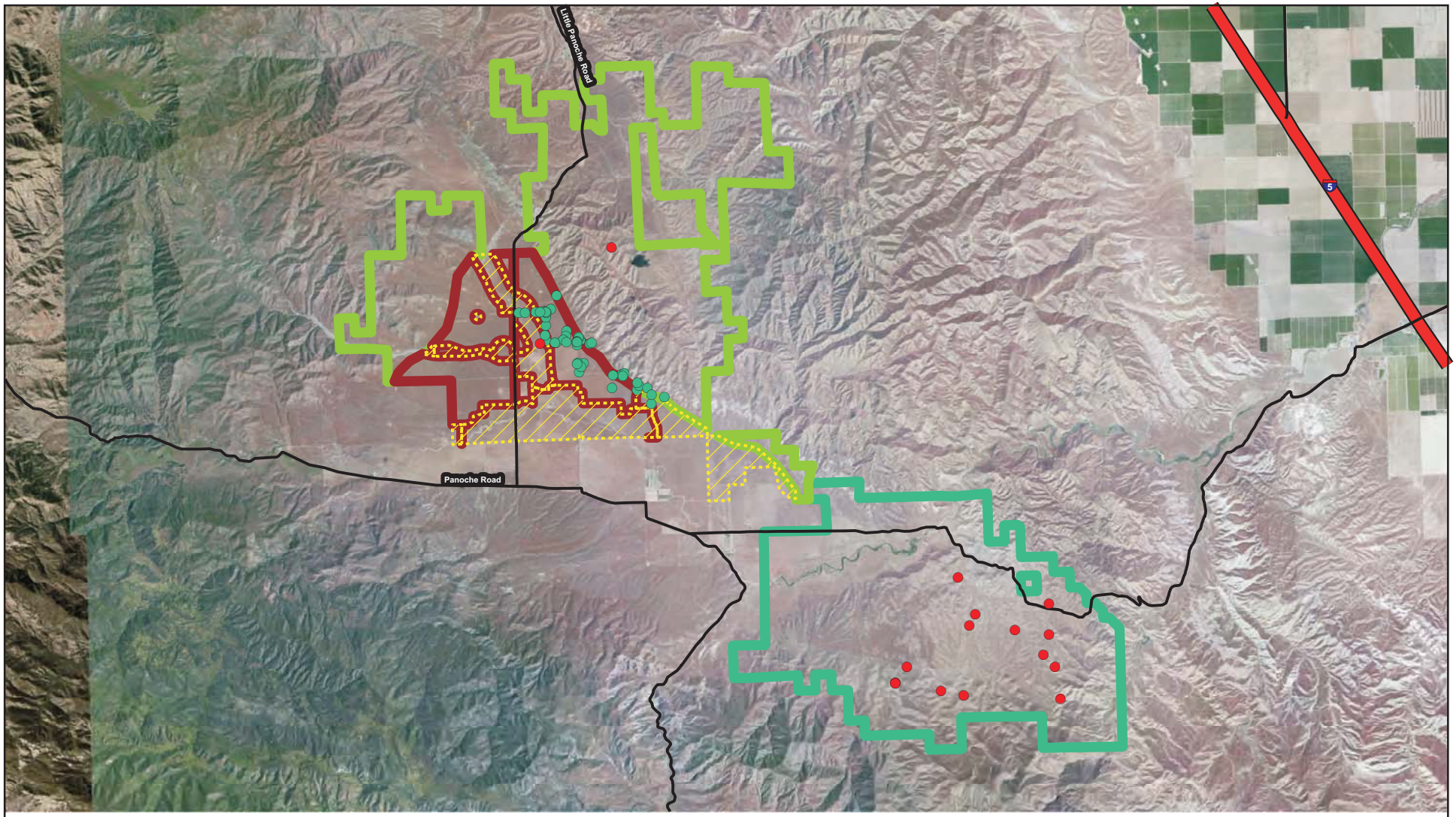
0 1,250 2,500
Feet

**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**

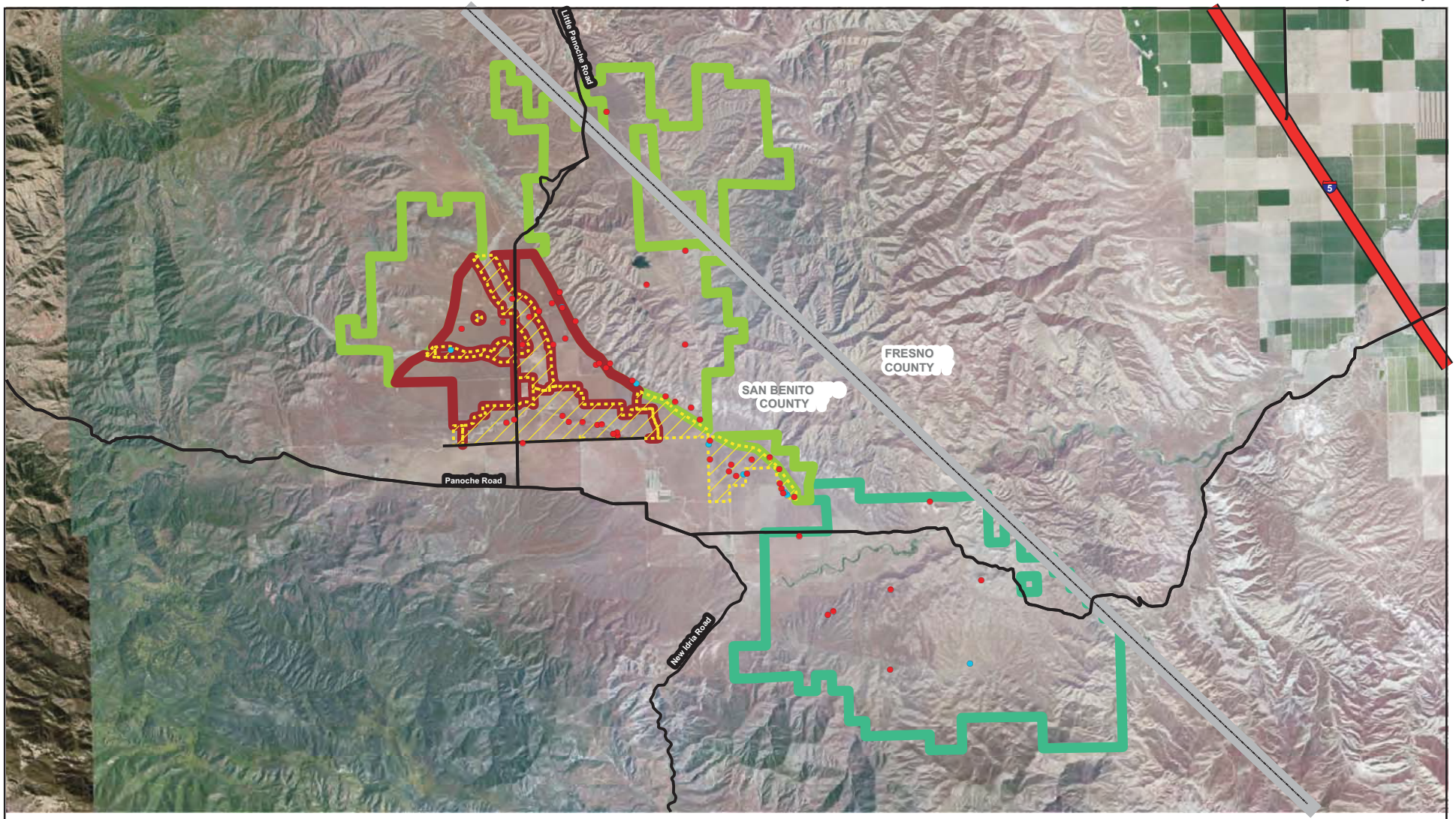
- Project Footprint
- Valley Floor Conservation Lands
- Valadeao Ranch Conservation Lands
- Silver Creek Ranch Conservation Lands

**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

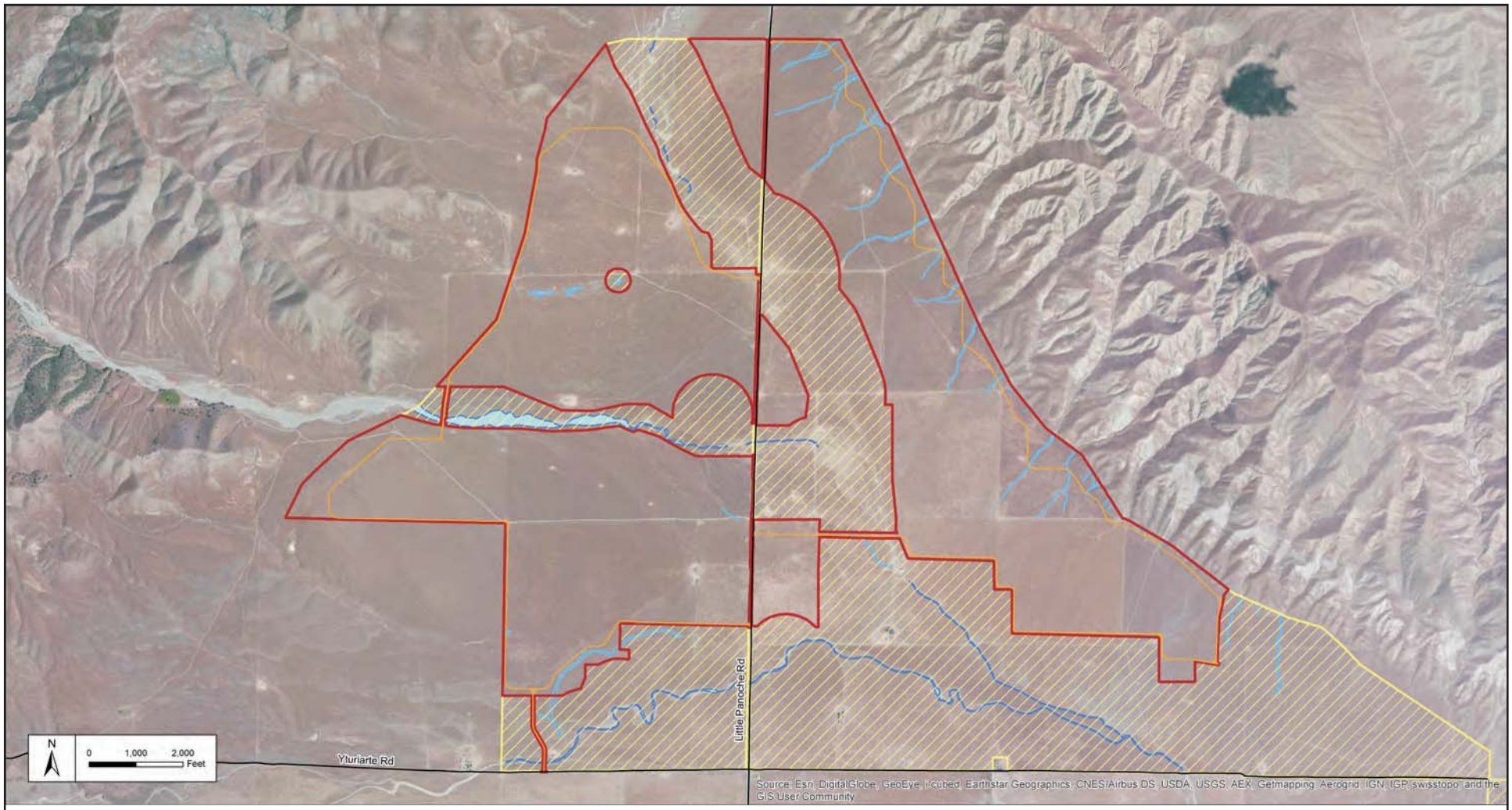
Aspen Environmental Group

N

0 3,500 7,000 Feet

Figure C.6-6

San Joaquin Kit Fox Den Locations



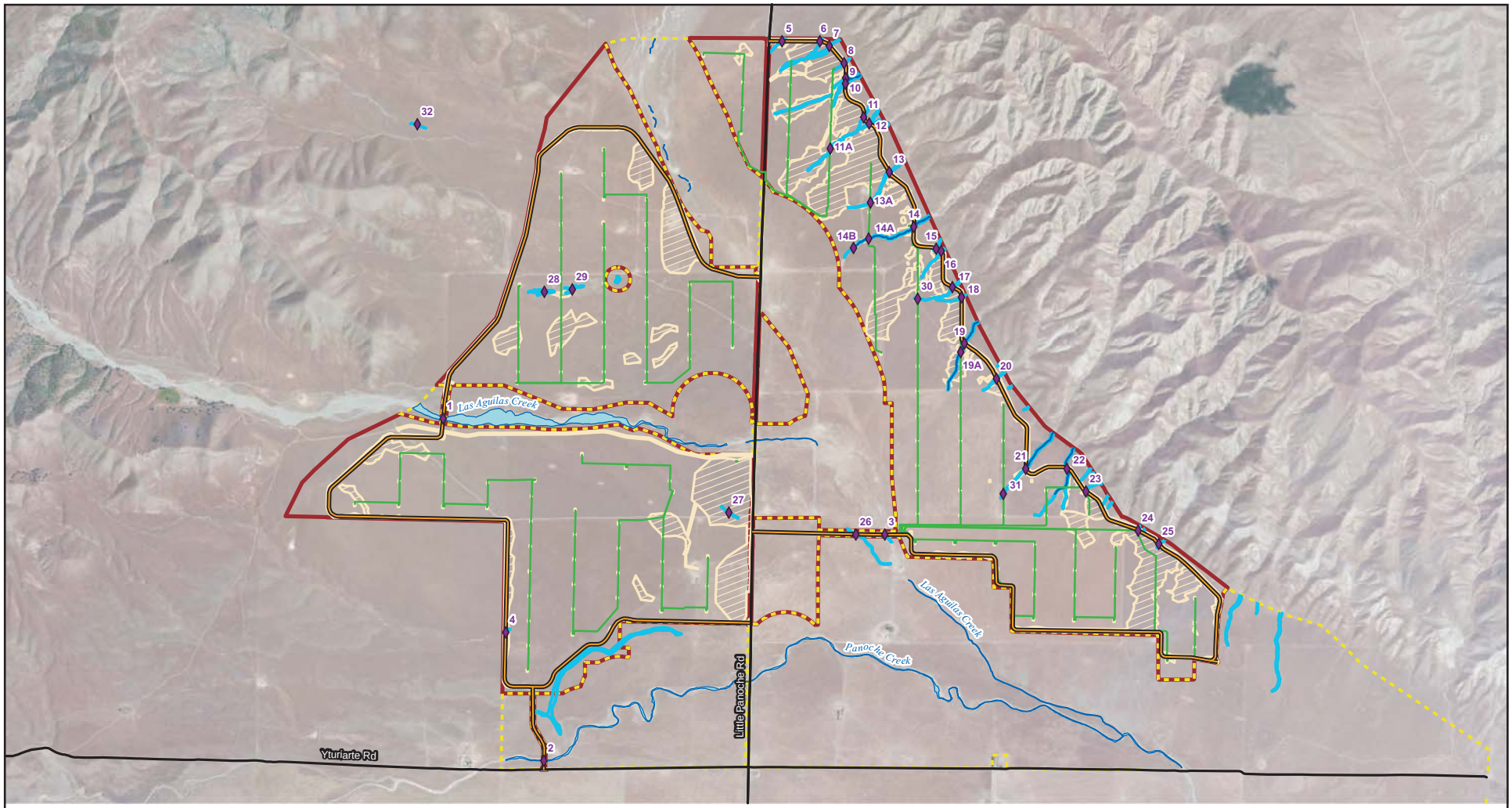

Aspen Environmental Group

**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

# C.7 Cultural and Paleontological Resources

This section analyzes whether the Revised Project and PG&E Upgrades would result in any new significant impacts to cultural and paleontological resources that were not previously identified and disclosed in the 2010 Final EIR, or whether there would be a substantial increase in the severity of any previously identified impacts to these resources.

Two reports were prepared by Natural Investigations Company in 2014 for the PG&E Upgrades; these reports supported the impact assessment presented in this section. The first is the "Cultural Resources Inventory for the Panoche Valley Solar Farm Project Telecommunication Services, San Benito and Fresno Counties" (NIC, 2014a) and the second is "Cultural Resources Supplemental Letter Report, Panoche Valley Solar Farm Project Telecommunication Services" (NIC, 2014b).

## C.7.1 Environmental Setting

The following section describes any changes to the environmental setting that have occurred since 2010. Section C.7.1.1 describes any changes to the environmental setting that was presented in the 2010 Final EIR. Section C.7.1.2 describes the environmental setting for the area surrounding the PG&E transmission system upgrades.

### C.7.1.1 Revised Solar Project

The cultural and paleontological environmental setting for the Revised Project site has remained substantially unchanged since approval of the 2010 Final EIR. The regional setting for cultural and paleontological resources remains the same as described in the 2010 Final EIR. No new cultural or paleontological sites have been identified within the project area. All ground disturbance for the Revised Project would occur within the previously surveyed study area for the Approved Project. The paleontological sensitivity of the underlying geology remains the same. The potential for encountering previously unidentified cultural or paleontological resources remains the same as analyzed in the 2010 Final EIR.

### C.7.1.2 PG&E Upgrades

The PG&E Upgrades associated with the Revised Project include installation of approximately 17 miles of optical ground wire (OPGW) primarily on existing transmission towers between the Panoche Valley Solar Project site and the existing Panoche Substation in Fresno County. The telecommunications system upgrades also include construction of up to three new microwave communication towers and upgrades to an existing microwave tower. The PG&E transmission system upgrades would include eight new transmission structures that are required to tie the existing Moss Landing–Panoche 230 kV transmission line into the proposed PG&E switchyard, located within the Revised Project site boundaries. The new transmission structures would be installed by PG&E after site preparation is completed by the Applicant.

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, the Call Mountains (west of the Panoche Valley), Panoche Mountain (east of the Panoche Valley), and the area surrounding the Helm Substation (approximately 13 miles southwest of the City of Fresno). Cultural and Paleontological Resources Assessments were prepared for the areas affected by the PG&E Upgrades (NIC, 2014a, b).

**Cultural Resources.** The cultural resources study area totals approximately 523 acres. The non-continuous study area includes a 500-foot buffer around each of 34 proposed work areas along the 17-mile transmission line corridor (AT&T cable site, 12 temporary pull/splice sites, three temporary landing zones,

eight temporary guard structures, nine ADSS wood pole work areas, and OPGW underground installation area) and around the offsite microwave towers on Call Mountain, on Panoche Mountain and at the Helm Substation (NIC, 2014a, b).

Cultural resources literature searches were conducted at two branches of the California Historical Resources Information System the Northwest Information Center and the Southern San Joaquin Valley Information Center. These searches indicate a total of 19 cultural resources have been previously recorded within a 0.25-mile search radius extending beyond the study described above. Of these 19 previously recorded resources, seven are located in the non-continuous study area for this document.

A cultural resources field survey was performed for the study area for the PG&E Upgrades. No cultural resources were newly identified. The Call Mountain microwave tower area, the Helm Substation microwave tower area, the Panoche Mountain microwave tower area, and the land encompassed within the Panoche Substation and adjacent power plants (Panoche Energy Center and Starwood-Midway) were not surveyed due, in part, to lack of access, and after results from the records searches and Sacred Lands File searches indicated that field surveys would not be necessary (NIC, 2014a, b).

Six of the seven known resources within the study area are not eligible for the NRHP or CRHR. Cultural resources that have been determined ineligible for the NRHP and CRHR are not required to be avoided by project design or implementation. Four of the ineligible resources are more than 28 meters (92 feet) from the proposed improvement areas, one is partially adjacent, and one (PG&E's Moss Landing–Panoche 230 kV transmission line) is overlapped by the proposed improvement areas. The seventh resource within the study area remains unevaluated (P-10-000046, CA-FRE-46) and would be avoided by the planned telecommunication improvements (NIC, 2014a, b).

The Native American Heritage Commission (NAHC) was contacted on September 15, 2014 and October 14, 2014 (specifically concerning the Panoche Mountain microwave tower site) regarding a search of their Sacred Lands File for traditional cultural resources within or near the cultural resources study area. Replies were received from the NAHC for Fresno County and San Benito County on September 22 and October 27, 2014, respectively, stating that the searches failed to indicate the presence of Native American sacred lands or traditional cultural properties in the immediate vicinity of the PG&E Upgrades. A response from the NAHC regarding a Sacred Lands File search for the APE associated with the Panoche Mountain microwave tower site was received on October 21, 2014 which indicated that there was no presence of Native American sacred lands or traditional cultural properties in the immediate vicinity of the project area. The Applicant's consultant then contacted each of the Native American tribes or individuals provided by the NAHC for Fresno County and San Benito County, in letters dated September 25 and October 28, 2014, respectively. Follow-up telephone calls were made on October 10 and November 13, 2014 (NIC, 2014a, b).

**Paleontological Resources.** A Paleontological Settings Memorandum for the PG&E transmission line ROW was prepared by Natural Investigations Co. (NIC, 2014a). Portions of the PG&E ROW are underlain by sediments that are considered to have a moderate to high potential for sensitive paleontological resources. These include the Tulare Formation, Older Alluvium, Moreno Shale. Ground disturbing activities in portions of the ROW underlain by these sediments have the potential to impact paleontological resources. Descriptions of these formations are summarized below (NIC, 2014a).

Geologic maps indicate the Tulare Formation underlies the belt of low foothills along the northeast and southeast borders of the Panoche Valley, and also forms the edge of the alluvial fan along the western edge of the San Joaquin Valley north and south of Panoche Creek (Dibblee and Minch 2007a, 2007b, 2007c). The formation is crossed by the transmission line ROW in Sections 19, 20 and 21 of T15S, R11E

as it heads east from the Panoche Valley. This formation is known to contain highly significant vertebrate fossils and is considered to have a high paleontological potential. Through much of the San Joaquin Valley the Tulare Formation is generally found at depth below the Riverbank Formation (Lettis and Unruh, 1991), but along the margins of the Coast Ranges uplift has brought the formation to the surface.

Outcroppings of older surficial sediments Older Alluvium of late Pleistocene age are situated along the transmission line ROW across the southern base of the Panoche Hills (Dibblee and Minch 2007b, 2007c). This Older Alluvium was deposited between the middle to late Pleistocene (roughly 500,000 to 50,000 years ago) and is generally dissected by recent streams. This rock unit is known to contain significant fossils elsewhere in California, principally southern California, and has therefore been assigned a moderate paleontologic sensitivity for the project area. The Older Alluvium may have been exposed by streams between the ridges at the base of the hills where it may be difficult to distinguish from younger alluvial deposits or it may be buried by the younger alluvial deposits and modern soils at a depth of at least five feet.

A short segment of the transmission line ROW crosses the southern reaches of belts of the Moreno Shale that interfinger with the Older Alluvium in Sections 17, 18, and 20 of T15S, R12E before reaching the San Joaquin Valley (Dibblee and Minch, 2007b). This sediment has yielded highly significant terrestrial and marine vertebrate fossils and is considered to have a high paleontological potential. Fossil specimens have been found on or near the surface of the uplifted Cretaceous strata, described in this otherwise grassy foothill area as badlands.

A review of records maintained by the University of California Museum of Paleontology (UCMP, 2014), the PaleoBiology Database (n.d.), Fossilworks (n.d.), fossil lists, published and unpublished literature indicate that no known paleontologic resource localities are recorded in the PG&E ROW. Significant fossil specimens are known, however, from the project vicinity. Along the northern edge of the Panoche Valley north of the transmission line ROW in Section 13 of T15S, R10E, a horse fossil has been recorded from surface rocks of the Tulare Formation. Vertebrate fossils, including bear, horse, camel, and deer have also been recovered from the Tulare Formation in Little Panoche Valley to the north. Nearly 50 localities are listed in the UCMP database for the Tulare Formation in central California.

No significant fossils have been reported from the Panoche Formation in the vicinity of the PG&E alignment, although highly significant terrestrial and marine vertebrate fossils have been found in the Panoche Hills and Tumey Hills in the exposures of the neighboring Moreno Shale. Seventy-seven Moreno Shale localities are listed in the UCMP database in Fresno County, although none are currently known to be in the transmission line ROW. Elsewhere in California, older Pleistocene alluvial sediments (Qoa) have been reported to yield significant fossils of extinct animals from the Ice Age.

## C.7.2 Applicable Regulations, Plans, and Standards

No changes have occurred to the regulatory setting for cultural and paleontological resources since 2010.

## C.7.3 Environmental Impacts and Mitigation Measures

This section addresses whether the changes to the Approved Project would result in any new significant cultural/paleontological impacts or increase the severity of previously identified cultural/paleontological impacts. Section C.7.3.1 restates the significance criteria used in 2010 to determine whether any project changes result in any new or more severe significant impacts. Section C.7.3.2 summarizes the impacts and mitigation measures presented in the 2010 Final EIR for ease of reference. Section C.7.3.3 presents the updated impact analysis for the Revised Project, and Section C.7.3.4 addresses one change to an

adopted mitigation measure. Section C.7.3.5 addresses the environmental impacts that would occur as a result of the PG&E transmission system upgrades, and Section C.7.3.6 describes cumulative impacts.

## C.7.3.1 Significance Criteria

The following significance criteria for cultural and paleontological resources were derived from the Environmental Checklist in CEQA Appendix G. These significance criteria were used for the 2010 Final EIR and are also applied to this Supplemental EIR. They have been amended or supplemented, as appropriate, to address the nature of solar photovoltaic facilities and transmission line upgrades in general, and the full range of potential impacts related to this Revised Project in particular. An impact of the Revised Project and PG&E Upgrades would be considered significant and would require mitigation if it would:

- Cause a substantial adverse change in the significance of a historic resource (CEQA Guidelines 15064.5)
- Cause a substantial adverse change in the significance of an archaeological resource (CEQA Guidelines 15064.5)
- Directly or indirectly destroy a unique paleontological resource or site or unique geological feature
- Disturb any human remains, including those interred outside of formal cemeteries

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

## C.7.3.2 Approved Project Impacts and Mitigation Measures

Table C.7-1 presents a summary of the impacts and mitigation measures applicable to the Approved Project.

**Table C.7-1. Summary of Impacts and Mitigation: Cultural and Paleontological Resources**

| Impact No. and Text | Mitigation Required | CEQA Conclusion |
|---|---|---|
| Impact CR-1: Construction of the project may cause an adverse change to known historical resources or unique archaeological resources. | None | No Impact |
| Impact CR-2: Construction of the project may cause an adverse change to buried prehistoric and historical archaeological sites or buried Native American human remains. | CR-2.1: Archaeological monitoring during construction<br>CR-2.2: Treat unknown archaeological resources accidentally discovered during construction | Class II |
| Impact CR-3: Operation of the project or decommissioning activities may impact previously unidentified historic or archaeological resources. | CR-2.3: Inadvertent discovery of human remains<br>CR-2.4: Implement worker environmental awareness program | Class II |
| Impact CR-4: Contribute to cumulatively considerable effects on cultural resources. | | Class II |
| Impact PA-1: Construction of the project would potentially destroy or disturb significant paleontological resources. | PA-1.1: Implement site-specific paleontological recovery<br>PA-1.2: Paleontological monitoring during construction for unknown and accidentally discovered paleontological resources | Class II |

**Table C.7-1. Summary of Impacts and Mitigation: Cultural and Paleontological Resources**

| Impact No. and Text | Mitigation Required | CEQA Conclusion |
|---|---|---|
| Impact PA-2: Contribute to cumulatively considerable effects on paleontological resources. | PA 1.1: Implement site-specific paleontological recovery<br>PA 1.2: Paleontological monitoring during construction for unknown and accidentally discovered paleontological resources | Class II |

## C.7.3.3 Revised Solar Project Impacts

Four cultural and paleontological resources impacts are addressed in this section; cumulative impacts are evaluated in Section C.7.3.6.

***Impact CR-1: Construction of the project may cause an adverse change to known historical resources or unique archaeological resources (No Impact)***

No new historical resources or unique archaeological resources have been identified in the study area since 2010. Therefore, as described in the 2010 Final EIR, like the Approved Project, the Revised Project would have no impact on known historical or archaeological resources.

***Impact CR-2: Construction of the project may cause an adverse change to buried prehistoric and historical archaeological sites or buried Native American human remains (Class II)***

Although the area of ground disturbance is reduced under the Revised Project, the possibility of accidental discovery and disturbance of unknown archaeological resources or Native American human remains still exists. This impact would remain less than significant with implementation of the same previously adopted mitigation for the Approved Project (Class II).

***Impact CR-3: Operation of the project or decommissioning activities may impact previously unidentified historic or archaeological resources (Class II)***

The Revised Project occupies a smaller area than the Approved Project, and involves installation (and subsequent removal during decommissioning) of fewer solar panels. However, operation and decommissioning activities could still affect previously unidentified remains. This impact would remain less than significant with implementation of the same previously adopted mitigation for the Approved Project (Class II).

***Impact PA-1: Construction of the project would potentially destroy or disturb significant paleontological resources (Class II)***

Although the area of ground disturbance is reduced under the Revised Project, the potential for destruction or disturbance of significant paleontological resources still exists. This impact would remain less than significant with implementation of the same previously adopted mitigation for the Approved Project (Class II).

## C.7.3.4 Changes to Adopted Mitigation Measures

The Applicant has proposed changes to one mitigation measure adopted from the 2010 Final EIR for cultural and paleontological resources. The Applicant suggested change to Mitigation Measure CR-2.1 is discussed below. Mitigation Measures and APMs not shown in this section have not changed and are presented for reference only in Appendix 3. The changes to Mitigation Measure CR-2.1 are acceptable

because the extent of monitoring will be directed by the County and will be adequate to identify and evaluate resources discovered during construction.

**MM CR-2.1** **Conduct cultural resource monitoring during construction.** A professional archaeologist shall monitor ~~all~~ subsurface construction disturbance as required by the County (with the exception of direct-driven support pipes beneath PV panels). The number of monitors present per day will be at the discretion of the County Department of Planning and Building, but shall be proportional to the amount of equipment actively excavating and shall reflect knowledge gained over the course of the project. Archaeological monitoring shall be directed by a Registered Professional Archaeologist familiar with the types of archaeological resources that could be encountered within the project area. At locations sensitive for Native American remains (i.e., within 200 meters of water courses), a Native American monitor shall be present. The County Department of Planning and Building shall ensure compliance with and effectiveness of the cultural resources monitoring program. Any unanticipated discovery shall be documented by the archaeologist on a Department of Parks and Recreation Primary Record and Archaeological Site Record (DPR 523) and further treated in accordance with MM CR-2.2 below. The Applicant shall fully fund all monitoring and documentation activities.

## C.7.3.5 PG&E Upgrades Impacts

The temporary and permanent cultural and paleontological resources impacts of the PG&E Upgrades are analyzed in this section. This analysis is based on the impact statements defined for the solar project, but only Impacts CR-2 and PA-1 apply to the PG&E Upgrades and are evaluated. Two of the impacts addressed for the solar project would not occur as a result of construction or operation of the PG&E Upgrades due to the lack of identified historical and unique archaeological resources and the negligible amount of ground disturbance associated with operation and decommissioning of the PG&E Upgrades. The following two impacts would not occur as a result of construction, operation, or decommissioning of the PG&E Upgrades:

- Impact CR-1: Construction of the project may cause an adverse change to known historical resources or unique archaeological resources
- Impact CR-3: Operation of the project or decommissioning activities may impact previously unidentified historic or archaeological resources

***Impact CR-2: Construction of the project may cause an adverse change to buried prehistoric and historical archaeological sites or buried Native American human remains (Class III)***

Although the PG&E Upgrades would involve only a small amount of ground disturbance (such as for preparation of pulling/stringing sites and installation of new ADSS wood poles and interconnection TSPs), the possibility of accidental discovery and disturbance of unknown archaeological resources or Native American human remains still exists. This risk would be reduced by AMM CR-1 (Pre-Construction Worker Cultural Resources Training), AMM CR-2 (Resource Avoidance), AMM CR-3 (Construction Monitoring), AMM CR-4 (Unanticipated Discovery of Cultural Deposits), and AMM CR-5 (Unanticipated Discovery of Human Remains). These measures would be implemented as part of the proposed PG&E Upgrades. The full text of these Avoidance & Minimization Measures is presented in Table B-12 (Section B.11). This impact would be less than significant (Class III).

***Impact PA-1: Construction of the project would potentially destroy or disturb significant paleontological resources (Class III)***

Although the area of ground disturbance is minor under the PG&E Upgrades, the potential for destruction or disturbance of significant paleontological resources still exists. This risk would be reduced by AMM CR-1 (Pre-Construction Worker Cultural Resources Training), AMM CR-2 (Resource Avoidance), AMM CR-3 (Construction Monitoring), AMM CR-4 (Unanticipated Discovery of Cultural Deposits). These measures would be implemented as part of the proposed PG&E Upgrades. The full text of these Avoidance & Minimization Measures is presented in Table B-12 (Section B.11). This impact would be less than significant (Class III).

### C.7.3.6 Cumulative Impacts

The projects that have been constructed or proposed in the area of potential cumulative effects have changed since 2010, as described in Section D of this SEIR. Ground disturbance is reduced under the Revised Project, and no new historical resources or unique archaeological resources have been identified. Ground disturbance for the PG&E Upgrades would be very minor. However, the possibility of accidental discovery and disturbance of previously unidentified cultural and paleontological resources still exists. If encountered, these previously unidentified resources are expected to be similar to other buried resources throughout the region. Therefore, impacts to previously unidentified resources under the Revised Project or the PG&E Upgrades could combine with similar impacts from other projects that have been constructed or proposed in the area of potential cumulative effects. Other projects generally implement standard mitigation or avoidance measures similar to those described for the Revised Project and the PG&E Upgrades. Therefore the cumulative impact would be less than significant.

## C.7.4 Summary of Impacts

The significance of impacts for cultural and paleontological resources for the Revised Project and for the PG&E Upgrades is summarized in Sections C.7.4.1 and C.7.4.2. Section C.7.4.3 summarizes the impacts of all project components.

### C.7.4.1 Revised Solar Project

The impacts for cultural and paleontological resources summarized in Table C.7-1 remain accurate. With implementation of mitigation, the Revised Project will have the same less than significant impacts on cultural and paleontological resources as the Approved Project (Class II).

### C.7.4.2 PG&E Upgrades

The PG&E Upgrades will also result in similar potential adverse impacts to previously unknown archaeological sites, buried Native American human remains, and paleontological resources as the Approved Project. This risk would be reduced through implementation of AMMs CR-1 through CR-5, which would be implemented as part of the upgrades. All cultural and paleontological impacts related to the PG&E Upgrades would be less than significant (Class III).

### C.7.4.3 Overall Significance of Impacts

The overall impacts of the solar project and the PG&E upgrades would be less than significant with implementation of previously adopted mitigation and AMMs (Class II). All solar project impacts to cultural and paleontological resources would be less than significant with implementation of previously

adopted mitigation (Class II). All PG&E upgrades impacts to cultural and paleontological resources would be less than significant with implementation of AMMs. Cumulative impacts related to cultural and paleontological resources would be less than significant with incorporation of previously adopted mitigation and AMMs.

## C.7.5 References

NIC (Natural Investigations Company). 2014a. Cultural Resources Inventory for the Panoche Valley Solar Farm Project Telecommunication Services, San Benito and Fresno Counties, California. Citrus Heights, California. Prepared for Energy Renewal Partners, LLC. 13 November 2014.

_____. 2014b. Cultural Resources Supplemental Letter Report, Panoche Valley Solar Farm Project Telecommunication Services, Fresno County, California. Citrus Heights, California. Prepared for Energy Renewal Partners, LLC. 24 November 2014.

# C.8 Geology, Mineral Resources, and Soils

This section analyzes whether the Revised Project and PG&E Upgrades would result in any new significant impacts to geology, mineral resources, and soils that were not previously identified and disclosed in the 2010 Final EIR, or whether there would be a substantial increase in the severity of any previously identified impacts to geology, mineral resources, and soils. As part of this analysis, the section considers changes to the existing geology, minerals, and soils in the study area, changes to the ground disturbance footprint of the Approved Project, and changes to potential geologic, mineral, and soil resource impacts and related mitigation measures.

Data sources that were used for this analysis include California Geological Society regulatory maps (CGS, 2014), soil survey data from the Natural Resources Conservation Service (NRCS, 2014), and geologic data from the United States Geological Society (USGS, 2005).

## C.8.1 Environmental Setting

This section describes changes to the environmental setting that have occurred since 2010. Section C.8.1.1 describes any changes to the environmental setting that was presented in the 2010 Final EIR. Section C.8.1.2 describes the environmental setting for the area surrounding the PG&E transmission system upgrades.

### C.8.1.1 Revised Solar Project

The geology, mineral resources, and soils environmental setting for the Revised Project site has remained substantially unchanged since approval of the 2010 Final EIR. No new geologic hazards have been identified. No new soil hazards (expansive, corrosive, or liquefiable soils) have been identified. No new minerals of local or regional importance have been designated. No new development has occurred, and no major new structures have been built in the valley.

In the Revised Project, the total acreage of graded areas has roughly doubled from 200 acres to 392 acres. The area of total permanent disturbance has decreased from 2,203 acres to 1,888 acres.

### C.8.1.2 PG&E Upgrades

The PG&E Upgrades associated with the Revised Project include installation of approximately 17 miles of optical ground wire (OPGW) on existing transmission towers between the Panoche Valley Solar Project site and the existing Panoche Substation in Fresno County. The telecommunications system upgrades also include construction of up to three new microwave communication towers and upgrades to an existing microwave tower. The PG&E transmission system upgrades would include eight new transmission structures that are required to tie the existing Moss Landing–Panoche 230 kV transmission line into the proposed PG&E switchyard, located within the Revised Project site boundaries. The new transmission structures would be installed by PG&E after site preparation is completed by the Applicant.

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, the Call Mountains (west of the Panoche Valley), Panoche Mountain (east of the Panoche Valley), and the area surrounding the Helm Substation (approximately 13 miles southwest of the City of Fresno).

The upgraded portion of the Moss Landing–Panoche transmission line runs east to west, beginning at the Panoche Substation and ending adjacent to the project substation. The line first heads west-

southwest, crossing flat to gently sloping agricultural land. As the line leaves the San Joaquin Valley floor, it continues west crossing between the Panoche and Tumey Hills roughly parallel to the Panoche Creek valley. Finally, the line turns slightly northwest, leaving the Panoche Hills and entering Panoche Valley, terminating at the project substation.

On the valley floors, the line is underlain mostly by Quaternary alluvium, along with small areas of Pliocene and/or Pleistocene sandstone, shale, and gravel deposits. The Panoche and Tumey Hills are mostly composed of Upper Cretaceous sandstone, shale, and conglomerate. There are no active mines or minerals of local or regional importance along this upgraded segment of transmission line. No active faults cross this upgraded segment of transmission line, and there are no nearby Earthquake Fault Zones of Required Investigation. In the San Joaquin Valley, the line is underlain by clay loam and sandy loam, which are both classified as having a slight risk of erosion hazard. In the Panoche and Tumey Hills, the line is underlain by clay loam and sandy loam, which both have a slight risk of erosion hazard on flat land and a severe risk of erosion hazard on steeper slopes. A portion of the line in these hills is underlain by sedimentary rock that has a very severe risk of erosion hazard. In the Panoche Valley, the line is underlain by loam that has a slight risk of erosion hazard.

A new microwave communication tower would be constructed within the fence line of the proposed PG&E switchyard. For this new tower, the environmental setting for geology, mineral resources, and soils remains the same as described in the 2010 Final EIR.

The Call Mountain site is in an area of uninhabited mixed forest and shrubland open space located west of the Panoche Valley. At this location, a microwave dish would be added to an existing microwave communication tower. The Call Mountain site (at approximately 3,900 feet of elevation) is located on a broad ridge near the summit of Call Mountain. The topography surrounding the site is composed of steeply sloped ridges and valleys. The underlying geology of the site is composed of Upper Cretaceous sandstone, shale, and conglomerate. There are no active mines or minerals of local or regional importance nearby. No active faults run near the site, and there are no nearby Earthquake Fault Zones of Required Investigation. The site is underlain by rocky outcrops as well as eroded loamy soil that is classified as having a severe risk of erosion hazard.

Panoche Mountain (at approximately 2,100 feet of elevation), northeast of the project site, consists of uninhabited grassland and shrubland open space. Panoche Mountain currently has two existing microwave communication towers, and a new tower (100 feet tall) is proposed within the developed site of one existing tower. The site is located at the summit of Panoche Mountain and is surrounded by steeply sloped ridges and valleys. The underlying geology of the site is composed of Upper Cretaceous sandstone, shale, and conglomerate. There are no active mines or minerals of local or regional importance nearby. No active faults run near the site, and there are no nearby Earthquake Fault Zones of Required Investigation. The site is underlain by loamy soil that is classified as having a severe risk of erosion hazard.

PG&E's Helm Substation is surrounded by agricultural lands, 13 miles southwest of the City of Fresno. There is currently no microwave communication tower at the substation. A new tower would be constructed within the fence line of the substation, and would be approximately 100 feet tall. The topography of the site is a flat to gently sloped valley floor. The underlying geology of the site is composed of Quaternary alluvium. There are no active mines or minerals of local or regional importance nearby. No active faults run near the site, and there are no nearby Earthquake Fault Zones of Required Investigation. The site is underlain by loamy sand that is classified as having a slight risk of erosion hazard.

# C.8.2 Applicable Regulations, Plans, and Standards

No changes have occurred to the regulatory setting for geology, mineral resources, and soils since 2010.

# C.8.3 Environmental Impacts and Mitigation Measures

This section addresses whether changes to the Approved Project would result in any new significant geology, mineral, and soils impacts or increase the severity of previously identified geology, mineral and soils impacts.. Section C.8.3.1 restates the significance criteria used in 2010 to determine whether any project changes result in any new or more severe significant impacts. Section C.8.3.2 summarizes the impacts and mitigation measures presented in the 2010 Final EIR for ease of reference. Section C.8.3.3 presents the updated impact analysis for the Revised Project, and Section C.8.3.4 addresses changes to one adopted mitigation measure and one APM. Section C.8.3.5 addresses the environmental impacts that would occur as a result of the PG&E transmission system upgrades, and Section C.8.3.6 describes cumulative impacts.

## C.8.3.1 Significance Criteria

The following significance criteria for geology, mineral resources, and soils were derived from the Environmental Checklist in CEQA Appendix G. These significance criteria were used for the 2010 Final EIR and are also applied to this Supplemental EIR. They have been amended or supplemented, as appropriate, to address the nature of solar photovoltaic (PV) facilities and transmission line upgrades in general, and the full range of potential impacts related to this Revised Project in particular. An impact of the Revised Project and PG&E Upgrades would be considered significant and would require mitigation if it would:

- Result in triggering or acceleration of geologic processes, such as landslides, substantial soil erosion, or loss of topsoil during construction.
- Expose people or structures to potential risk of loss or injury where there is high potential for seismically induced ground shaking, landslides, liquefaction, settlement, lateral spreading, and/or surface cracking.
- Expose people or structures to potential risk of loss or injury where there is high potential for earthquake-related ground rupture in the vicinity of major fault crossings.
- Expose people or structures to potential risk of loss or injury where corrosive, expansive or other unsuitable soils are present.
- Preclude or interfere with the future extraction of valuable mineral resources during the lifetime of the project.
- Result in soils that are unable to support an on-site wastewater disposal system (septic).

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

## C.8.3.2 Approved Project Impacts and Mitigation Measures

Table C.8-1 presents a summary of the impacts and mitigation measures applicable to the Approved Project.

**Table C.8-1. Summary of Impacts and Mitigation: Geology, Mineral Resources, and Soils**

| Impact No. and Text | Mitigation Required | CEQA Conclusion |
|---|---|---|
| Impact GE-1: Results in triggering or acceleration of geologic processes, such as landslides, substantial soil erosion or loss of topsoil. | None | Class III |
| Impact GE-2: Project would expose people or structures to potential substantial adverse effects as a result of seismically induced ground failure and/or groundshaking. | None | Class III |
| Impact GE-3: Project would expose people or structures to potential substantial adverse effects as a result of surface fault rupture at crossings of active and potentially active faults. | None | Class III |
| Impact GE-4: Project would expose people or structures to potential substantial adverse effects as a result of problematic soils (e.g., corrosive or expansive soils, or collapsible soil). | GE-4.1: Implementation of Geotechnical Report Recommendations | Class II |
| Impact GE-5: Project would interfere with access to known mineral resources. | None | No Impact |
| Impact GE-6: Project soils would be incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems. | None | Class III |
| Impact GE-7: Contribute to cumulatively considerable geology, mineral resources, and soils impacts. | None | No Impact |

## C.8.3.3 Revised Solar Project Impacts

Six geology, mineral resources, and soils impacts are addressed in this section; cumulative impacts are evaluated in Section C.8.3.6.

***Impact GE-1: Results in triggering or acceleration of geologic processes, such as landslides, substantial soil erosion or loss of topsoil (Class III)***

Although the total area for grading activities has increased, the topography of the Revised Project area remains flat to gently sloping. Applicant Proposed Measures (APMs) WR-2 (surface restoration during decommissioning) and WR-3 (BMPs for road construction near drainages) would ensure that areas of soil disturbance are restored and that stream crossings would be constructed in a manner that minimizes disturbance to drainages. The full text of these APMs is provided in Section B.10 of the Project Description for this Supplemental EIR. Compliance with existing laws, including the Clean Water Act, would ensure that runoff is properly managed and that erosion is minimized. This impact would remain less than significant (Class III).

***Impact GE-2: Project would expose people or structures to potential substantial adverse effects as a result of seismically induced ground failure and/or groundshaking (Class III)***

No new faults or liquefaction zones have been identified in the project area. No new structures designed for human occupancy would be constructed under the Revised Project. This impact would remain less than significant (Class III).

***Impact GE-3: Project would expose people or structures to potential substantial adverse effects as a result of surface fault rupture at crossings of active and potentially active faults (Class III)***

No new active faults have been identified in the project area. No structures would be placed in an Earthquake Fault Zone, and no people or structures would be exposed to potential substantial adverse effects as a result of surface fault rupture. This impact would remain less than significant (Class III).

***Impact GE-4: Project would expose people or structures to potential substantial adverse effects as a result of problematic soils (e.g., corrosive or expansive soils, or collapsible soil) (Class II)***

As with the Approved Project, the Revised Project site includes potentially corrosive and expansive soils. Implementation of MM GE-4.1 would ensure that structures are properly designed, engineered, and sited to avoid or withstand hazards associated with problematic soils. This impact would remain less than significant with mitigation (Class II).

***Impact GE-5: Project would interfere with access to known mineral resources (No Impact)***

No new mineral resources or active mining operations have been identified. No impacts would result from construction or operation of the Revised Project.

***Impact GE-6: Project soils would be incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems (Class III)***

The design for the septic system and leach field has not changed. The soil is still appropriate for an on-site septic system. This impact would remain less than significant (Class III).

## C.8.3.4 Changes to Adopted Mitigation Measures

The applicant has proposed one change to the mitigation measure adopted from the 2010 Final EIR as well as a change to two of the APMs for geology, mineral resources, and soils. These changes are shown below (modified text is shown in strikeout for removed text and underline for added text). For Mitigation Measure GE-4.1, the only proposed change is deletion of the first bullet, which is shown here in strikeout. For APM GEO-1, the entire measure is proposed to be deleted; it is shown here in strikeout. For APM GEO-2, the change clarifies that overexcavation of building and equipment pads will be guided by the requirements of the geotechnical report. Mitigation Measures and APMs not shown in this section have not changed and are presented for reference only in Appendix 3.

The proposed changes to MM GE-4.1, APM GEO-1, and APM GEO-2 would not result in more severe or more extensive impacts. The latest geotechnical investigation concluded that over-excavation and importation of non-expansive fill is not necessary for a building that would be constructed on the project site. Additionally, the western boundary for the Revised Project has moved more than 500 feet to the east compared to the Approved Project, and therefore APM GEO-1 is no longer necessary as no structures would be placed within 50 feet of the referenced topographical feature.

**MM GE-4.1** **Implement Geotechnical Report recommendations.** All earthwork operations, including site preparation, and the selection, placement, and compaction of fill materials shall been performed in accordance with the recommendations and the project specifications set forth in the Geotechnical Report (ENGEO, 2010) to ensure the safety of people and structures. Earthwork recommendations relative to adverse soil conditions are summarized below, and shall be implemented:

- ~~To reduce the potential for damage to the planned improvements, the upper 18 inches of the building and equipment pad extending at least 10 feet laterally beyond building areas, be underlain by non-expansive fill. Due to the relatively flat nature of the site, selective grading to mitigate expansive soil may not be a practical alternative and imported fill may be required. In lieu of importing non-expansive fill, it may be cost effective to lime treat the upper 18 inches of the building pad to reduce the expansion potential of the on-site soil.~~

- Recommendation that further corrosion testing be performed to better characterize the site and properly design piles to withstand corrosion.
- Review the final grading and foundation plans and specifications prior to construction to determine whether ENGEO's recommendations have been implemented, and to provide additional or modified recommendations, if necessary, to verify whether changes have occurred in the nature, design, or location of the proposed improvements.
- Construction monitoring should occur to check the validity of the assumptions in preparing the geotechnical report. All earthwork operations should be performed under the observation of a Professional Geologist to ensure that the site is properly prepared, the selected fill materials are satisfactory, and placement and compaction of the fills has been performed in accordance with the report recommendations and project specifications. Sufficient notification prior to earthwork shall be given.
- Clean and backfill excavations extending below the planned finished site grades with suitable material compacted to the recommendations presented in the geotechnical report.

~~**APM GEO-1** No structures shall be placed within 50 feet from the topographical feature along the western boundary of the project site unless trench exploration is undertaken by geotechnical engineer that demonstrates that the topographical feature is not fault related.~~

**APM GEO-2** In order to avoid expansive clay and mitigate possibly disturbed surface soil, overexcavation of building and equipment pads will be considered~~.~~ as required by the geotechnical report.

## C.8.3.5 PG&E Upgrades Impacts

The temporary and permanent geology, mineral resources, and soils impacts of the PG&E Upgrades are analyzed in this section. This analysis is based on the impact statements defined for the solar project, but only Impact GE-1 applies to the PG&E Upgrades and is evaluated. Most impacts addressed for the solar project would not occur as a result of construction or operation of the PG&E Upgrades due to the temporary nature of the construction activities and the small permanent changes to PG&E facilities that would result. The following five impacts would not occur as a result of construction or operation of the PG&E Upgrades:

- Impact GE-2: Project would expose people or structures to potential substantial adverse effects as a result of seismically induced ground failure and/or groundshaking
- Impact GE-3: Project would expose people or structures to potential substantial adverse effects as a result of surface fault rupture at crossings of active and potentially active faults
- Impact GE-4: Project would expose people or structures to potential substantial adverse effects as a result of problematic soils (e.g., corrosive or expansive soils, or collapsible soil)
- Impact GE-5: Project would interfere with access to known mineral resources
- Impact GE-6: Project soils would be incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems

***Impact GE-1: Results in triggering or acceleration of geologic processes, such as landslides, substantial soil erosion or loss of topsoil (Class III)***

Installation of the OPGW along the 17-mile upgraded section of the Moss Landing–Panoche transmission line would involve soil disturbance for preparation of pulling/stringing sites, and for minor improvements to existing access roads. PG&E would also construct up to twelve new tubular steel poles (TSPs) to tie the existing transmission line into the new PG&E switchyard located within the Revised Project boundaries. Although this soil disturbance could result in soil erosion, these activities would occur on generally flat terrain. Compliance with existing regulations, including implementation of a Stormwater Water Pollution Prevention Plan (SWPPP), would minimize the risk of soil erosion. As a result, the impact associated with transmission system upgrades would be less than significant (Class III)

The new microwave communication tower at the project substation would be constructed within the fence line of the proposed PG&E switchyard and would be subject to the same geologic conditions as described for the Project above and in the 2010 Final EIR. No additional soil disturbance beyond what was described for the Revised Project would occur, and impacts associated with construction of this tower would be less than significant (Class III).

The Call Mountains communication tower site is located on steep terrain and would be subject to potential erosion and landslide. However, the upgrades at the Call Mountain site involve installing a new microwave communication dish on an existing tower. No soil disturbance would be required, and no impact would occur.

The Panoche Mountain communication tower site is located on the relatively level top of a ridge. Soil disturbance at this site could lead to accelerated erosion. However, construction of this tower would occur within the fence line of an existing communication tower on land that has already been graded and compacted. Compliance with existing regulations, including implementation of a SWPPP, would reduce the risk of accelerated erosion. Impacts associated with construction of this tower would be less than significant (Class III).

Construction of a new microwave communication tower at the Helm Substation would occur within the fence line of the existing PG&E substation. The surrounding terrain is very flat, and there would be no risk of landslide. Any potential erosion would be controlled through compliance with existing regulations, including implementation of a SWPPP. Impacts associated with construction of this tower would be less than significant (Class III).

### C.8.3.6 Cumulative Impacts

The projects that have been constructed or proposed in the area of potential cumulative effects have changed since 2010, as described in Section D. However, even considering the new project list, the Revised Project would not combine with impacts of the PG&E Upgrades or other projects to result in a cumulatively significant impact (No Impact).

## C.8.4 Summary of Impacts

The significance of impacts for geology, mineral resources, and soils for the Revised Project and for the PG&E Upgrades is summarized in Sections C.8.4.1 and C.8.4.2. Section C.8.4.3 summarizes the impacts of all project components.

### C.8.4.1 Revised Solar Project

There are no changes to the significance of impacts from the conclusions of the 2010 Final EIR. The impacts summarized in Table C.8-1 remain accurate. With implementation of the APMs that would be included as part of the project design, standard and recommended engineering design, as well as Mitigation Measure GE-4.1 (Implement geotechnical report recommendations), potential project impacts to geology, soils, and mineral resources would be less than significant (Class II)

### C.8.4.2 PG&E Upgrades

The PG&E Upgrades would result in an adverse but less than significant impact due to the risk of accelerated erosion caused by soil disturbance (Class III). This impact is less than significant due to the generally flat terrain of the majority of the project area and the minor amount of soil disturbance required for the upgrades. Existing regulations (including the required implementation of a SWPPP) would further reduce the potential for accelerated soil erosion.

### C.8.4.3 Overall Significance of Impacts

The overall impacts of the solar project and the PG&E Upgrades would be less than significant with implementation of mitigation (Class II). For the solar project, all seismic and soil loss related impacts would be less than significant (Class III). Impacts related to problematic soils would be less than significant with implementation of Mitigation Measure GE-4.1, Implementation of Geotechnical Report Recommendations (Class II). All geology, mineral resources, and soils impacts for the PG&E Upgrades would be less than significant (Class III). No cumulative impacts for geology, mineral resources, and soils would occur.

## C.8.5 References

CGS (California Department of Conservation – California Geological Survey). 2014. Regulatory Maps. http://www.quake.ca.gov/gmaps/WH/regulatorymaps.htm. Accessed November 7, 2014.

NRCS (U.S. Department of Agriculture: Natural Resources Conservation Service). 2014. Map Viewer: USA Soil Survey. http://www.arcgis.com/home/webmap/viewer.html?webmap=0edea1c7bbb84ba5842d20483af11679. Accessed November 10, 2014.

USGS (U.S. Geological Survey). 2005. USGS Open-File Report 2005-1305: Preliminary integrated geologic map databases for the United States – western states: California, Nevada, Arizona, Washington, Oregon, Idaho, and Utah. http://pubs.usgs.gov/of/2005/1305/. Accessed November 7, 2014.

# C.9 Hazards and Hazardous Materials

This section analyzes whether the Revised Project and PG&E Upgrades result in any new significant impacts from hazards or hazardous materials that were not previously identified and disclosed in the 2010 Final EIR, or whether there has been a substantial increase in the severity of any previously identified impacts. As part of this analysis, the section considers changes to the environment related to hazards, and changes to potential impacts and mitigation measures.

Data sources that were used for this analysis include information on Valley Fever from the Center for Disease Control, the Public Broadcasting System, and the Los Angeles Times (CDC, 2014; PBS, 2013; LA Times, 2013), and data on the location of leaking underground storage tanks from the State Water Resources Control Board (SWRCB, 2014).

## C.9.1 Environmental Setting

The following section describes changes to the environmental setting that have occurred since 2010. Section C.9.1.1 describes any changes to the environmental setting that was presented in the 2010 Final EIR. Section C.9.1.2 describes the environmental setting for the area surrounding the PG&E transmission system upgrades.

### C.9.1.1 Revised Solar Project

The hazards and hazardous materials environmental setting for the Revised Project has remained substantially unchanged since approval of the 2010 Final EIR. Panoche Valley remains generally undeveloped and pastoral in character. No new development has occurred, and no major new structures have been built in the valley. Grazing remains the primary land use in the area. No new sensitive receptors have been identified within one mile of the project site. No new hazardous materials sites have been identified within one mile of the project area. The environmental setting for most other hazards remains unchanged.

**Valley Fever.** As with the Approved Project, construction of the Revised Project would occur in an area favorable to the growth of the "Valley Fever" vector, which is the fungus *Coccidioides immitis.* This fungus grows in soils in areas of low rainfall, high summer temperatures, and moderate winter temperatures. Project construction would disturb the soil and cause the fungal spores to become airborne, potentially putting construction personnel and wildlife at risk of contracting Valley Fever. Although most Valley Fever cases are very mild, and more than half of infected people either have no symptoms or experience flu-like symptoms and never seek medical attention, in extreme cases the disease can be fatal.

While the presence of Valley Fever spores in the Panoche Valley has not changed since 2010, there has been an increase in Valley Fever cases in recent years. Construction of two similar solar projects, the California Valley Solar Ranch (250 MW) and Topaz Solar Farm (550 MW) in the Carrizo Plain of San Luis Obispo, resulted in 28 workers being infected with Valley Fever (LA Times, 2013). The California Department of Industrial Relations (Cal OSHA) identified 21 violations of State law regarding worker protection violations for the construction of these two solar projects. [1]

[1] According to subsequently issued Cal OSHA citations issued to the contractors or developers at the San Luis Obispo County solar projects, Cal OSHA inspections revealed that proper engineering (watering and soil stabilization) and administrative controls (work stoppage during high wind conditions) were not being implemented

Due to the rise in Valley Fever cases in the western United States over the past few years, the Centers for Disease Control call this disease "A Silent Epidemic" (CDC, 2014). Valley Fever cases in endemic areas have been rising: cases have increased from 2,265 in 1998 to 22,401 in 2011. Since 1990, more than 3,000 people have died (PBS, 2013) and almost half of them have been in California (LA Times, 2013).

### C.9.1.2 PG&E Upgrades

The PG&E Upgrades associated with the Revised Project include installation of approximately 17 miles of optical ground wire (OPGW) primarily on existing transmission towers between the Panoche Valley Solar Project site and the existing Panoche Substation in Fresno County. The telecommunications system upgrades also include construction of up to three new microwave communication towers and upgrades to an existing microwave tower. The PG&E transmission system upgrades would include eight new transmission structures that are required to tie the existing Moss Landing–Panoche 230 kV transmission line into the proposed PG&E switchyard, located within the Revised Project site boundaries. The new transmission structures would be installed by PG&E after site preparation is completed by the Applicant. 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, the Call Mountains (west of the Panoche Valley), Panoche Mountain (east of the Panoche Valley), and the area surrounding the Helm Substation (approximately 13 miles southwest of the City of Fresno).

Disease vectors are similar to those discussed in the 2010 Final EIR and the exposure to sensitive receptors remains low with less than 10 potential occupied residences with 1000 feet of the PG&E ROW. There is one documented leaking underground storage tank site currently undergoing remediation near the Chevron Firebaugh north of Panoche Road and west of Interstate 5 (SWRCB, 2014). This location is approximately 500 feet northwest of a proposed pulling site. There are no other known releases of hazardous substances along the approximately 17 miles of ROW where OPGW will be installed or at the proposed microwave tower sites. The wildfire risk varies along the 17 miles of ROW and at the microwave sites. The response times to remote locations along the PG&E Telecommunication Upgrades would vary from ten minutes to two hours via overland travel.

There are no hospitals, schools, or libraries within one mile of the PG&E ROW or microwave communication tower sites. The Panoche Elementary School is located over one mile away from the PG&E ROW.

Seven residences have been identified within one mile of the PG&E ROW within San Benito County. All seven residences are located south of the existing Moss Landing– Panoche 230 kV transmission line. Five of these residences are located along or just off of Panoche Road in the eastern portion of the Panoche Valley. Two of these residences are located towards the center of Panoche Valley, southeast of the proposed new Panoche Valley Solar Project microwave communication tower.

Through a visual review of aerial imagery, two possible residences have been identified within one mile of the PG&E ROW within Fresno County. One possible residence (APN 02706056S) is located adjacent to the PG&E ROW boundary, less than 500 feet northwest of the Panoche Substation. The second possible residence (APN02711001S) is located approximately 400 feet north of the centerline of the PG&E ROW near the southwest corner of the intersection of W Panoche Road and Panoche Road.

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to control dust in accordance with applicable regulations. (See Section C.9.1.2, which references pertinent regulations).

## C.9.2 Applicable Regulations, Plans, and Standards

No changes have occurred to the regulatory setting for hazards and hazardous materials since 2010. However, based on the new information relating to recent cases of Valley Fever relating to the California Valley Solar Ranch Project, it is important to note that the California Department of Industrial Labor has established strict regulations with regard to protection of construction workers who may be exposed to Valley Fever on construction sites. These regulations can be found in the following sections of Title 8 of the California Code of Regulations, and including contractor reporting obligations in the event of worker injury and illness:

- Section 342 (Reporting Work-Connected Serious Illnesses or Injuries)
- Section 3203 (Injury and Illness Prevention Programs)
- Section 5141 (Implementation of Engineering and Administrative Controls to Prevent Harmful Exposure)
- Section 5144 (Respiratory Protection When Effective Engineering Controls Are Not Feasible)

Any violation of these sections can lead to a potential civil penalty action against the contractor or employer pursuant to California Labor Code section 6317.

## C.9.3 Environmental Impacts and Mitigation Measures

This section addresses whether changes to the Approved Project would result in any new significant hazards impacts or increase the severity of previously identified hazards impacts. Section C.9.3.1 restates the significance criteria used in 2010 to determine whether any project changes result in any new or more severe significant impacts. Section C.9.3.2 summarizes the impacts and mitigation measures presented in the 2010 Final EIR for ease of reference. Section C.9.3.3 presents the updated impact analysis for the Revised Project, and Section C.9.3.4 addresses changes to two adopted mitigation measures and three APMs. Section C.9.3.5 addresses the environmental impacts that would occur as a result of the PG&E transmission system upgrades, and Section C.9.3.6 describes cumulative impacts.

### C.9.3.1 Significance Criteria

The following significance criteria for hazards and hazardous materials were derived from the Environmental Checklist in CEQA Appendix G. These significance criteria were used for the 2010 Final EIR and are also applied to this Supplemental EIR. They have been amended or supplemented, as appropriate, to address the nature of solar photovoltaic facilities and transmission line upgrades in general, and the full range of potential impacts related to this Revised Project in particular. An impact of the Revised Project and PG&E Upgrades would be considered significant and would require mitigation if it would:

- Create a substantial hazard to people or the environment through the routine transport, use, or disposal of hazardous materials or as a result of an accidental release of hazardous materials.
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.
- Create a substantial hazard to people or the environment as a result of being located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5.

- Create a substantial aeronautical or motor vehicle hazard or result in a significant aerial obstruction within 2 miles of an airport or airstrip.
- Expose people or structures to a risk of loss, injury, or death involving wildland fires.
- Impair implementation of, or physically with, an adopted emergency response plan or emergency evacuation plan.
- Create a substantial hazard to people or the environment by mobilizing existing contamination or generating disease vectors.

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

## C.9.3.2 Approved Project Impacts and Mitigation Measures

Table C.9-1 presents a summary of the impacts and mitigation measures applicable to the Approved Project.

**Table C.9-1. Summary of Impacts and Mitigation: Hazards and Hazardous Materials**

| Impact No. and Text | Mitigation Required | CEQA Conclusion |
|---|---|---|
| Impact HZ-1: Create a substantial hazard to people or the environment through the routine transport, use, or disposal of hazardous materials or as a result of an accidental release of hazardous materials. | WR-6.3: Maintain vehicles and equipment. | Class II |
| Impact HZ-2: Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school. | None. | Class III |
| Impact HZ-3: Create a substantial hazard to people or the environment as a result of being located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. | None. | No Impact |
| Impact HZ-4: Create a substantial aeronautical or motor vehicle hazard or result in a significant aerial obstruction within 2 miles of an airport or airstrip. | None. | Class III |
| Impact HZ-5: Expose people or structures to a risk of loss, injury, or death involving wildland fires. | HZ-5.1: Cease work during Red Flag Warning.<br>PS-1.1: Develop and implement service agreement Fire Department. | Class II |
| Impact HZ-6: Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan. | None. | Class III |
| Impact HZ-7: Create a substantial hazard to the public or the environment by mobilizing existing contamination or generating disease vectors. | HZ-7.1: Prohibit standing water for extended periods of time. | Class II |
| Impact HZ-8: Contribute to cumulatively considerable hazards and hazardous materials impacts. | None. | Class III |

## C.9.3.3 Revised Solar Project Impacts

Seven hazards impacts are addressed in this section; cumulative impacts are evaluated in Section C.9.3.6.

***Impact HZ-1: Create a substantial hazard to people or the environment through the routine transport, use, or disposal of hazardous materials or as a result of an accidental release of hazardous materials (Class II)***

The same equipment that was described in the 2010 Final EIR would be used to construct the Revised Project. The Revised Project would include fewer PV panels than the Approved Project, but would compress the construction schedule from five years to approximately 18 months. Construction activities would be shorter but more intense. The risk of a leak or accidental spill of hazardous materials would be the same as described in the 2010 Final EIR, and the same APMs and mitigation measures would apply. The Revised Project no longer includes evaporation ponds associated with water treatment, and therefore the risk of mobilizing contaminants through brine harvesting no longer exists. With implementation of mitigation measures, this impact would remain less than significant (Class II).

***Impact HZ-2: Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school (Class III)***

The nearest school, Panoche Elementary School, is located 0.68 miles from the Revised Project site boundary. Based on the distance of the school from the project site, the 2010 Final EIR concluded that the risk of hazardous emissions, including cadmium telluride flakes or dust, remains negligible. The Revised Project will be no closer to the Panoche Elementary School. Therefore, this impact would be the same for the Revised Project and would remain less than significant (Class III).

***Impact HZ-3: Create a substantial hazard to people or the environment as a result of being located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 (No Impact)***

The project site is not listed as a hazardous materials site, and no new nearby hazardous materials sites have been identified. Accordingly, like the Approved Project, the Revised Project would not create a substantial hazard to people or the environment due to the disturbance of a prior hazardous materials site. No impact would occur.

***Impact HZ-4: Create a substantial aeronautical or motor vehicle hazard or result in a significant aerial obstruction within 2 miles of an airport or airstrip (Class III)***

The 2010 Final EIR analyzed glint and glare impacts from approximately 3-4 million smaller panels that would be installed for the Approved Project and concluded that such impacts would be less than significant. The Revised Project will include approximately one million larger panels for the Revised Project over a reduced project footprint. Although the number of PV panels would be reduced, panels would be larger and would still be a source of glint or glare for passing motorists and air traffic. However, glint and glare impacts would be similar with the Revised Project and would remain less than significant (Class III).

***Impact HZ-5: Expose people or structures to a risk of loss, injury, or death involving wildland fires (Class II)***

The total number of PV panels installed would decrease from approximately 3 to 4 million for the Approved Project to approximately one million for the Revised Project. The total permanently disturbed area would decrease from 2,203 acres to approximately 1,888 acres. Although the project footprint and the number of project components would be smaller, construction and operation activities (such as personnel smoking) could still increase the risk of wildland fires. This risk would be reduced to a level of that is less than significant through implementation of previously adopted Mitigation Measure HZ-5.1 (Cease work during Red Flag Warning) (Class II).

***Impact HZ-6: Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan (Class III)***

The Revised Project would have a smaller footprint than the Approved Project. It would also include a new perimeter fire access road that would help to improve firefighting capabilities at the project site.

The project would not impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan. However, the compressed construction schedule would result in much higher daily traffic volumes, which could lead to increased traffic accidents or temporary delays for emergency response vehicles. The large amount of traffic and the large number of construction workers, combined with the remote project location (40 miles from the nearest hospital) could result in delayed access to emergency medical care. This could affect both permanent residents of the valley and project construction workers. This could result in inadequate medical evacuation capabilities at the project site and for the surrounding area. The 2010 project included APM HAZ-5, in which the Applicant committed to construct a helipad at the project site, but the Applicant has deleted the APM as a helipad will no longer be constructed at the project site (see Section C.9.3.2). However, the Revised Project description includes PG&E's temporary helicopter landing zones that could be used in case of medical emergencies. Four helicopter landing zones have been identified (one at the PVS Substation, two along the PG&E transmission route, and one at the Panoche Substation) and are depicted on Figure B-6 (in Section B). Therefore, adequate emergency medical evacuation capabilities are available.

In the 2010 Final EIR, this impact was found to be adverse but less than significant (Class III) because APM HAZ-5 provided a helipad. Because the Revised Project incorporates four temporary helicopter landing zones that could be used for medical emergency evacuations, impacts would remain less than significant (Class III).

***Impact HZ-7: Create a substantial hazard to the public or the environment by mobilizing existing contamination or generating disease vectors (Class II)***

**Valley Fever.** The 2010 Final EIR identified the potential for exposure of construction workers and the public to the airborne fungal spores that cause Valley Fever as a potential impact of the Approved Project and concluded that implementation of dust control mitigation would minimize the likelihood of becoming ill from the airborne fungal spores. The 2010 Final EIR explained that grading and other soil disturbing activities could mobilize the fungus that causes Valley Fever. Like the Approved Project, the Revised Project would result in a similar impact.

Since 2010 and as described in Section C.9.1.1, illness from Valley Fever in other areas of California has been increasing and has occurred at solar project construction sites in San Luis Obispo County. Proper engineering and administrative controls and contractor implementation of worker protection measures can reduce the likelihood that construction workers will contract Valley Fever. The spread of Valley Fever spores during construction can be reduced by properly implementing the dust control requirements set forth in previously adopted Mitigation Measures AQ-1.1 (Develop and implement a fugitive dust plan) and AQ-1.2 (Designate a dust complaint monitor) as described in Section C.4 (Air Quality). Also, the Applicant and construction contractor must comply with the strict regulatory requirements of the California Department of Industrial Relations, which are described in Section C.9.2. In addition, a new mitigation measure, HZ-7.2 (Protect workers and the public from Valley Fever) has been developed to add other specific protective measures. With implementation of these measures and adherence to regulatory requirements, impacts would be less than significant (Class II).

**MM HZ-7.2** **Protect Workers and Public from Valley Fever.** The Applicant shall implement the following measures to reduce the likelihood that construction workers and the public are infected with Valley Fever:

- The Applicant shall prepare a detailed informational brochure explaining Valley Fever, its cause, and its symptoms, and the populations most at risk for the disease. The brochure shall incorporate information provided the California Department of Public Health (DPH) (http://www.cdph.ca.gov/healthinfo/discond/Pages/Coccidioidomycosis.aspx) and shall be reviewed by a DPH for adequacy at least 30 days before the start of construction. The approved brochure shall be provided to all residents of the Panoche Valley and all families of students at the Panoche Valley School.
- The Applicant shall make breathing protection gear available to all workers, at their request and at no cost to workers.
- As part of the Safe Worker Environmental Awareness Program, the Applicant shall educate workers to recognize the symptoms of Valley Fever, and to promptly report suspected symptoms of work-related Valley Fever to a supervisor.

**Other contaminants and hazards.** The total graded area for the Revised Project would increase from 200 acres to 392 acres. Although no specific existing contamination has been identified on the project site, grading activities could cause unknown contaminants to become airborne. Like the Approved Project, compliance with existing laws and regulations, including implementation of a Hazardous Materials Business Plan,[2] would ensure that this impact would be less than significant (Class III).

Project activities could result in trash piles, standing water, or open containers that could provide breeding areas for disease vectors such as mosquitos, flies, or rodents. Implementation of APM HAZ-1 (totally enclosed containment for all trash) and Mitigation Measure HZ-7.1 (Prohibit standing water) would reduce the risk of an increase in disease vectors. With implementation of APM HAZ-1 and Mitigation Measure HZ-7.1, this impact would be less than significant (Class II).

Sheep that may be used for vegetation control on the project site could transmit diseases to personnel. This risk would be minimized through implementation of APM HAZ-4 (properly vaccinate grazing livestock), and would remain less than significant (Class III).

## C.9.3.4 Changes to Adopted Mitigation Measures

Mitigation Measure HZ-7.2 (Protect workers and the public from Valley Fever) has been added for the Revised Project. This new mitigation measure is presented in Section C.9.3.3, above. This section addresses changes to mitigation measures that were adopted for the Approved Project in 2010.

The applicant has proposed changes to two mitigation measures and three APMs adopted from the 2010 Final EIR for hazards and hazardous materials. The applicant has proposed to delete Mitigation Measure HZ-1.1 (Harvest wet brine from evaporation pond). This has no effect on impacts because

[2] Required under Chapter 6.95 of the California Health and Safety Code Article 1–Hazardous Materials Release Response and Inventory Program (Sections 25500 to 25520) and Article 2–Hazardous Materials Management (Sections 25531 to 25543.3). CCR Title 19, Public Safety, Division 2, Office of Emergency Services, Chapter 4–Hazardous Material Release Reporting, Inventory, and Response Plans, Article 4 (Minimum Standards for Business Plans).

evaporation ponds are no longer proposed for use on the solar project. For the same reason, Mitigation Measure HZ-7.1 has been modified as shown below to delete reference to evaporation ponds.

The proposed changes to APM HAZ-3 would not result in more severe or more extensive impacts because grazing will still occur, reducing fire risk, if adequate forage is available. The elimination of APM HAZ-5 would not affect safety or evacuation because the PG&E Upgrades include a helicopter landing zone at the proposed substation; this site can be used during project construction in the event of an emergency. The changes to APM HAZ-6 do not increase risk; they only specify that electrical safety signage will comply with the requirements of applicable electrical codes.

These changes are shown below (modified text is shown in strikeout for removed text and underline for added text). Mitigation Measures and APMs not shown in this section have not changed and are presented for reference only in Appendix 3.

~~**MM HZ-1.1 Harvest Wet Brine from Evaporation Pond.** Evaporation pond residue shall be harvested in brine (wet, aqueous) form. Residue shall not be permitted to dry out at any time to prevent airborne residue particles.~~

**MM HZ-7.1** **Prohibit standing water.** In order to eliminate the risk of generating disease vectors at the site, during project construction and operations the Applicant shall ensure that open containers be inverted and construction ditches not be allowed to accumulate water. Construction and maintenance operations shall not generate standing water, except for ~~reverse osmosis evaporation~~ stormwater management ponds and temporary water storage ponds. Naturally occurring depressions, drainages, and pools at the site shall not be drained or filled without consulting with the appropriate resource agency (San Benito County, U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, California Department of Fish and Wildlife) and obtaining the appropriate permits.

**APM HAZ-3** Sheep grazing under the panels will help to keep pasture growth controlled~~, and in a continued state of agricultural production.~~ as necessary.

~~**APM HAZ-5** Based on the remote location of the project site, a helipad will be constructed on site in accordance with the Federal Aeronautics Administration Advisory Circular No. 150/5390-2B "Heliport Design" to provide emergency transportation.~~

**APM HAZ-6** Prior to energizing the project, the Applicant will install ~~a reasonable number of~~ electrical safety signage on all solar arrays in the immediate vicinity of ~~all~~ wiring and ~~on all~~ electrical ~~conduit~~ equipment using weather-resistant and fade-proof materials~~.~~ as required by applicable electrical code. Warning signs will be designed to be evident to any person tampering with, working on, or dismantling project ~~photovoltaic panels~~ electrical system. Sign ~~print~~ language shall ~~substantially conform to~~ comply with the ~~following language: "CAUTION: Solar PV Wiring May Remain Energized After Disconnection During Daylight Hours. Tampering With Wiring May Result~~ requirements in ~~Electric SHOCK or FIRE. Death or Serious Injury May Result. Do Not Expose Wires to Vegetation or Other Flammable Materials."~~ applicable electrical codes.

## C.9.3.5 PG&E Upgrades Impacts

The temporary and permanent hazards and hazardous materials impacts of the PG&E Upgrades are analyzed in this section. This analysis is based on the impact statements defined for the solar project, but only Impacts HAZ-1 and HAZ-5 apply to the PG&E Upgrades and are evaluated. Most impacts addressed

for the solar project would not occur as a result of construction or operation of the PG&E Upgrades due to the temporary nature of the construction activities and the small permanent changes to PG&E facilities that would result. The following four impacts would not occur as a result of construction or operation of the PG&E Upgrades:

- Impact HZ-2: Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school
- Impact HZ-3: Create a substantial hazard to people or the environment as a result of being located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5
- Impact HZ-4: Create a substantial aeronautical or motor vehicle hazard or result in a significant aerial obstruction within 2 miles of an airport or airstrip
- Impact HZ-6: Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan

***Impact HZ-1: Create a substantial hazard to people or the environment through the routine transport, use, or disposal of hazardous materials or as a result of an accidental release of hazardous materials (Class III)***

Construction and operation (including inspection and maintenance) of the PG&E Upgrades would involve the use of heavy machinery, including helicopters. If not properly maintained, this machinery could leak potentially hazardous materials, including diesel fuel, gasoline, lubricant oils, hydraulic fluid, antifreeze, and transmission fluid. An accidental spill or leak of these materials could contaminate soil, surface water, groundwater, or affect construction workers or the public. This risk would be reduced by AMM HAZ-1 (Proper Storage and Disposal of Waste and Hazardous Materials) and AMM WR-1 (Hazardous Material Spill Prevention and Response Plan), which would be implemented as part of the proposed PG&E Upgrades. The full text of these AMMs is presented in Table B-12 (Section B.11). This impact would be less than significant (Class III).

***Impact HZ-5: Expose people or structures to a risk of loss, injury, or death involving wildland fires (Class III)***

Construction of the PG&E Upgrades would take between 12 and 16 weeks. Several components of the PG&E Upgrades (including the microwave towers at the Call and Panoche Mountain sites and the OPGW in the Panoche Hills) are located in remote open space where fire risk is generally high. Vehicles idling on dry vegetation or personnel smoking near dry vegetation could ignite a wildfire. This risk would be reduced by AMM HAZ-2 (Curtail Work During Red Flag Conditions) and AMM HAZ-3 (Fire Season Preparedness), which would be implemented as part of the proposed PG&E Upgrades. The full text of these AMMs is presented in Table B-12 (Section B.11). This impact would be less than significant (Class III).

***Impact HZ-7: Create a substantial hazard to the public or the environment by mobilizing existing contamination or generating disease vectors (Class III)***

As described in Section C.9.1.1 and C.9.3.3 (Impact HZ-7), Valley Fever is present in Fresno and San Benito Counties. Construction workers are especially at risk for contracting the disease due to their exposure to dust. Two AMMs are included as AMMs by PG&E to reduce the risk related to Valley Fever: AMM AQ-1 (Reduce fugitive dust) and AMM HAZ-4 (Reduce risk of Valley Fever). With implementation of these measures and compliance with existing regulations, as defined in Section C.9.2, this impact would be less than significant (Class III).

### C.9.3.6 Cumulative Impacts

The projects that have been constructed or proposed in the area of potential cumulative effects have changed since 2010, as described in Section D. With implementation of mitigation, the Revised Project and the PG&E Upgrades would result in less than significant impacts associated with the transport, use, disposal, or foreseeable upset of, or accidents involving hazardous materials during construction (Class II). Like the Revised Project and the PG&E Upgrades, cumulative projects would be expected to adhere to all applicable laws and regulations to reduce the potential impacts from hazards, including impacts associated with emissions or handling of hazardous or acutely hazardous materials, substances, or waste. With implementation of mitigation, the Revised Project construction and operation would result in less than significant impacts associated with wildland fires (Class II). Like the Revised Project, cumulative projects would be expected to adhere to standard fire prevention protocols to reduce the potential impacts from hazards, including impacts associated with wildland fires to less than significant. Therefore, even considering the revised cumulative project list, the Revised Project and the PG&E Upgrades would not combine with impacts of other projects and their contribution to cumulative impacts would not be cumulatively considerable and would not result in a cumulatively significant impact (Class III).

## C.9.4 Summary of Impacts

The significance of impacts for hazards and hazardous materials for the Revised Project and for the PG&E Upgrades is summarized in Sections C.9.4.1 and C.9.4.2. Section C.9.4.3 summarizes the impacts of all project components.

### C.9.4.1 Revised Solar Project

The impacts summarized in Table C.9-1 remain accurate, except that a new mitigation measure, MM HZ-7.2 (Protect Workers and Public from Valley Fever) is recommended for the Revised Project. The Revised Project would have the same less than significant impacts (Class II and Class III) as did the Approved Project.

### C.9.4.2 PG&E Upgrades

With implementation of all specified AMMs, the impacts of the PG&E Upgrades related to hazards and hazardous materials would be less than significant (Class III). AMM HAZ-1 (Proper storage and disposal of waste and hazardous materials) and AMM WR-1 (Hazardous material spill prevention and response plan) would protect soil and water from contamination. AMM HAZ-2 (Curtail work during red flag conditions) and AMM HAZ-3 (Fire season preparedness) would reduce the risk of loss, injury, or death due to wildland fire. AMM HAZ-4 (Reduce risk for Valley Fever) would help protect workers at risk for Valley Fever. No other impacts associated with hazards and hazardous materials would occur as a result of implementation of the PG&E Upgrades.

### C.9.4.3 Overall Significance of Impacts

The overall impacts of the solar project and the PG&E Upgrades would be less than significant (Class III) or less than significant with implementation of mitigation (Class II). For the solar project, hazards and hazardous materials impacts related to the routine transport, use, or disposal of hazardous materials or as a result of an accidental release of hazardous materials, risk of loss, injury, or death due to wildland fire, and the mobilization of existing contaminants or the generation of disease vectors would be less

than significant with implementation of mitigation (Class II). All other solar project impacts related to hazards and hazardous materials would be less than significant (Class III). All potential impacts of the PG&E Upgrades related to hazards and hazardous materials would be less than significant (Class III), as would be all cumulative impacts related to hazards and hazardous materials.

## C.9.5 References

LA Times. 2013. Officials study valley fever outbreak at solar power projects. http://articles.latimes.com/2013/apr/30/local/la-me-solar-fever-20130501. Accessed November 22, 2014.

CDIR (California Department of Industrial Relations). 2014. Notable Citations Issued. http://www.dir.ca.gov/dosh/citation.html. Accessed December 16.

CDC (Centers for Disease Control). 2014. Valley Fever. http://www.cdc.gov/features/valleyfever/. Accessed November 22, 2014.

PBS (Public Broadcasting System). 2013. Valley Fever: 10 Things CDC Says You Should Know. http://www.pbs.org/newshour/rundown/valley-fever-10-things-cdc-says-you-should-know/. Accessed November 22, 2014.

SWRCB (State Water Resources Control Board). 2014. State Water Resources Control Board GeoTracker. http://geotracker.waterboards.ca.gov/. Accessed November, 11 2014.

# C.10 Land Use and Recreation

This section analyzes whether the Revised Project and PG&E Upgrades would result in any new significant impacts to land use and recreation that were not previously identified and disclosed in the 2010 Final EIR, or whether there would be a substantial increase in the severity of any previously identified impacts to land use and recreation. As part of this analysis, the section considers changes to the existing land use and recreation facilities in the study area, changes to the development footprint of the Project, and changes to potential land use and recreation impacts and mitigation measures.

Data sources that were used for this analysis include recreational use data from the Bureau of Land Management (BLM, 2014), school enrollment data from the California Department of Education (CDE, 2014), transmission line construction rules and regulations from the California Public Utilities Commission (CPUC, 1995, 2014), and land use policies from the Fresno County General Plan (Fresno County, 2000a, 2000b).

## C.10.1 Environmental Setting

This section describes changes to the environmental setting that have occurred since 2010. Section C.10.1.1 describes any changes to the environmental setting that was presented in the 2010 Final EIR. Section C.10.1.2 describes the environmental setting for the area surrounding the PG&E Upgrades.

### C.10.1.1 Revised Solar Project

The land uses and recreational opportunities in the Revised Project area are substantially unchanged since approval of the 2010 Final EIR. The Panoche Valley remains generally undeveloped and pastoral in character. No new development has occurred, and no major new structures have been built in the valley. All of the residences that were identified in the Final EIR as being within one mile of the Approved Project still lie within one mile of the Revised Project. Grazing remains the primary land use in the area. No new parks or other recreation facilities have been established within the Project area.

### C.10.1.2 PG&E Upgrades

The PG&E Upgrades associated with the Revised Project include installation of approximately 17 miles of optical ground wire (OPGW) on existing transmission towers between the Panoche Valley Solar Project site and the existing Panoche Substation in Fresno County. The telecommunications system upgrades also include construction of up to three new microwave communication towers and upgrades to an existing microwave tower. The PG&E transmission system upgrades would include eight new transmission structures that are required to tie the existing Moss Landing–Panoche 230 kV transmission line into the proposed PG&E switchyard, located within the Revised Project site boundaries. The new transmission structures would be installed by PG&E after site preparation is completed by the Applicant.

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, the Call Mountains (west of the Panoche Valley), Panoche Mountain (east of the Panoche Valley), and the area surrounding the Helm Substation (approximately 13 miles southwest of the City of Fresno).

Approximately 6 miles of the upgraded portion of the Moss Landing–Panoche transmission line would traverse BLM land. Additionally, the proposed communication tower on Panoche Mountain would be located on BLM land. However, the microwave tower will be collocated on existing California Highway Patrol (CHP) equipment or constructed entirely within the fenceline of a CHP station, on which CHP

holds a ROW grant until 2040. Recreational opportunities in the Panoche Hills include hiking, camping, horseback riding, mountain biking, hunting, target shooting, rock hounding, stargazing, and wildlife/wildflower viewing. The Panoche Hills contain two Wilderness Study Areas (WSAs) and an Area of Critical Environmental Concern (ACEC).

## C.10.2 Applicable Regulations, Plans, and Standards

The same San Benito County regulations, plans, and standards that applied to the assessment of land use and recreation impacts within the Approved Project area also apply to the Revised Project area and are presented in Section C.10.2 of the Final EIR. Because the PG&E Upgrades are under the jurisdiction of the CPUC and a segment of PG&E ROW where the upgrades will occur would be located within BLM lands and in Fresno County, additional federal, state, and local regulations, plans and standard would apply to the PG&E Upgrades. These are described below.

### C.10.2.1 Federal

A portion of the PG&E ROW and the microwave tower at Panoche Mountain are located on BLM lands. As stated in the 2010 FEIR, the BLM San Joaquin Management Area under the Resource Management Plan (RMP) for the Southern Diablo Range and Central Coast of California (USFWS, 1998; BLM, 2007) applies to the PG&E related upgrades located on BLM land. The BLM's Hollister Field Office developed the RMP for the Southern Diablo Mountain Range and Central Coast of California under the authority and direction of the Federal Land Policy and Management Act (FLPMA) of 1976 (Sec. 202(a)), which states that land use plans shall be developed, maintained, and, when appropriate, revised for the use of the public lands. A Notice of Intent (NOI) to amend the RMP for the Southern Diablo Mountain Range and Central Coast of California and associated Environmental Assessment for the Panoche-Coalinga Area of Critical Environmental Concern was issued by the BLM Hollister Field Office on September 18, 2012 (BLM, 2012). The RMP amendment will incorporate relevant new information and program guidance or policies developed since the 2007 Record of Decision (ROD) approving the original RMP. Policies from the existing RMP that would apply to the PG&E Upgrades include goals and objectives for energy and minerals and land and realty. The goal for energy and mineral resource management is to allow development of energy and mineral resources to meet the demand for energy and mineral production while protecting natural and cultural resources in the area. The goal for lands and realty management is to provide lands, interests in land, and authorizations for public and private uses while maintaining and improving resource values and public land administration.

### C.10.2.2 State

PG&E, as an investor-owned utility, is regulated by the California Public Utilities Commission (CPUC). The CPUC has jurisdiction over the siting and design of the PG&E Upgrades required for the Revised Project. Although the PG&E facilities upgrades are exempt from local land use and zoning regulations and permitting, pursuant to General Order 131D, Section III.C requires that the utility communicate with, and obtain the input of, local authorities regarding land-use matters and obtain any nondiscretionary local permits. The CPUC's most applicable regulations and standards include the following:

- **General Order 131D, Rules Relating to the Planning and Construction of Electric Generation, Transmission/Power/Distribution Line Facilities and Substations Located in California**. GO-131D defines the CPUC requirements for CEQA compliance regarding utility projects, the need for public notice, and other topics (CPUC, 1995)

- **General Order 95: Rules for Overhead Electric Line Construction**. GO-95 governs the construction, operation, and maintenance of electric supply and communication lines (CPUC, 2014).

### C.10.2.3 Local: Fresno County

Because a portion of the PG&E Upgrades is within Fresno County, the Fresno County General Plan would also apply to the PG&E components. While CPUC authority can supersede that of the County, PG&E tries to ensure that its projects are consistent with County requirements. The relevant General Plan components are:

- **Agriculture and Land Use Element**. The Agriculture and Land Use Element sets out goals and policies under four main headings: Resource Lands, Rural Development, Urban Development, and General Provisions and Administration.
- **Open Space and Conservation Element.** The Open Space and Conservation Element sets out goals and policies under three main headings: Productive Resources, Natural Resources, and Recreation and Cultural Resources.

## C.10.3 Environmental Impacts and Mitigation Measures

This section addresses whether the changes to the Approved Project would result in a new significant impact to land use or recreation or increase the severity of previously identified impacts related to land use or recreation. Section C.10.3.1 restates the significance criteria used in 2010 to determine whether any project changes result in any new or more severe significant impacts. Section C.10.3.2 summarizes the impacts and mitigation measures presented in the 2010 Final EIR for ease of reference. Section C.10.3.3 presents the updated impact analysis for the Revised Project, and Section C.10.3.4 addresses the impacts of any changes to a previously adopted mitigation measure. Section C.10.3.5 addresses the environmental impacts that would occur as a result of the PG&E Upgrades, and Section C.10.3.6 describes cumulative impacts.

### C.10.3.1 Significance Criteria

The following significance criteria for land use and recreation were defined in the 2010 Final EIR. These criteria are derived from previous environmental impact assessments and from the Environmental Checklist in CEQA Appendix G. They have been amended or supplemented, as appropriate, to address the nature of solar photovoltaic facilities and transmission line upgrades in general, and the full range of potential impacts related to this Revised Project in particular. An impact of the Revised Project would be considered significant and would require mitigation if it would:

- Preclude an existing or permitted land use, or create a disturbance that would diminish the function of a particular land use.
- Increase the use of established recreational facility such that substantial physical deterioration of the facility would occur or be accelerated.
- Disrupt or preclude activities in established federal, State, or local recreational areas.
- Substantially contribute to the loss or degradation of the factors that contribute to the value of federal, State, or local recreational facilities or programs.

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

## C.10.3.2 Approved Project Impacts and Mitigation Measures

Table C.10-1 presents a summary of the impacts and mitigation measures applicable to the Approved Project.

**Table C.10-1. Summary of Impacts and Mitigation: Land Use and Recreation**

| Impact No. and Text | Mitigation Required | CEQA Conclusion |
|---|---|---|
| Impact LU-1: Construction would temporarily disrupt, displace, or divide land uses. | LU-1.1: Establish construction liaison.<br>LU-1.2: Provide advance notification of construction.<br>LU-1.3: Provide quarterly construction updates. | Class II |
| Impact LU-2: Operation and maintenance of the project would permanently disrupt, displace, or divide land uses. | None. | Class III |
| Impact LU-3: Contribute to cumulatively considerable land use impacts. | LU-1.1: Establish construction liaison.<br>LU-1.2: Provide advance notification of construction.<br>LU-1.3: Provide quarterly construction updates. | Class II |
| Impact RC-1: Construction activities would temporarily reduce, disrupt, or preclude access and visitation to established recreational areas. | None. | Class III |
| Impact RC-2: Operation and Maintenance would permanently reduce, disrupt, or preclude access and visitation to established recreational areas. | None. | No Impact |
| Impact RC-3: Construction or operation and maintenance activities would increase the use of established recreational facilities such that substantial physical deterioration would occur or be accelerated. | None. | Class III |
| Impact RC-4: Construction or operation and maintenance activities would change the character of a recreational area or program, diminishing its recreational value. | None. | Class III |
| Impact RC-5: Construction or operation and maintenance would result in the degradation or loss of designated wilderness lands or a wilderness study area. | None. | No Impact |
| Impact RC-6: Contribute to cumulatively considerable recreation impacts. | None. | Class III |

## C.10.3.3 Revised Solar Project Impacts

Seven land use and recreation impacts are discussed in this section; cumulative impacts are addressed in Section C.10.3.6.

***Impact LU-1: Construction would temporarily disrupt, displace, or divide land uses (Class II)***

The Approved Project would have been located on 3,202 acres with 2,203 acres of permanent disturbance for the project footprint. The Revised Project would be located on 2,506 acres with 1,888 acres of permanent disturbance for the project footprint. The construction schedule for the Revised Project

would be approximately 18 months, compared to the Approved Project construction schedule of approximately 5 years.

Like the Approved Project, construction and operation of the Revised Project would displace current grazing use of the site. Please refer to Section C.3 (Agriculture) for a discussion of agriculture impacts. Land uses within one mile of the Revised Project site remain as described for the Approved Project and include rural residential properties and agricultural uses. The very small, rural, Panoche Elementary School (K-8), which had an enrollment of 6 students (2 in first grade, 2 in third grade, and 2 in fourth grade) in 2012-2013 (CDE, 2014), is over one mile from the Revised Project site. The presence of construction crews, the operation of construction equipment and resulting construction noise, and increased construction-related traffic on local roads would be potentially disruptive, particularly during the late evening and early morning hours. The construction traffic and other construction activities for the Revised Project would occur over a shorter time period, but would be more intense compared to the Approved Project. Peak daily traffic trips have increased to 1,150 trips under the Revised Project. However, like the Approved Project, the Revised Project includes implementation of a Traffic Control Plan (as described in Mitigation Measure TR-1.1 (Section C.14 Transportation and Circulation), which would minimize disruption to current agricultural traffic uses on Panoche Road and Little Panoche Road.

Due to the rural character of the Project area, in conjunction with both the intensity of the workforce and equipment needed and the duration of construction itself, temporary impacts from the Revised Project on surrounding land uses would be greater in the short term due to the accelerated 18 month construction schedule. At the same time, the area would experience 3.5 years of less construction activity. Like the Approved Project, the temporary construction impact of the Revised Project would be reduced to less than significant levels through implementation of Mitigation Measures TR-1.1 (implement Traffic Control Plan), LU-1.1 (Establish construction liaison), LU-1.2 (Provide advance notice of construction), and LU-1.3 (Provide quarterly construction updates). With implementation of Mitigation Measures TR-1.1, and LU-1.1 through LU-1.3, this impact would be less than significant (Class II).

***Impact LU-2: Operation and maintenance of the project would permanently disrupt, displace, or divide land uses (Class III)***

As described under Impact LU-1, above, the Revised Project would be constructed on grazing land. Although the Project footprint and the amount of permanently disturbed land have decreased under the Revised Project, grazing land still would be permanently displaced by Project implementation. However, all of the parcels that would be required for Project implementation are located on property that is under option for purchase by the Applicant. Property owners would be compensated for their property and are aware that Project implementation would require the full or partial displacement of the former land uses. Additionally, short-term grazing by sheep may occur on the site during Project operation, which would retain some agricultural use of the property. The long-term displacement of the agricultural use of the property would be adverse but less than significant (Class III). Please refer to Section C.3 (Agriculture) for a discussion of the loss of agricultural and Williamson Act lands.

***Impact RC-1: Construction activities would temporarily reduce, disrupt, or preclude access and visitation to established recreational areas (Class III)***

There are no established federal, State, or local recreation areas within the Revised Project footprint. However, several recreation areas are in close proximity to the Project site, including the Griswold, Panoche, and Tumey Hills as well as Mercy Hot Springs resort. These recreation areas are accessed via local roadways. Although the Project footprint and amount of permanently disturbed land have

decreased under the Revised Project, the compressed construction schedule would result in substantially higher levels of peak daily traffic. This increased construction-related traffic could disrupt visitors (such as hikers, campers, hunters, and wildlife viewers) entering or exiting these areas. The increased duration of visitor vehicle trips would not occur continuously and would not be expected to substantially reduce, disrupt, or preclude access or visitation. Impacts would be adverse but less than significant (Class III).

***Impact RC-2: Operation and Maintenance would permanently reduce, disrupt, or preclude access and visitation to established recreational areas (No Impact)***

No federal, State, or local recreation areas are located within the Revised Project footprint. However, the surrounding hills that are located immediately adjacent to the Project site provide a variety of outdoor recreational activities, including hiking, camping, birding, target shooting, hunting, and other outdoor recreational uses. Although the Revised Project occupies a smaller footprint than the Approved Project, the operational staff would remain the same, at approximately 50 workers. All operation and maintenance activities (with the exception of worker travel to and from the Project site) would occur within the Project site boundaries and therefore would not permanently reduce, disrupt, or preclude access to or visitation of the surrounding hills. No impact would occur.

***Impact RC-3: Construction or operation and maintenance activities would increase the use of established recreational facilities such that substantial physical deterioration would occur or be accelerated (Class III)***

The Revised Project would require a peak daily workforce of up to 550 workers, compared to a peak daily workforce of 200 workers under the Approved Project. Some of these workers could require temporary housing for the duration of the approximately 18-month construction period depending on the distance of their commute. A portion of these workers could choose to camp in the surrounding hills in lieu of other temporary housing options, which is an impact that was discussed and analyzed in the 2010 Final EIR. As the 2010 Final EIR explained, while BLM does allow camping in the surrounding hills, camping is limited to 15 days for every three month period and all campers must abide by BLM camping rules and regulations. After the expiration of the 15-day limit, any workers who had chosen to camp would be forced to find alternative temporary housing. This 15-day restriction would ensure that even if a greater portion of the Revised Project workforce chose to camp in the surrounding hills during Project construction, this increased use of the recreational facilities would be adverse but less than significant (Class III).

Operation and maintenance staff would be the same as described for the Approved Project and potential impacts to recreational facilities from operation and maintenance of the Project would remain adverse but less than significant (Class III).

***Impact RC-4: Construction or operation and maintenance activities would change the character of a recreational area or program, diminishing its recreational value (Class III)***

Construction, operation, and maintenance of the Revised Project would change the character of Panoche Valley and the surrounding hills, which support a variety of recreational opportunities. Traffic and noise impacts would be shorter but more intense under the Revised Project compared to the Approved Project. The noise caused by construction could frighten or displace wildlife, including birds. Construction noise could also impact the recreational experience for campers and hikers in the surrounding hills although only daytime noise levels would be affected by construction. The change in daytime noise levels would be small at the distant surrounding hills and would not substantially diminish

the value of surrounding recreational areas. The largest long-term change to the character of the Project site and the surrounding hills would be visual change caused by Project structures and night lighting. Project structures, including PV panels and substation equipment, could be seen by recreational users of the surrounding hills. The reduction in the size of the Project footprint would not result in a substantially smaller visual impact than that which was described for the Approved Project. Night lighting would be minimal and would be limited to safety and security lighting at the O&M building. Motion sensor lighting at each power block would no longer be included under the Revised Project. Night lighting would not adversely impact stargazing activities. Overall, impacts to recreational areas and programs from Revised Project construction and operation would remain adverse but less than significant (Class III).

***Impact RC-5: Construction or operation and maintenance would result in the degradation or loss of designated wilderness lands or a wilderness study area (No Impact)***

The Panoche Hills contain two designated WSAs, the Panoche Hills WSA and the Panoche Hills South WSA. The WSAs are managed as de facto wilderness by the BLM, and motorized access is not permitted. The Revised Project would be constructed in a shorter period of time than the Approved Project, and the compressed construction schedule would result in higher levels of construction noise. Given that WSAs would be more than three miles from Project construction activities and traffic on roadways, and that the vast majority of construction noise would occur during daytime hours, construction would not substantially change the ambient noise levels of the WSAs. The Revised Project would not result in significant noise or visual impacts to the WSAs (additional information on these impacts appears in Section C.2, Aesthetics and Section C.11, Noise). During operation of the Revised Project, the noise and visual impacts to WSAs would be less than those of the Approved Project. As such, construction, operation, and maintenance would not affect their existing resources or management. No impacts to WSAs would occur.

## C.10.3.4 Changes to Adopted Mitigation Measures

There have been no changes to the land use and recreation mitigation measures that were adopted in 2010. The adopted measures are presented for reference only in Appendix 3.

## C.10.3.5 PG&E Upgrades Impacts

The temporary and permanent land use and recreation impacts for the PG&E Upgrades are analyzed in this section. This analysis is based on the impact statements defined for the solar project, but only two impacts apply to the PG&E Upgrades and are evaluated. Most impacts addressed for the solar project would not occur as a result of construction or operation of the PG&E Upgrades due to the temporary nature of the construction activities and the small permanent changes to PG&E facilities that would result. The following five impacts would not occur as a result of construction or operation of the PG&E Upgrades:

- Impact LU-1: Construction would temporarily disrupt, displace, or divide land uses
- Impact LU-2: Operation and maintenance of the project would permanently disrupt, displace, or divide land uses
- Impact RC-2: Operation and Maintenance would permanently reduce, disrupt, or preclude access and visitation to established recreational areas
- Impact RC-3: Construction or operation and maintenance activities would increase the use of established recreational facilities such that substantial physical deterioration would occur or be accelerated

- Impact RC-5: Construction or operation and maintenance would result in the degradation or loss of designated wilderness lands or a wilderness study area

***Impact RC-1: Construction activities would temporarily reduce, disrupt, or preclude access and visitation to established recreational areas (Class III)***

Construction of the PG&E Upgrades would occur over a period of 12 to 16 weeks. Stringing of the new OPGW wire would occur along 17 miles of PG&E's existing Moss Landing – Panoche 230 kV transmission line. Construction work for microwave towers is described in Section B.11.2.1 of the Project Description. Approximately 6 miles (in both Fresno and San Benito Counties) as well as a temporary work site associated with a new microwave tower installation at Panoche Mountain would be on federal lands administered by the U.S. Bureau of Land Management (BLM).

Construction traffic would utilize local roadways in and around the Panoche and Tumey Hills. This increased traffic would temporarily disrupt access to the surrounding hills and increase travel times for visitors (such as hikers, campers, hunters, and wildlife viewers). However, due to the short construction period and the small number of construction vehicles, this impact would be adverse but less than significant (Class III).

***Impact RC-4: Construction or operation and maintenance activities would change the character of a recreational area or program, diminishing its recreational value (Class III)***

The addition of new microwave towers would result in visual changes that could negatively impact recreational users of the surrounding hills, including campers, hikers, and birdwatchers. The proposed new microwave communication towers at both Panoche Mountain and the Revised Project site would be visible from the Panoche and Tumey Hills recreational areas. Because the Panoche Mountain tower would be located adjacent to two existing towers, this impact of this component would be less than significant (Class III).

The proposed microwave tower adjacent to the project substation would be approximately 100 feet tall, and would be located near the tubular steel poles that would interconnect the PG&E transmission line to the project substation. The tower may require night lighting based on FAA requirements. The proposed substation for the project would include electrical equipment that would be up to 35 feet tall, and there would be up to 8 new steel transmission poles to interconnect the solar project with the substation, each about 85 feet tall. Due to the height of Revised Project structures adjacent to the microwave tower and the distance between recreational users of the surrounding BLM lands and the proposed new microwave tower (approximately 3 miles or more), this impact would be adverse but less than significant (Class III).

## C.10.3.6 Cumulative Impacts

The projects that have been constructed or proposed in the area of potential cumulative effects have changed since 2010, as described in Section D. However, even considering the new project list, the mitigation measures recommended under Impact LU-1, above, as well as traffic mitigation measures, would reduce the contribution of the Revised Project to cumulative impacts to less than significant (Class II). These measures require a construction liaison, advance notification of construction, quarterly construction updates, and a traffic control plan. All land use and recreation impacts related to the PG&E Upgrades would be less than significant (Class III). In addition, the listed projects do not have substantial geographic overlap with the Revised Project and the PG&E Upgrades. Operation and maintenance of the Revised Project and the PG&E Upgrades would not permanently disrupt, displace, or divide land uses or

restrict recreational opportunities, nor would it combine with projects outside the Project boundaries to disrupt, displace, or divide land uses. Other projects in the area of potential cumulative effects generally would implement mitigation measures similar to those described for Impact LU-1. With implementation of mitigation, overall cumulative land use impacts would be less than significant (Class II).

## C.10.4 Summary of Impacts

The significance of impacts for land use and recreation for the Revised Project and for the PG&E Upgrades is summarized in Sections C.10.4.1 and C.10.4.2. Section C.10.4.3 summarizes the impacts of all Project components.

### C.10.4.1 Revised Solar Project

Analysis of the Revised Project results in no changes to the significance of impacts from the conclusions of the 2010 Final EIR. The impacts summarized in Table C.10-1 remain accurate.

Of the impacts identified in Section C.10.3 (Solar Project Impacts), the Revised Project would result in significant adverse effects related to Impact LU-1 (Construction would temporarily disrupt, displace or divide land uses) and Impact LU-3 (Cumulative land use impacts). With implementation of adopted Mitigation Measures LU-1.1 through LU-1.3, and implementation of mitigation measures presented in Sections C.4 (Air Quality), C.11 (Noise) and C.14 (Transportation and Circulation), Impacts LU-1 and LU-3 would be reduced to less than significant levels (Class II). All other impacts associated with the Revised Project either would be less than significant (Class III) or would not occur.

### C.10.4.2 PG&E Upgrades

The PG&E Upgrades would result in temporary disruption of access to surrounding recreational areas due to construction activity. The visual character of the surrounding recreational areas would be altered somewhat by construction of new microwave communication towers. These impacts would be adverse but less than significant (Class III). No other impacts would occur.

### C.10.4.3 Overall Significance of Impacts

There are no significant impacts to land use or recreation that result from either the Revised Project or the PG&E Upgrades. Three land use mitigation measures adopted in 2010, as well as measures adopted for noise, traffic, and air quality, would reduce potentially significant impacts associated with solar project construction and operation to less than significant levels (Class II). All land use and recreation impacts related to the PG&E Upgrades would be less than significant (Class III). With implementation of mitigation, overall cumulative land use impacts would be less than significant (Class II).

## C.10.5 References

BLM. 2014. Hollister Field Office – Panoche Hills. [online]: http://www.blm.gov/ca/st/en/fo/hollister/recreation/panoche.html. Accessed November 20, 2014.

BLM. 2012. Notice of Intent to Prepare an EIS on a RMP Amendment. https://www.federalregister.gov/articles/2012/09/18/2012-22939/notice-of-intent-to-prepare-a-resource-management-plan-amendment-for-the-southern-diablo-mountain. Accessed November 2014.

CDE (California Department of Education). 2014. School Accountability Report Card, Reported Using Data from the 2012–13 School Year. Published During 2013–14" http://www.sbcoe.org/files/user/22/file/Panoche%20SARC%20_13.pdf

CPUC. 2014. General Order 95. Rules for Electric Transmission Line Construction. http://www.cpuc.ca.gov/gos/GO95/go_95_startup_page.html. Updated 2014. Accessed November 21, 2014.

CPUC. 1995. General Order 131D. Rules Relating to the Planning and Construction of Electric Generation, Transmission/Power/Distribution Line Facilities and Substations Located in California http://docs.cpuc.ca.gov/PUBLISHED/Graphics/589.PDF. Accessed November 21, 2014.

Fresno County. 2000a. Fresno County General Plan Agriculture and Land Use Element 2000.

Fresno County. 2000b. Fresno County General Plan Open Space and Conservation Element 2000.

# C.11 Noise

This section analyzes whether the Revised Project and PG&E Upgrades would result in any new significant impacts to noise that were not previously identified and disclosed in the 2010 Final EIR, or whether there would be a substantial increase in the severity of any previously identified impacts to noise. As part of this analysis, the section considers changes to the existing noise levels in the study area, changes to the intensity or duration of noise generated by the project, and changes to potential noise impacts and related mitigation measures.

## C.11.1 Environmental Setting

This section describes changes to the environmental setting that have occurred since 2010. Section C.11.1.1 describes changes to the environmental setting that was presented in the 2010 Final EIR. Section C.11.1.2 describes the environmental setting for the area surrounding the PG&E transmission system upgrades.

### C.11.1.1 Revised Solar Project

The environmental setting for noise impacts related to the Revised Project site has remained substantially unchanged since approval of the 2010 Final EIR. The Panoche Valley remains generally undeveloped and pastoral in character, with scattered residential and agricultural buildings located around the valley. No new development has occurred, and no major new structures have been built in the valley. No new sensitive receptors have been identified in the project area, and all of the residences that were identified within one mile of the Approved Project still lie within one mile of the Revised Project. Nighttime noise restrictions defined by the County remain unchanged.

### C.11.1.2 PG&E Upgrades

The PG&E Upgrades associated with the Revised Project include installation of approximately 17 miles of optical ground wire (OPGW) on existing transmission towers between the Panoche Valley Solar Project site and the existing Panoche Substation in Fresno County. The telecommunications system upgrades also include construction of up to three new microwave communication towers and upgrades to an existing microwave tower. The PG&E transmission system upgrades would include eight new transmission structures that are required to tie the existing Moss Landing–Panoche 230 kV transmission line into the proposed PG&E switchyard, located within the Revised Project site boundaries. The new transmission structures would be installed by PG&E after site preparation is completed by the Applicant.

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, the Call Mountains (west of the Panoche Valley), Panoche Mountain (east of the Panoche Valley), and the area surrounding the Helm Substation (approximately 13 miles southwest of the City of Fresno).

There are no hospitals, schools, or libraries within one mile of the PG&E ROW or microwave communication tower sites. The Panoche Elementary School is located more than one mile away from the PG&E ROW. Seven residences have been identified within one mile of the PG&E ROW within San Benito County. All seven residences are located south of the existing Moss Landing–Panoche 230 kV transmission line. Five of these residences are located along or just off of Panoche Road in the eastern portion of the Panoche Valley. Two residences are located towards the center of Panoche Valley, southeast of the proposed Panoche Valley Solar Project Substation and microwave tower.

Through a visual review of aerial imagery, two possible residences have been identified within one mile of the PG&E ROW within Fresno County. One possible residence (APN 02706056S) is located adjacent to the PG&E ROW boundary, less than 500 feet northwest of the Panoche Substation. The second possible residence (APN02711001S) is located 0.08 miles north of the centerline of the PG&E ROW near the southwest corner of the intersection of W Panoche Road and Panoche Road.

The PG&E Upgrades are located in agricultural areas and open space used for grazing, other agricultural purposes, and backcountry recreation. Natural noise conditions dominate the area because human activity is so limited, which means ambient noise levels are expected to be approximately 35 dBA Ldn or lower, except in the immediate vicinity of the roads. Noise levels are occasionally elevated due to aircraft over flights and from other nearby activity, like traffic along the local roadways or I-5. Noise near the local roadways varies depending on traffic conditions.

## C.11.2 Applicable Regulations, Plans, and Standards

No changes have occurred to the regulatory setting for noise in San Benito County since 2010. Similar to temporary construction noise regulations in San Benito County, noise generated by daytime construction work is considered exempt in Fresno County because of its temporary nature provided such activities occur between 7:00 a.m. and 7:00 p.m. Monday through Saturday, except federal holidays.

## C.11.3 Environmental Impacts and Mitigation Measures

This section addresses whether the changes to the Approved Project will result in any new significant noise impacts or increase the severity of previously identified noise impacts. Section C.11.3.1 restates the significance criteria used in 2010 to determine whether any project changes result in new or more severe significant impacts to the Revised Project or the PG&E Upgrades. Section C.11.3.2 summarizes the impacts and mitigation measures presented in the 2010 Final EIR for ease of reference. Section C.11.3.3 presents the updated impact analysis for the Revised Project, and Section C.11.3.4 addresses proposed changes to two adopted mitigation measures. Section C.11.3.5 addresses the environmental impacts that would occur as a result of the PG&E Upgrades, and Section C.11.3.6 describes cumulative impacts.

### C.11.3.1 Significance Criteria

The following significance criteria for noise were derived from the Environmental Checklist in CEQA Appendix G. These significance criteria were used for the 2010 Final EIR and are also applied to this Supplemental EIR. They have been amended or supplemented, as appropriate, to address the nature of solar photovoltaic (PV) facilities and transmission line upgrades in general, and the full range of potential impacts related to this Revised Project in particular. An impact of the Revised Project and PG&E Upgrades would be considered significant and would require mitigation if:

- Construction noise would result in a substantial temporary or periodic increase in ambient noise levels which would substantially disturb sensitive receptors.
- Construction noise would violate local rules, standards, and/or ordinances.
- Construction activity would temporarily cause excessive groundborne vibration or groundborne noise.

- Permanent noise levels would substantially increase due to operation of project-related stationary noise sources above levels existing without the project.
- Routine inspection and maintenance activities would substantially increase ambient noise levels in the project vicinity above levels existing without the project.

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

## C.11.3.2 Approved Project Impacts and Mitigation Measures

Table C.11-1 presents a summary of the impacts and mitigation measures applicable to the Approved Project.

**Table C.11-1. Summary of Impacts and Mitigation: Noise**

| Impact No and Text | Mitigation Required | CEQA Conclusion |
|---|---|---|
| Impact NS-1: Construction noise would result in a substantial temporary or periodic increase in ambient noise levels which would substantially disturb sensitive receptors. | NS-1.1: Shield construction staging areas.<br>NS-1.2: Implement noise-reducing features and practices for construction noise.<br>NS-1.3: Provide advanced notice of construction.<br>NS-1.4: Limit pile driving activities.<br>BR-16.2: Minimize impacts of foundation support installations. | Class I |
| Impact NS-2: Construction noise may violate local rules, standards, and/or ordinances. | NS-1.1: Shield construction staging areas.<br>NS-1.2: Implement noise-reducing features and practices for construction noise.<br>NS-1.3: Provide advanced notice of construction.<br>NS-2.1: Limit decommissioning activities to daytime. | Class I |
| Impact NS-3: Construction activity would temporarily cause excessive groundborne vibration or groundborne noise. | None. | Class III |
| Impact NS-4: Permanent noise levels would substantially increase due to operation of project-related stationary noise sources above levels existing without the project. | NS-4.1: Locate PV inverters and transformers away from the project's property line. | Class II |
| Impact NS-5: Routine inspection and maintenance activities would substantially increase ambient noise levels in the project vicinity above levels existing without the project. | NS-5.1: Limit panel washing activities. | Class II for panel washing; Class III for other activities |
| Impact NS-6: Contribute to cumulatively considerable noise levels. | None. | Class III |

## C.11.3.3 Revised Solar Project Impacts

Five noise impacts are addressed in this section; cumulative impacts are evaluated in Section C.11.3.6.

***Impact NS-1: Construction noise would result in a substantial temporary or periodic increase in ambient noise levels which would substantially disturb sensitive receptors (Class I)***

The Revised Project would include installation of approximately 1 million PV panels, compared to the installation of approximately 3 to 4 million PV panels under the Approved Project. The construction schedule for the Revised Project would be compressed to approximately 18 months, which is more akin

to a typical large scale construction project compared to the Approved Project, which proposed a schedule of approximately 5 years. Although construction of the Revised Project would result in a shorter period during which construction noise would occur, the compressed construction schedule would result in higher average daily noise levels due to the additional heavy equipment that would be need to construct the project in a shorter timeframe. Construction would also cause noise off-site, primarily from commuting construction workers and from haul trucks bringing materials to the construction site. The noise level for each haul truck pass-by is between 74 to 76 dBA Lmax. The peak traffic volume for the Revised Project is substantially higher than the peak traffic volume for the Approved Project, and consequently off-site noise for the Revised Project would be higher than the off-site noise levels that were analyzed in the 2010 Final EIR. As noted in the 2010 Final EIR, the existing ambient noise levels in the project area range from 35 dBA Ldn to 60 dBA Ldn along Panoche Road and Little Panoche Road. The 2010 Final EIR also estimated that noise levels generated from construction would be approximately 95 dBA Leq at 50 feet from the construction activity and would range from 52 dBA Leq to 83 dBA Leq at the nearest sensitive receptor (which is located approximately 200 feet from the closest work area), which could result in a substantial temporary increase of the existing ambient noise levels by more than 5 dBA Ldn. While the Revised Project construction activities would be intermittent and more short-term and temporary in nature than the Approved Project, on-site and off-site construction noise would be considered significant and unavoidable. Although this impact cannot be reduced to less than significant, several mitigation measures are recommended to reduce the severity of the impact, including: Mitigation Measures NS-1.1 through NS-1.4, Mitigation Measure BR-16.2, Mitigation Measures TR-1.1 and TR-1.4, and Applicant Proposed Measure (APM) N-1 (restrict use of fuel-operated generators between 7:00 p.m. and 7:00 a.m.; full text of all APMs is in Section B.10). Residual construction noise levels from the Revised Project would exceed ambient noise levels by more than 5 dBA Ldn and would remain significant and unavoidable (Class I).

***Impact NS-2: Construction noise may violate local rules, standards, and/or ordinances (Class I)***

Construction of the Revised Project would involve construction on a smaller area over a shorter period of time (as described above for Impact NS-1). However, the peak construction activity noise levels for the Revised Project would increase compared to the Approved Project. Similar to the Approved Project, the operation of heavy equipment during Revised Project construction, assuming a worst case scenario of simultaneous pile driving and grading activities, is expected to generate a combined maximum noise level of up to approximately 95 dBA Leq at 50 feet from the construction activity and between 52 dBA Leq to 83 dBA Leq at the nearest sensitive receptor even with the increase in the amount of heavy equipment required for the Revised Project. Peak noise levels at sensitive receptors near the Revised Project site would be comparable to peak noise levels under the Approved Project, but these peak levels may occur more frequently during the Revised Project construction period than they would have occurred during construction of the Approved Project. While impacts are expected to be significant and unavoidable, it is important to note that the Revised Project will be constructed in a much shorter timeframe (roughly 3.5 years less than the Approved Project) and San Benito County and Fresno County exempt construction noise for applicable noise standards. Nonetheless and due to the rural nature of the Panoche Valley and the increase in the number of amount of heavy equipment on-site during construction, construction noise levels from the Revised Project, like the Approved Project, would be considered significant and unavoidable even though construction noise levels would be reduced with implementation of Mitigation Measures NS-1.1 through NS-1.4, Mitigation Measure BR-16.2, Mitigation Measures TR-1.1 and TR-1.4, and APM N-1. Construction noise would continue to exceed the County noise level standards at various times throughout the 18-month construction period resulting in a significant and unavoidable impact (Class I).

***Impact NS-3: Construction activity would temporarily cause excessive groundborne vibration or groundborne noise (Class III)***

The same impact-pile driving or drilling for the Approved Project would be utilized for the Revised Project for installation of the PV array foundation support posts and could cause vibration impacts at close distances. Implementation of Mitigation Measure NS-1.4 would also introduce the potential use of sonic or vibratory pile drivers, which would also result in vibration impacts. The Revised Project would result in 1,888 acres of permanent disturbance, compared to 2,203 acres under the Approved Project. The number of installed PV panels and therefore the intensity of groundborne vibration or groundborne noise impacts would be reduced. However, Revised Project construction activities would still result in minor amounts of groundborne vibration. These vibrations would attenuate rapidly from the source and would not be perceptible outside of the construction areas. This impact would remain less than significant (Class III).

***Impact NS-4: Permanent noise levels would substantially increase due to operation of project-related stationary noise sources above levels existing without the project (Class II)***

The long-term noise resulting from operation of the project would result from equipment at the substation and from the approximately 151 inverters and transformers that would be located at regular intervals within the solar field. The Revised Project substation components would be the same as described for the Approved Project and would result in adverse but less than significant noise impacts (Class III).

Although fewer inverters and transformers would be installed under the Revised Project compared to the Approved Project, the inverters and transformers that would be installed for each power array could potentially exceed San Benito County's daytime noise level standard of 45 dBA Leq for rural residential land uses because they are not proposed to be enclosed. Implementation of Mitigation Measure NS-4.1 (Locate PV inverters and transformers away from the project's property line) as modified in Section C.11.3.2 would reduce the potential for permanent noise levels to exceed the County's daytime noise level standards or to exceed the ambient noise levels by more than 5 dBA Ldn at the nearest residences to less than significant (Class II).

***Impact NS-5: Routine inspection and maintenance activities would substantially increase ambient noise levels in the project vicinity above levels existing without the project (Class II)***

With the exception of panel washing, all operational noise associated with inspection and maintenance of the Revised Project would be similar to that described in the 2010 Final EIR, and would remain adverse but less than significant (Class III). As defined for the 2010 Final EIR, washing of panels outside of the daytime hours (7:00 a.m. to 7:00 p.m.) could result in significant operational noise impacts. Implementation of Mitigation Measure NS-5.1 (Limit panel washing activities) would reduce this potential adverse impact to less than significant (Class II).

## C.11.3.4 Changes to Adopted Mitigation Measures

The applicant has proposed two changes to the mitigation measures adopted from the 2010 Final EIR for noise. These changes are shown below (modified text is shown in strikeout for removed text and underline for added text). Mitigation Measures and APMs not shown in this section have not changed and are presented for reference only in Appendix 3.

The changes to Mitigation Measure NS-1.3 reflect the changes to the project construction schedule and would not increase the severity of any impacts. In the Revised Project, the applicant has proposed not to

enclose the PV inverters and transformers. As a result, Mitigation Measure NS-4.1 is proposed to be modified as shown below. With this modification, the Revised Project impacts remain less than significant (Class II) because the same noise performance standards that were required for the enclosed inverters and transformers are required for the unenclosed inverters and transformers.

**MM NS-1.3** **Provide advance notice of construction.** The Applicant shall provide advance notice of construction and decommissioning ~~for each phase (Phases 1 through 5)~~ between two and four weeks prior to the start of construction or decommissioning activities to all residences located within 5 miles of the project phase boundary, and the Principal of the Panoche Elementary School. The notices shall be mailed directly to residences and the Principal of the Panoche Elementary School, as well as posting signs at the project site in areas accessible to the public. The announcement shall state where and when construction would occur; provide tips on reducing noise intrusion (e.g., closing windows facing the planned construction); and provide a point of contact for any noise complaints. The Applicant shall provide to the Department of Planning and Building (Environmental Monitor) within 48 hours of any complaints received a report that documents the complaints and the strategy for resolution of any noise complaints, which may include limiting the hours of construction in the particular location of concern, putting up additional noise barriers, or otherwise implementing means to reduce and resolve to the extent feasible the issue brought forth. The County's Environmental Monitor shall verify implementation of agreed upon strategy.

**MM NS-4.1** **Locate PV inverters and transformers away from the project's property line.** ~~Each inverter/transformer enclosure shall be placed~~ Locate PV inverters and transformers away from the project's property line at least 180 feet from the project's property line and at least 300 feet apart from each other or as ~~, unless as follows. If multiple inverter/enclosures are to be placed immediately adjacent to each other, then the nearest enclosure shall be at least 480 feet from the project's property line. These distances are~~ needed to meet the County's daytime hourly noise level standard of 45 dBA Leq at the project's property line. Should hourly daytime noise level standards (45 dBA Leq) be exceeded or ambient noise levels increase by more than 5 dBA Ldn, enclosures or other ~~operations utilizing the offending inverters and transformers shall stop until adequate~~ noise attenuation measures ~~are~~ will be installed to meet these requirements. Any measure installed shall remain in good working order throughout project operations.

## C.11.3.5 PG&E Upgrades Impacts

The temporary and permanent noise impacts for the PG&E Upgrades are analyzed in this section. This analysis is based on the impact statements defined for the solar project, but only two impacts apply to the PG&E Upgrades and are evaluated. The following three impacts would not occur as a result of construction or operation of the PG&E Upgrades:

- Impact NS-3: Construction activity would temporarily cause excessive groundborne vibration or groundborne noise
- Impact NS-4: Permanent noise levels would substantially increase due to operation of project-related stationary noise sources above levels existing without the project
- Impact NS-5: Routine inspection and maintenance activities would substantially increase ambient noise levels in the project vicinity above levels existing without the project

***Impact NS-1: Construction noise would result in a substantial temporary or periodic increase in ambient noise levels which would substantially disturb sensitive receptors (Class III)***

Construction of the PG&E Upgrades would include the use of heavy machinery, including helicopters, for a period of 12 to 16 weeks, approximately 2 to 3 weeks at any given work area along the alignment. These construction activities (especially the use of helicopters) could result in a temporary increase in ambient noise levels. However, construction activities would be very temporary and limited to daytime hours (generally 7:00 a.m. to 7:00 p.m.) and common operating procedures to reduce noise (i.e., mufflers, and engine shrouds, limits on idling time of construction equipment) would be utilized to reduce noise. As such, this impact would be adverse, but less than significant (Class III).

***Impact NS-2: Construction noise may violate local rules, standards, and/or ordinances (Class III)***

As stated above for Impact NS-1, construction of the PG&E Upgrades would involve the use of heavy equipment, including helicopters. However, these activities would be temporary and would occur during daytime hours (generally 7:00 a.m. to 7:00 p.m.) and would be exempt from both San Benito and Fresno County noise ordinances. This impact would be adverse but less than significant (Class III).

### C.11.3.6 Cumulative Impacts

The projects that have been constructed or proposed in the area of potential cumulative effects have changed since 2010, as described in Section D. However, even considering the new project list, the Revised Project would not combine with impacts of other projects because the timeframe for construction of the other projects would not overlap or the construction activities associated with other projects would occur at a distance from the Revised Project and PG&E Upgrades such that the noise impacts of those other projects would not combine with the noise impacts of the Revised Project or the PG&E Upgrades. Therefore, the contribution of the Revised Project and PG&E Upgrades' construction noise generation would not result in a cumulatively significant impact (Class III).

## C.11.4 Summary of Impacts

The significance of impacts for noise for the Revised Project and for the PG&E Upgrades is summarized in Sections C.11.4.1 and C.11.4.2. Section C.11.4.3 summarizes the impacts of all project components.

### C.11.4.1 Revised Solar Project

There are no changes to the significance of impacts from the conclusions of the 2010 Final EIR. The impacts summarized in Table C.11-1 remain accurate.

Mitigation Measures NS-1.1 through NS-1.4, BR-16.2, and NS-2.1 are recommended to reduce construction and decommissioning noise levels both on-site and off-site from delivery of equipment and materials; however, even with implementation of these measures, construction activities would result in a significant increase over ambient noise levels and would exceed the County's noise level standards (Class I). Impacts related to groundborne vibration and noise during construction have been found to be less than significant as groundborne vibration or groundborne noise would attenuate rapidly and would not be expected to affect receptors outside of the work areas (Class III). With implementation of Mitigation Measure NS-4.1 (Locate PV inverters and transformers away from the project's property line and other similar equipment), operational noise impacts associated with the solar project stationary noise sources would be less than significant (Class II). Operational activities would not result in a measureable increase in ambient noise levels in the project area; however, panel washing activities and

periodic maintenance activities, especially those occurring at night near the project's property line, could exceed County standards and/or exceed ambient noise levels. With implementation of Mitigation Measure NS-5.1 (Limit panel washing activities), noise impacts from these activities would be reduced to a less than significant level (Class II).

## C.11.4.2 PG&E Upgrades

Operation and maintenance of the PG&E Upgrades would not result in any noise impacts. Construction of the PG&E Upgrades would result in temporary, adverse, but less than significant impacts to ambient noise levels (Class III).

## C.11.4.3 Overall Significance of Impacts

The overall impacts of the solar project and the PG&E Upgrades would be significant and unavoidable (Class I). For the solar project, construction noise impacts would be significant and unavoidable (Class I). Operational noise impacts would be less than significant with implementation of the adopted mitigation measures, the proposed changes to two of the adopted mitigation measures, and adopted AMPs (Class II). All noise impacts for the PG&E Upgrades would be less than significant (Class III). Cumulative impacts for noise would be less than significant (Class III).

# C.12 Population and Housing

This section analyzes whether the Revised Project and PG&E Upgrades would result in any new significant impacts to population and housing that were not previously identified and disclosed in the 2010 Final EIR, or whether there would be a substantial increase in the severity of any previously identified impacts to population and housing. As part of this analysis, the section considers changes to the unemployment rates in the three-county study area, changes to the housing vacancy rates in the three-county study area, and changes to population growth in the three-county study area.

Data sources that were used for this analysis include population and housing data from the California Department of Finance (DOF, 2014) and employment data by industry from the California Employment Development Department (EDD, 2014).

## C.12.1 Environmental Setting

This section describes changes to the environmental setting that have occurred since 2010. Section C.12.1.1 describes any changes to the environmental setting that was presented in the 2010 Final EIR. Section C.12.1.2 describes the environmental setting for the area surrounding the PG&E Upgrades.

### C.12.1.1 Revised Solar Project

The environmental setting for population and housing for the Revised Project site has remained substantially unchanged since approval of the Final EIR. Population growth in the three counties that were analyzed in the Final EIR has occurred at the anticipated rate. Unemployment rates have decreased but remain elevated. Housing vacancy rates have increased since approval of the Final EIR. The size of the peak daily construction workforce has changed from 200 workers under the Approved Project to 550 workers under the Revised Project. However, the duration of construction activities has been reduced, which reduces the duration of temporary population increase and temporary housing demand. The size of the permanent labor force required for operation has not changed. No on-site worker housing would be built under either the Approved Project or the Revised Project.

### C.12.1.2 PG&E Upgrades

The PG&E Upgrades associated with the Revised Project include installation of approximately 17 miles of optical ground wire (OPGW) on existing transmission towers between the Panoche Valley Solar Project site and the existing Panoche Substation in Fresno County. The telecommunications system upgrades also include construction of up to three new microwave communication towers and upgrades to an existing microwave tower. The PG&E transmission system upgrades would include eight new transmission structures that are required to tie the existing Moss Landing–Panoche 230 kV transmission line into the proposed PG&E switchyard, located within the Revised Project site boundaries. The new transmission structures would be installed by PG&E after site preparation is completed by the Applicant.

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, the Call Mountains (west of the Panoche Valley), Panoche Mountain (east of the Panoche Valley), and the area surrounding the Helm Substation (approximately 13 miles southwest of the City of Fresno).

Upgrades would be constructed by existing PG&E staff over the course of 12 to 16 weeks. In the event that additional staff is required on a temporary basis, this staff would be drawn from one or more of the

three counties that were considered in the 2010 Final EIR, including San Benito, Santa Clara, and Fresno Counties. Housing vacancy rates in those three counties have increased since approval of the Final EIR.

## C.12.2 Applicable Regulations, Plans, and Standards

No changes have occurred to the regulatory setting for population and housing since 2010.

## C.12.3 Environmental Impacts and Mitigation Measures

This section addresses whether the changes the Approved Project would result in a new or significant agricultural impacts or increase the severity of previously identified agricultural impacts. Section C.12.3.1 restates the significance criteria used in 2010 to determine whether any project changes result in any new or more severe significant impacts. Section C.12.3.2 summarizes the impacts and mitigation measures presented in the 2010 Final EIR for ease of reference. Section C.12.3.3 presents the updated impact analysis for the Revised Project, and Section C.12.3.4 addresses the impacts of a proposed change in a previously adopted APM. Section C.12.3.5 addresses the environmental impacts that would occur as a result of the PG&E Upgrades, and Section C.12.3.6 describes cumulative impacts.

### C.12.3.1 Significance Criteria

The following significance criteria for population and housing were derived from the Environmental Checklist in CEQA Appendix G. These significance criteria were used for the 2010 Final EIR and are also applied to this SEIR. They have been amended or supplemented, as appropriate, to address the nature of solar photovoltaic (PV) facilities and transmission line upgrades in general, and the full range of potential impacts related to this Revised Project in particular. An impact of the Revised Project and PG&E Upgrades would be considered significant and would require mitigation if it would:

- Induce substantial population growth in an area, either directly or indirectly.
- Displace substantial numbers of people and/or existing housing, necessitating the construction of replacement housing elsewhere.

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

### C.12.3.2 Approved Project Impacts and Mitigation Measures

Table C.12-1 presents a summary of the impacts and mitigation measures applicable to the Approved Project.

**Table C.12-1. Summary of Impacts and Mitigation: Population and Housing**

| Impact No. and Text* | Mitigation Required | CEQA Conclusion |
|---|---|---|
| Impact PH-1: Project labor force requirements would create a substantial demand for labor or a change in local employment. | None | Class IV |
| Impact PH-2: Project labor force would require housing that exceeds the supply of local housing or temporary housing facilities. | None | Class III |
| Impact PH-3: The project would induce substantial population growth. | None | Class III |
| Impact PH-5: Contribute to cumulatively considerable population and housing impacts. | None | Class III |

*Note that Impact PH-4 was omitted from the Final EIR.

## C.12.3.3 Revised Solar Project Impacts

Three population and housing impacts are addressed in this section; cumulative impacts are evaluated in Section C.12.3.6.

***Impact PH-1: Project labor force requirements would create a substantial demand for labor or a change in local employment (Class IV)***

The required permanent labor force remains unchanged. The size of the peak daily construction work-force has increased from 200 workers to 550 workers. The duration of construction labor demand has decreased from approximately 5 years to approximately 18 months. Based on a review of employment data from the California Employment Development Department, unemployment rates in the three-county study area have declined since publication of the 2010 Final EIR but remain elevated (EDD, 2014). The overall unemployment rate for Fresno County has declined from 18.7% in 2008 (as reported in the 2010 Final EIR) to 10.2% in October of 2014. Construction labor employment for Fresno County has increased from 11,900 in 2008 to 14,900 in October of 2014. The overall unemployment rate for the San Jose-Sunnyvale-Santa Clara Metropolitan Statistical Area (San Benito and Santa Clara Counties) has declined from 12.3% in 2008 (as reported in the 2010 Final EIR) to 5.2% in October of 2014. Construction labor employment for San Benito and Santa Clara Counties has increased from 28,800 in 2008 to 39,900 in October of 2014. Although unemployment has decreased and construction employment has increased in the three-county study area, unemployment rates remain elevated and the labor demand that would be caused by construction of the Revised Project would be a beneficial impact to the economies of the three-county study area. This impact would remain beneficial (Class IV).

***Impact PH-2: Project labor force would require housing that exceeds the supply of local housing or temporary housing facilities (Class III)***

No new housing would be constructed in connection with the Revised Project. Housing vacancy rates have increased substantially from 2010 to 2014 in all three counties that are included in the Project study area (DOF, 2014). In Fresno County, the vacancy rate has increased from 6.4% to 8.3%. In San Benito County, the vacancy rate has increased from 3.8% to 6.0%. In Santa Clara County, the vacancy rate has increased from 2.3% to 4.4%. Neither the temporary nor the permanent workforce associated with the Revised Project would place a demand on housing that would exceed local supply. This impact would remain less than significant (Class III).

***Impact PH-3: The project would induce substantial population growth (Class III)***

Although the peak daily construction workforce has increased from 200 workers to 550 workers, these workers would be drawn primarily from the existing population within the three-county Project study area. Also, any construction workers that relocate due to the Revised Project would represent a tempo-rary increase in population. The size of the permanent labor force required for operation has not changed. Therefore, this impact would remain less than significant (Class III).

## C.12.3.4 Changes to Adopted Mitigation Measures

The analysis of Population and Housing in the 2010 Final EIR resulted in no recommended mitigation measures. There were no mitigation measures presented in the Final EIR, and no new mitigation measures have been proposed for the Revised Project. The Applicant has proposed one change to an Applicant Proposed Measure, shown below. Deleted text is shown in strikethrough and added text is

shown in underline. Mitigation Measures and APMs not shown in this section have not changed and are presented for reference only in Appendix 3.

**APM PH-1** At least thirty days prior to commencing construction ~~of each phase~~, the applicant will provide construction contractors ~~for that phase~~ with information, including general information on the facility, telephone numbers, addresses and contact information, on temporary housing opportunities~~, including short-term rental housing, hotels, motels, RV parks, and campsites with the ability to accommodate workers for periods of longer than one month~~ in coordination with San Benito County and the San Benito County Chamber of Commerce. The information will be provided on a website, pamphlet or other written material.

### C.12.3.5 PG&E Upgrades Impacts

No impacts to population and housing would occur as a result of the PG&E Upgrades. Construction would be performed by existing PG&E staff over a period of 12 to 16 weeks. Construction activities would not create a substantial demand for labor or a change in local employment. No additional housing would be required, and the supply of local and temporary housing would not be exceeded. Construction of the PG&E Upgrades would not induce population growth, and would not contribute to cumulatively considerable population and housing impacts.

### C.12.3.6 Cumulative Impacts

The projects that have been constructed or proposed in the area of potential cumulative effects have changed since 2010, as described in Section D. However, even considering the new project list, the Revised Project would not combine with impacts of the PG&E Upgrades or other projects to result in a cumulatively considerable impact (Class III).

## C.12.4 Summary of Impacts

The significance of impacts for population and housing for the Revised Project and for the PG&E Upgrades is summarized in Sections C.12.4.1 and C.12.4.2. The overall significance of impacts is described in Section C.12.4.3.

### C.12.4.1 Revised Solar Project

There are no changes to the significance of impacts from the conclusions of the Final EIR. The impacts summarized in Table C.12-1 remain accurate.

### C.12.4.2 PG&E Upgrades

Construction of the PG&E Upgrades would be accomplished using existing staff and would occur over a period of 12 to 16 weeks. Construction and operation of the PG&E Upgrades would not result in any impacts to population and housing and no mitigation is required.

### C.12.4.3 Overall Significance of Impacts

The overall impacts of the solar project and the PG&E Upgrades would be less than significant (Class III). The PG&E Upgrades would not result in any impacts to population and housing, and would not combine with the impacts of the solar project to result in any impacts. For the solar project, impacts to

employment (Impact PH-1) were found to be beneficial, and not adverse, as the Revised Project would create jobs and reduce unemployment. Impacts resulting from the workforce exceeding the capacity for housing (Impact PH-2) and substantially increasing the local population (Impact PH-3) would be less than significant with implementation of APM PH-1 (Provide construction workers with information about available temporary housing). The full text of this measure is shown in Section B.10 (Applicant Proposed Measures) of the Project Description in this Supplemental EIR. The cumulative impacts of both the Revised Project and the PG&E Upgrades would be less than significant (Class III).

## C.12.5 References

DOF (State of California, Department of Finance). 2014. E-5 Population and Housing Estimates for Cities, Counties and the State — January 1, 2011–2014. Sacramento, California, May 2014.

EDD (State of California, Employment Development Department). 2014. Employment by Industry Data. [online]: http://www.labormarketinfo.edd.ca.gov/LMID/Employment_by_Industry_Data.html. Accessed 20 November 2014.

# C.13 Public Services, Utilities, and Service Systems

This section analyzes whether the Revised Project and PG&E Upgrades would result in any new significant impacts to public services, utilities, and service systems that were not previously identified and disclosed in the 2010 Final EIR, or whether there would be a substantial increase in the severity of any previously identified impacts to public services, utilities, and service systems. As part of this analysis, the section considers changes public services, utilities, and service systems in the project area and changes in demand for public services that would result from the implementation of the Revised Project and PG&E Upgrades.

Data sources that were used for this analysis include law enforcement data from the Bureau of Land Management and the Fresno County Sheriff's Office (BLM, 2014; Fresno County Sheriff's Office, 2014), fire protection data from the Fresno County Fire Protection District (Fresno County FPD, 2014), and school data from the Fresno County Office of Education (FCOE, 2006).

## C.13.1 Environmental Setting

This section describes changes to the environmental setting that have occurred since 2010. Section C.13.1.1 describes any changes to the environmental setting that was presented in the 2010 Final EIR. Section C.13.1.2 describes the environmental setting for the area surrounding the PG&E transmission system upgrades.

### C.13.1.1 Revised Solar Project

The environmental setting for public services, utilities, and service systems for the Revised Project site has remained substantially unchanged since approval of the 2010 Final EIR. Panoche Valley remains generally undeveloped and pastoral in character. No new development has occurred, and no major new structures have been built in the valley. Grazing remains the primary land use in the area. The existing police protection, fire protection, schools, and hospitals remain as described in the Final EIR.

In the 2010 Final EIR, the San Benito County Fire Department was described has having fire protection responsibility for the Panoche Valley. Hollister Fire Department is now the fire service provider for the area.

### C.13.1.2 PG&E Upgrades

The PG&E Upgrades associated with the Revised Project include installation of approximately 17 miles of optical ground wire (OPGW) on existing transmission towers between the Panoche Valley Solar Project site and the existing Panoche Substation in Fresno County. The telecommunications system upgrades also include construction of up to three new microwave communication towers and upgrades to an existing microwave tower. The PG&E transmission system upgrades would include eight new transmission structures that are required to tie the existing Moss Landing–Panoche 230 kV transmission line into the proposed PG&E switchyard, located within the Revised Project site boundaries. The new transmission structures would be installed by PG&E after site preparation is completed by the Applicant. It is anticipated that these upgrades would be constructed by existing PG&E staff over the course of 12 to 16 weeks.

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, the Call Mountains (west

of the Panoche Valley), Panoche Mountain (east of the Panoche Valley), and the area surrounding the Helm Substation (approximately 13 miles southwest of the City of Fresno).

The upgraded portion of the Panoche–Moss Landing transmission line runs east to west, with approximately 10 miles located in Fresno County and 7 miles located in San Benito County. The public services, utilities, and service systems for San Benito County remain as described in the 2010 Final EIR. For the portion within Fresno County, law enforcement would be provided by the Fresno County Sheriff's office, which is divided into smaller Patrol Areas. The PG&E ROW is located within Patrol Area 1. The Area 1 substation is located in the City of San Joaquin and is staffed by approximately 40 officers. About 8 miles of the upgraded transmission line (in both Fresno and San Benito Counties) are on federal lands administered by the U.S. Bureau of Land Management (BLM). The BLM's Hollister Field Office has a staff of Law Enforcement Rangers who provide for the safety of BLM employees and public land users. For portions of the transmission line upgrades, response times from law enforcement entities may exceed one hour. Fire protection for the Fresno County portion of the upgraded transmission line would be provided by the Fresno County Fire Protection District (FCFPD). For wildland fires, the FCFPD would coordinate with the California Department of Forestry and Fire Protection (CAL FIRE). The Fresno County portion of the upgraded transmission line is located in the Mendota Unified School District, which has six schools that serve Kindergarten through 12$^{th}$ grade students. Fresno County has several medical centers including acute care hospitals. The Community Regional Medical Center is located in the City of Fresno and has 626 beds and basic emergency and trauma services. Additionally the Kaiser Fresno Hospital, located in the City of Fresno, offers 169 beds and basic emergency services. (BLM, 2014; FCOE, 2014; Fresno County FPD, 2014; Fresno County Sheriff's Office, 2014)

A new microwave communication tower would be constructed within the fence line of the proposed Panoche Valley Solar Project substation. For this new tower, public services, utilities, and service systems would be the same as described in the 2010 Final EIR.

The Call Mountain site is in an area of uninhabited mixed forest and shrubland open space located west of the Panoche Valley. At this location, a microwave dish would be added to an existing microwave communication tower. The public services, utilities, and service systems would be the same as described in the 2010 Final EIR.

Panoche Mountain, northeast of the Project site, consists of uninhabited grassland and shrubland open space. Panoche Mountain currently has two existing microwave communication towers, and a new 300-foot tall tower is proposed. The site is located at the summit of Panoche Mountain in Fresno County. With the exception of the school district, public services, utilities, and service systems would be the same as described above for the Fresno County portion of the upgraded transmission line. The Panoche Mountain site is located in the Dos Palos Oro Loma Joint Unified School District.

PG&E's Helm Substation is surrounded by agricultural lands, 13 miles southwest of the City of Fresno. There is currently no microwave communication tower at the substation. A new tower would be constructed within the fence line of the substation, and would be approximately 100 feet tall. With the exception of the school district, public services, utilities, and service systems would be the same as described above for the Fresno County portion of the upgraded transmission line. Helm Substation is located in the Caruthers Unified School District.

## C.13.2 Applicable Regulations, Plans, and Standards

No changes have occurred to the regulatory setting for public services and utilities since 2010.

# C.13.3 Environmental Impacts and Mitigation Measures

This section addresses whether the changes to the Approved Project would result in any new significant public service impacts or increase the severity of previously identified public services impacts. Section C.13.3.1 restates the significance criteria used in 2010 to determine whether any project changes result in new or more severe significant impacts to the Revised Project or the PG&E Upgrades. Section C.13.3.2 summarizes the impacts and mitigation measures presented in the 2010 Final EIR for ease of reference. Section C.13.3.3 presents the updated impact analysis for the Revised Project, and Section C.13.3.4 addresses proposed changes to one mitigation measure and four APMs. Section C.13.3.5 addresses the environmental impacts that would occur as a result of the PG&E Upgrades, and Section C.13.3.6 describes cumulative impacts.

## C.13.3.1 Significance Criteria

The following significance criteria for public services, utilities, and service systems were derived from the Environmental Checklist in CEQA Appendix G. These significance criteria were used for the 2010 Final EIR and are also applied to this Supplemental EIR. They have been amended or supplemented, as appropriate, to address the nature of solar photovoltaic (PV) facilities and transmission line upgrades in general, and the full range of potential impacts related to this Revised Project in particular. An impact of the Revised Project and PG&E Upgrades would be considered significant and would require mitigation if it would:

- Preclude or result in inadequate emergency access or access to public facilities, or increase the need for police, fire, or school services such that specific new facilities need to be constructed to serve the project.
- Increase the demand for water, wastewater, stormwater drainage, water supply, or solid waste facilities such that specific new facilities need to be constructed to serve the project.
- Disrupt the existing utility systems or cause a collocation accident.

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

## C.13.3.2 Approved Project Impacts and Mitigation Measures

Table C.13-1 presents a summary of the impacts and mitigation measures applicable to the Approved Project.

**Table C.13-1. Summary of Impacts and Mitigation: Public Services, Utilities, and Service Systems**

| Impact No. and Text | Mitigation Required | CEQA Conclusion |
|---|---|---|
| Impact PS-1: Project construction and operation would place burdensome demands on public services. | PS-1.1: Develop and implement service agreement with San Benito County Fire Department. | Class II for Fire Protection; Class III for Police Protection; No Impact for Schools |
| Impact PS-2: Project construction and operation would place demands on local water, wastewater, and solid waste facilities. | None. | Class III |

**Table C.13-1. Summary of Impacts and Mitigation: Public Services, Utilities, and Service Systems**

| Impact No. and Text | Mitigation Required | CEQA Conclusion |
|---|---|---|
| Impact PS-3: Contribute to cumulatively considerable public services, utilities, and service systems impacts. | PS-1.1: Develop and implement service agreement with San Benito County Fire Department. | Class II |

## C.13.3.3 Revised Solar Project Impacts

Three public services, utilities, and service systems impacts are addressed in this section; cumulative impacts are evaluated in Section C.13.3.6.

***Impact PS-1: Project construction and operation would place burdensome demands on public services (Class II)***

The size of the peak daily construction workforce has increased from approximately 200 workers (considered in the 2010 Final EIR) to 550 workers in the Revised Project. The duration of construction has decreased from approximately 5 years to approximately 18 months. Although the structural footprint and construction timeline of the Revised Project would be reduced compared to the Approved Project, both construction and operation of the Revised Project would place a demand on fire protection services that substantially exceeds the existing service capacity. As stated in the 2010 FEIR, worker commute traffic, and construction and operational activities at the project site would increase the potential for accidents, fire, or other medical emergencies. However, as under the Approved Project, funds to employ additional fire protection personnel would be required under Mitigation Measure PS-1.1. With implementation of Mitigation Measure PS-1.1, impacts on fire protection services would be less than significant (Class II).

On-site security for the Revised Project would be provided for in the same manner as described for the Approved Project. However, as described in Section C.14 (Transportation and Circulation), the Revised Project would place substantial additional demand for support on California Highway Patrol (CHP) officers or County Sheriff deputies who are responsible for traffic safety due to the increased construction personnel and resulting traffic. The large volume of construction traffic resulting from the condensed construction schedule would result in as many as 1,150 daily trips on the roads entering the valley. In Section C.14, a new Mitigation Measure TR-1.4 (Prepare Traffic Safety Plan) has been developed to ensure safety given the additional traffic that would occur with the Revised Project. One potential component of this measure would be to provide funding for additional CHP or County traffic safety officers during the construction of the Revised Project. With implementation of Mitigation Measure TR-1.1, impacts on police protection services would remain less than significant (Class II).

The permanent labor force for the Revised Project remains unchanged and no impacts to school services would occur because the permanent workforce would be drawn from the surrounding communities and no additional housing or schools would be required.

***Impact PS-2: Project construction and operation would place demands on local water, wastewater, and solid waste facilities (Class III)***

The water supply and wastewater facilities for the Revised Project would remain as described for the Approved Project. Water supply would be drawn from the local aquifer through existing or new wells. No new public water supply systems would be required during construction or operation of the Revised Project. Section C.15 (Water Resources) addresses the Revised Project's demand on groundwater

resources. Wastewater would be discharged through a septic tank and leach field. Demands would not be placed on public water supply and wastewater systems. Given the smaller solar field, the impact on solid waste facilities would be less intense, and would remain adverse but less than significant (Class III).

## C.13.3.4 Changes to Adopted Mitigation Measures

One mitigation measure was adopted by the County in 2010 for the Approved Project, and it has been modified to delete references to the San Benito County Fire Department, which no longer provides fire protection services to the project site, and to reflect the requirements of the Hollister Fire Department, which now serves the area. Changes to mitigation measures and APMs are shown with underlining for added text and strikeout for deleted text. Mitigation Measures and APMs not addressed in this section have not changed and are presented for reference only in Appendix 3.

### Mitigation Measures

This proposed change to Mitigation Measure PS-1.1 only allows for additional firefighting entities to serve the project, and for those entities to be paid for the services they provide. It does not change the severity of the impact defined in 2010 (Class II, less than significant with implementation of mitigation).

**MM PS-1.1** **Develop and implement service agreement with firefighting entities ~~San Benito County Fire Department~~ (Supersedes APM PSU-5).** The Applicant shall enter into an agreement with a qualified firefighting entity (the Hollister ~~San Benito County~~ Fire Department, CAL FIRE, or private providers). A fully executed agreement shall be submitted to the Department of Planning and Building, prior to issuance of building permits, which documents ~~. In consultation with CAL FIRE,~~ the Applicant's agreement ~~will~~ to pay the firefighting providers an agreed upon fee based on actual costs. ~~of up to CAL FIRE $337,812 per year~~ to fund additional personnel needed to serve the project site during construction.~~at the CAL FIRE Antelope Fire Station, 20400 Panoche Road, Paicines, CA 95043 (Antelope Station) to enable CAL FIRE to employ four additional personnel during the high fire season and three personnel during the low fire season at the Antelope Station.~~

To address operational impacts, the Applicant~~, based on consultation with CAL FIRE,~~ shall ensure that either (a) a sufficient number of permanent employees are trained as volunteer fire fighters or (b) the Applicant will provide fire protection training to its permanent employees. This will allow the project's on-site work force to combat and be first responders to any potential fires occurring on-site or within the vicinity of the project site prior to back up by the appropriate fire department or entity ~~CAL FIRE staff~~.

### Applicant Proposed Measures

The Applicant has also proposed changes to four of the Applicant Proposed Measures (APMs) for Public Services, Utilities, and Service Systems. These changes are shown below. The proposed changes to the APMs would not affect the severity of impacts for the Revised Project. The change to APM PSU-2 is more protective of the environment, ensuring that all trash is removed. The change to APM PSU-3 clarifies the recycling commitment of the Applicant and requires compliance with all requirements. The change to AMP PSU-4 only clarifies the APM language. Modified APM PSU-5 has been deleted because it has been superseded by the revised Mitigation Measure PS-1.1.

**APM PSU-2** During operation of the solar farm, the project site would be maintained free of ~~non-biodegradable debris~~ trash.

**APM PSU-3** During construction and operation of the solar farm, all disposable materials that are considered recyclable shall be separated and properly recycled or reused in compliance with federal, State and local law or disposed of as required by a facility authorized to accept such materials~~, and will be disposed of at such a facility~~.

**APM PSU-4** Hazardous materials shall not be drained onto the ground or into streams or drainage areas. Totally enclosed containment shall be provided for all trash, as well as recyclable materials containers. All construction waste, including trash and litter, garbage, other solid waste, petroleum products, and other potentially hazardous materials, shall be removed to a disposal facility authorized to accept such materials.

~~**APM PSU-5** In consultation with Cal Fire (Battalion Chief Paul Avila) on May 11, 2010 and to address the project's impact on fire protection services during the 5-year construction period, the Applicant will pay Cal Fire $337,812 per year to fund additional personnel at the Cal Fire Antelope Fire Station, 20400 Panoche Road, Paicines, CA 95043 (Antelope Station), which is the local fire station that would serve the project. This amount of funding will enable Cal Fire to employ four additional personnel during the high fire season and three personnel during the low fire season at the Antelope Station to ensure the project's increase demand on fire service during construction would be less than significant. To address operational impacts, the Applicant, in consultation with Chief Avila on May 11, 2010, will collaborate with Cal Fire either to ensure that a sufficient number of permanent employees are trained as volunteer fire fighters or provide fire protection training to the permanent employees. This will allow the project's on-site work force to combat and be first responders to any potential fires occurring on-site or within the vicinity of the project site prior to back up by Cal Fire staff.~~

## C.13.3.5 PG&E Upgrades Impacts

None of the impacts addressed for the solar project would occur as a result of construction or operation of the PG&E Upgrades due to the small number of personnel that would be required, the very short-term nature (12-16 weeks) of the construction activities, and the small permanent changes to PG&E facilities that would result. The PG&E Upgrades would be constructed by existing PG&E personnel or contractors, and no occupied structures would be constructed. The upgrades would not place any additional demands on public utilities or services.

## C.13.3.6 Cumulative Impacts

The projects that have been constructed or proposed in the area of potential cumulative effects have changed since 2010, as described in Section D. The operation of the Revised Project and the construction and operation of the PG&E Upgrades would not result in a negative impact on the performance objectives for police or fire services or an increase in school enrollment. As with the Revised Project, the projects included in Section D, Cumulative Projects List, would be expected to implement traffic control measures, where practicable, to ensure that emergency access is not obstructed for fire and police services. Furthermore, with implementation of Mitigation Measure PS-1.1 the Revised Project would not combine with impacts of the PG&E Upgrades or other projects to result in a cumulatively significant impact. Therefore, the Revised Project and PG&E Upgrades' contribution would not be cumulatively considerable and would be less than significant with mitigation incorporated (Class II).

## C.13.4 Summary of Impacts

The significance of impacts for public services, utilities, and service systems for the Revised Project and for the PG&E Upgrades is summarized in Sections C.13.4.1 and C.13.4.2. Section C.13.4.3 summarizes the impacts of all project components.

### C.13.4.1 Revised Solar Project

There are no changes to the significance of impacts from the conclusions of the Final EIR. The impacts summarized in Table C.13-1 remain accurate. With implementation of Mitigation Measure PS-1.1 and the APMs that would be included as part of the project design, potential project impacts to fire protection services would be less than significant (Class II). Potential impacts to all other public services, utilities, and service systems would be less than significant (Class III).

### C.13.4.2 PG&E Upgrades

The PG&E Upgrades would not result in any impacts to public services, utilities, or service systems. No mitigation is required.

### C.13.4.3 Overall Significance of Impacts

The overall impacts of the solar project and the PG&E Upgrades would be less than significant with implementation of mitigation (Class II). The PG&E Upgrades would not result in any impacts to public services, utilities, or service systems. For the solar project, potential project impacts to fire protection services would be less than significant with implementation of the proposed changes to mitigation measure PS-1.1, and the APMs (Class II). Potential solar project impacts to all other public services, utilities, and service systems would be less than significant (Class III). Cumulative impacts to public services, utilities, and service systems would be less than significant with implementation of mitigation (Class II).

## C.13.5 References

BLM (Bureau of Land Management). 2014. BLM Hollister Field Office, Law Enforcement. http://www.blm.gov/ca/st/en/fo/hollister/law_enforcement.html. Accessed November 11, 2014.

FCOE (Fresno County Office of Education). 2006. Fresno County School Districts. http://www.fcoe.org/sites/default/files/documents/FresnoCo_DistsV1_10062006_web.pdf. Accessed November 12, 2014.

Fresno County FPD (Fresno County Fire Protection District). 2014. About Us. http://fresnocountyfire.org/index.php?c=2. Accessed November 12, 2014.

Fresno County Sheriff's Office. 2014. Fresno County Sheriff's Office, Area 1. https://www.fresnosheriff.org/area-1.html. Accessed November 11, 2014.

# C.14 Transportation and Circulation

This section analyzes whether the Revised Project and PG&E Upgrades would result in any new significant impacts to transportation and circulation that were not previously identified and disclosed in the 2010 Final EIR, or whether there would be a substantial increase in the severity of any previously identified impacts. This analysis investigates changes to the existing roadways and traffic in the study area, changes to the traffic flow associated with the project, and changes to potential transportation and circulation impacts and related mitigation measures.

Data sources that were used for this analysis include traffic volume data from California Department of Transportation, general traffic standards from Fresno County General Plan's Transportation and Circulation Element (Fresno County, 2014), and the results of a new traffic study prepared by Hexagon Transportation Consultants, Inc. (Hexagon, 2014).

## C.14.1 Environmental Setting

Section C.14.1.1 summarizes the environmental setting from the 2010 Final EIR and describes changes to the environmental setting that have occurred since 2010. Section C.14.1.2 describes the environmental setting for the area surrounding the PG&E upgrades.

### C.14.1.1 Revised Solar Project

The transportation and circulation setting for the Revised Project site is substantially the same as it was at the time of approval of the Final EIR. Panoche Valley remains generally undeveloped and pastoral in character. No new development has occurred, and no major new structures have been built in the valley. No new roads or highways have been built within the study area, and no new demands have been placed on the existing transportation infrastructure. The southern boundary of the solar project site is approximately 0.75 miles north of the intersection of Panoche Road and Little Panoche Road, in eastern San Benito County. The site extends 6 miles from its western to eastern ends, and is located approximately 2 miles southwest of the Fresno County Line and the Panoche Hills, and approximately 15 miles west of Interstate 5 and the San Joaquin Valley.

The regional roadways would be used by construction and operational vehicles are shown on Figure B-1 (Project Location, Section B) and include Interstate 5 (I-5), State Route 25, Panoche Road, and Little Panoche Road. Major roadways in this region are within the jurisdictions of the following agencies: California Department of Transportation (Caltrans) District 5 (including all of San Benito County), Caltrans District 6 (including all of Fresno County), the County of San Benito, the County of Fresno, and the California Highway Patrol (CHP). As proposed, the Applicant intends to route project-related commuter traffic along State Route 25 (a Caltrans facility) and truck traffic (including oversize loads that would require permits) along I-5 (also a Caltrans facility). The roads that would provide direct access to the Project site (i.e., roadways from which vehicles would turn directly onto the project site) are local roadways under the jurisdiction of the County of San Benito. Panoche Road and Little Panoche Road are described below (and in more detail in the 2010 Final EIR).

**Panoche Road** provides the most used entrance to the Panoche Valley. The segment of Panoche Road between SR 25 and Little Panoche Road, which would be used to access the site, it is classified as rural major access road since it serves very low volumes. Encounters between vehicles that present opportunities for crashes are rare. There is another segment of Panoche Road east of Little Panoche Road that is partially unpaved, and classified as either a rural industrial/agricultural road or rural

resource recovery road; however, that segment would not be used for project access and would not be affected by project traffic during construction or once the project is operational.

American Association of State Highway and Transportation Officials Guidelines specify a minimum roadway width of 18-20 feet for rural major access roadways with design speeds of 35-45 mph.[1] Panoche Road is generally 18 – 20 feet wide, but there are bridges that narrow to as little as 14 feet wide. The minimum widths also do not account for maneuverability and off-tracking of large trucks. There are several sharp curves through the mountainous sections of Panoche Road in which sight distance is restricted by mountain slopes and vegetation.

**Little Panoche Road** is also classified as a rural major access road. Field measurements indicated sections of the roadway that were as narrow as 16 feet. Typical width of large trucks is 8.5 feet. Thus, the sections of roadway are narrower than the recommended 18 feet would not be adequate to accommodate two-way travel of large trucks.

## Traffic Conditions

Existing roadway and traffic conditions on the routes expected to be used by Project-related construction traffic are shown in Table C.14-1 (Existing Roadway Segment Traffic Volumes) and are described in more detail in the 2010 Final EIR. Analysis of roadways is based on information obtained from a detailed 2010 traffic study and a 2014 follow up traffic study for the Revised Project prepared by Hexagon Transportation Consultants, as well as from the Caltrans Transportation Concept Reports for SR-25 and I-5, and Caltrans traffic volume data.[2]

**Table C.14-1. Existing Roadway Segment Traffic Volumes**

| Location | Direction | ADT[1] | AM Peak[2] | Mid-Day Peak[3] | PM Peak[4] |
|---|---|---|---|---|---|
| Little Panoche Road | NB | 32 | 6 | 6 | 4 |
| (North of Panoche Road) | SB | 34 | 1 | 5 | 6 |
| | Total | 66 | 7 | 11 | 10 |
| Panoche Road | NB | 76 | 15 | 12 | 5 |
| (East of Little Panoche Road) | SB | 76 | 10 | 20 | 11 |
| | Total | 152 | 25 | 22 | 16 |
| Panoche Road | NB | 95 | 25 | 19 | 6 |
| (West of Little Panoche Road) | SB | 81 | 7 | 10 | 10 |

[1] The adequacy of the geometric design of Panoche and Little Panoche Roads to serve project traffic was evaluated based on roadway functionality and design standards presented in American Association of State Highway and Transportation Officials (AASHTO) Geometric Design Manual. Both Panoche and Little Panoche Roads are County-designated roadways that serve very low volumes; the primary purpose of these roadways is to provide access to adjacent properties. Therefore, the direct application of design standards intended for urban roads that serve through traffic are not solely appropriate for either roadway. AASHTO provides supplemental design guidelines in their *Geometric Design of Very Low-Volume Local Roads (ADT<400)* publication that provides guidance in the evaluation of roadway geometrics for roadways similar to Panoche and Little Panoche Roads.

[2] The Hexagon Traffic Study includes evaluation of roadway geometrics, pavement conditions, vehicular speeds, vehicle composition, sight distance, and existing signage along each of the roadways. Intersection levels of service analysis and signal warrant checks also were completed at the intersections of SR 25 and Panoche Road and Panoche Road and Little Panoche Road.

**Table C.14-1. Existing Roadway Segment Traffic Volumes**

| Location | Direction | ADT[1] | AM Peak[2] | Mid-Day Peak[3] | PM Peak[4] |
|---|---|---|---|---|---|
| | Total | 176 | 32 | 29 | 16 |
| Panoche Road | NB | 159 | 21 | 13 | 18 |
| (East of Cottonwood Road) | SB | 163 | 17 | 20 | 20 |
| | Total | 322 | 38 | 33 | 38 |

1 - ADT = Average Daily Traffic Volume
2 - Highest AM peak-hour volume of the two surveyed dates (6:00 am–9:00 am)
3 - Highest mid-day peak-hour volume of the two surveyed dates (11:00 am–2:00 pm)
4 - Highest PM peak-hour volume of the two surveyed dates (3:00 pm–6:00 pm)
Source: Hexagon, 2010

### C.14.1.2 PG&E Upgrades

The proposed PG&E transmission upgrades would be located in San Benito County (7 miles) and Fresno County (10 miles). The Call Mountain microwave tower is in San Benito County (west of the solar site); the Panoche Mountain microwave tower and the Helms Substation are in Fresno County. Most of the PG&E work would consist of overhead installation of optical ground wire (OPGW) on existing transmission towers and installation of approximately 9 permanent wooden poles over a 4,650-foot section of transmission line. In addition, the PG&E upgrades would include up to 12 new transmission structures that are required to tie the existing Moss Landing–Panoche 230 kV transmission line into the proposed PG&E switchyard, located within the Revised Project site boundaries. The new transmission structures would be installed by PG&E after site preparation is completed by the Applicant

Work areas for PG&E upgrades would be accessed from existing roads, including Panoche Road east of Little Panoche Road. PG&E's OPGW installation along the 17-mile segment would be completed in approximately 12-16 weeks, and at any one location the construction would take from 2 to 3 weeks. Helicopters would be used to transport electrical workers to the towers, deliver materials, and assist in pulling the OPGW from tower to tower. This work would not require any road closures, although brief delays may be required during OPGW stringing with helicopters.

Construction work for microwave towers is described in Section B.11.2.1 of the Project Description. Work would take approximately 2 to 3 weeks at each site and would utilize existing roads for access. Each of these microwave tower locations is situated in an area with existing access roads. The Panoche Valley Substation at the project site would be accessed by Panoche Road or Little Panoche Road. Call Mountain microwave tower site would be collocated on an existing microwave tower at the CALFIRE station with existing access roads. Panoche Mountain microwave tower site would be collocated on an existing tower or constructed at an existing CHP station with existing access. Helm Mountain microwave tower site is located at an existing PG&E substation with existing access.

## C.14.2 Applicable Regulations, Plans, and Standards

The applicable regulations, plans, and standards that apply to the assessment of transportation and circulation impacts within the Project area are presented in Section C.14.2 of the Final EIR. No changes have occurred to the San Benito County regulatory setting for transportation and circulation since 2010. The Fresno County General Plan's Transportation and Circulation Element (Fresno County, 2014) establishes standards for the County's transportation and highway systems. The general standards for right-of-way, access control, and planned travel lanes for each roadway class in the County are shown in Table TR-1 in the Transportation and Circulation Element.

# C.14.3 Environmental Impacts and Mitigation Measures

This section addresses whether the changes to the Approved Project would result in any new significant traffic impacts or increase the severity of previously identified traffic impacts. Section C.14.3.1 restates the significance criteria used in 2010 to determine whether any project changes result in any new or more severe significant impacts. Section C.14.3.2 summarizes the impacts and mitigation measures presented in the 2010 Final EIR for ease of reference. Section C.14.3.3 presents the updated impact analysis for the Revised Project, and Section C.14.3.4 addresses the addition of one new mitigation measure. Section C.14.3.5 addresses the environmental impacts that would occur as a result of the PG&E Upgrades, and Section C.14.3.6 describes cumulative impacts.

## C.14.3.1 Significance Criteria

The following significance criteria for transportation and circulation were derived from the Environmental Checklist in CEQA Appendix G. These significance criteria were used for the 2010 Final EIR and are also applied to this Supplemental EIR. They have been amended or supplemented, as appropriate, to address the nature of solar photovoltaic (PV) facilities and transmission line upgrades in general, and the full range of potential impacts related to this Revised Project in particular. An impact of the Revised Project and PG&E Upgrades would be considered significant and would require mitigation if:

- Construction would create unsafe conditions on public roadways, such as limited access, unsafe design features, reduced sight distance, slow vehicles, damage to public roads, etc.; or
- The project would cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume-to-capacity ratio on roads, congestion at intersections or individually or cumulatively exceed a level of service standard established by the County congestion management agency for designated roads or highways). As provided by Policy 4 of the Transportation Element of the San Benito County General Plan, the minimum level of service standard of County roadways is LOS C.

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

## C.14.3.2 Approved Project Impacts and Mitigation Measures

Table C.14-2 presents a summary of the impacts and mitigation measures applicable to the Approved Project.

**Table C.14-2. Summary of Impacts and Mitigation: Transportation and Circulation**

| Impact No and Text | Mitigation Required | CEQA Conclusion |
|---|---|---|
| Impact TR-1: Construction would create unsafe conditions on public roadways. | TR-1.1: Implement traffic control plan.<br>TR-1.2: Rehabilitate, and monitor roadway pavement.<br>TR-1.3: Repair roadway damage. | Class II |
| Impact TR-2: Project implementation would increase congestion and travel delays on regional and local roadways or exceed an established level of service standard. | TR-1.1: Implement traffic control plan. | Class II |

**Table C.14-2. Summary of Impacts and Mitigation: Transportation and Circulation**

| Impact No and Text | Mitigation Required | CEQA Conclusion |
|---|---|---|
| Impact TR-3: Contribute to cumulatively considerable transportation and circulation impacts. | None. | Class III |

## C.14.3.3 Revised Solar Project Impacts

Two transportation and circulation impacts are addressed in this section; cumulative impacts are evaluated in Section C.14.3.6.

Traffic-related impacts from operations and decommissioning would be similar for the Revised Project as for the Approved Project. Construction impacts would occur during a shorter time period than described in the 2010 Final EIR; construction would take place over 18 months rather than over 5 years. Therefore, traffic impacts would be shorter in duration, but more intense over the 18 month construction period. This analysis reflects the shorter construction schedule and increased personnel requirements for the Revised Project.

**Workforce and Daily Vehicle Trips**. The workforce at the project site would vary based on the work activities conducted and time of year. However, a peak of approximately 550 employees per day is expected on site at any one time during the construction of the solar project. During the construction period, employees would work up to a 12-hour daytime shift with a maximum of 50 employees on site at night. Nighttime work hours would occur between sunset and sunrise (generally between 7:00 PM and 7:00 AM). Nighttime activities would be restricted to minor non-ground disturbing work, interior use of O&M facility, emergency work, and work required for special-status species mitigation.

Employees would travel from the expected primary workforce areas of Hollister/San Benito County and Fresno County which are between 10 and 60 miles from the site. Employees are expected to carpool at a rate equivalent to 1.2 employees per vehicle. The project would generate the most auto traffic, 448 trips, from 6:00–7:00 AM during the arrival of employees for the daytime work shift and 7:00–8:00 PM during the departure of employees of the daytime work shift.

For material deliveries, a maximum of 100 large trucks would access the site on a daily basis. Trucks carrying oversized loads would access the site infrequently. Materials and equipment would generally be delivered from within a 100-mile radius. Trucks would generally arrive at the site evenly distributed between the hours of 6:00 AM and 6:00 PM. Therefore there would be up to 200 daily truck trips, with a maximum of 18 truck trips occurring during any one hour between 6:00 AM to 6:00 PM. Table C.14-3 shows daily trips anticipated for the Project in the 2010 Final EIR and the daily trips anticipated for the Revised Project.

**Table C.14-3. Estimated Daily Traffic, 2010 Final EIR Proposed Project and 2014 Revised Project**

| Trip Types | 2010 Final EIR | Revised Project Peak | Revised Project Average |
|---|---|---|---|
| Employees | 200 | 550 | 320 |
| Employee Daily Trips | 268 | 950 | 580 |
| Assumed Vehicle Occupancy | 1.5 | 1.2 | 1.2 |
| Material Deliveries | 30 | 200 | 60 |
| Total Daily Trips | 298 | 1,150 | 620 |

**Construction Traffic Specifications**. Table C.14-4 (Construction Traffic Specifications, 2010 Final EIR Proposed Project and 2014 Revised Project) shows a comparison of construction traffic specifications for the Project as evaluated in the 2010 Final EIR and the Revised Project. As described in the 2010 Final EIR, material deliveries would be on-going throughout construction; much of the heavy construction equipment would arrive to the site early and stay for the duration of construction.

**Table C.14-4. Construction Traffic Specifications, 2010 Final EIR Proposed Project and 2014 Revised Project**

| Traffic Type | 2010 Final EIR Total One-Way Trips | Revised Project Total One-Way Trips | 2010 Final EIR Average Daily One-Way Trips | Revised Project Average Daily One-Way Trips | Trip Types: On-site Local = 40 miles or less Remote = > 40 miles |
|---|---|---|---|---|---|
| Aggregate base material | 1,320 | 10,000 | 4 | 15 | Local |
| Backhaul excess cut | 1,320 | 1,320 | 4 | 4 | On-site |
| Water trucks, dust control | 66,000 | 50,000 | 40 | 100 | On-site |
| Concrete raw material | 1,980 | 1,980 | 6 | 5 | Local |
| PV panel delivery | 8,250 | 2,250 | 5 | 20 | Remote |
| Substation equipment | 1,200 | 1,200 | 5 | 5 | Remote |
| Electrical materials | 3,300 | 3,300 | 2 | 15 | Remote |
| Total | 83,370 | 70,050 | 66 | 164 | N/A |

**Project Site Access**. All project traffic would access the project site via either Panoche Road or Little Panoche Road. This traffic analysis assumes that 60 percent of the employees would come from San Benito County and use Panoche Road from SR 25, and the remaining 40 percent would use Little Panoche Road from Interstate 5. All heavy truck traffic would be restricted to the use of Little Panoche Road from Interstate 5. No truck traffic would use Panoche Road from SR 25 or the unpaved section of Panoche Road/Jackass Grade.

**Road Closures**. Construction of the project substation may require temporary closure or partial closure of roadways around the project site.

**Roadway Traffic Operations**. The traffic volume data collected along Panoche and Little Panoche Roads showed volumes that were well below capacities of each of the roadways. The Project traffic on each of the study roadways and intersections is presented in Table 6 of Appendix 2 (2014 Traffic Study).

**Intersection Operations Analysis**.[3] Level of service calculations were performed for those intersections identified to be of critical importance. The key intersections analyzed are: (1) SR 25 and Panoche Road and (2) Little Panoche Road and Panoche Road. Both intersections are two-way stop controlled unsignalized intersections. Unsignalized intersection levels of service are evaluated on the basis of worst-case delay for each stop-controlled approach at the intersection. All intersections within the

[3] *Level of Service* is a qualitative description of operating conditions ranging from LOS A, or free-flow conditions with little or no delay, to LOS F, or jammed conditions with excessive delays. The intersections were analyzed using TRAFFIX software, which is based on the *Highway Capacity Manual* (HCM) 2000 method for computing level of service at intersections. TRAFFIX is a commonly used software program to calculate intersection delay and is available to the public.

County are required to meet the County's LOS standard of LOS C. Results of the level of service analysis indicate that both study intersections currently operate at LOS A conditions[4] during the AM, PM, and mid-day peak hours (see Table 8 in Appendix 2). Based on the proposed start and end times of the daytime work shift, the project would not generate auto trips during the standard AM and PM peak hours because workers would be arriving before the normal morning peak hours and leaving after normal afternoon peak hours.

***Impact TR-1: Construction would create unsafe conditions on public roadways (Class II)***

The primary County roads that would be used to access the Project site, Panoche Road and Little Panoche Road, were discussed in detail in the 2010 Final EIR. Based on the analysis in the 2010 Final EIR, because of safety hazards, mitigation measures require that Panoche Road east of State Road 25 would be restricted to Project use by private vehicles and would not be used by trucks delivering materials or equipment to the Project site. Requirements related to this restricted use are in previously adopted Mitigation Measure TR-1.1 (Prepare and implement Traffic Control Plan). In accordance with the Traffic Control Plan, signage and flagging would be implemented along each segment of Little Panoche Road that is narrower than 18 feet. The Traffic Control Plan required by previously adopted Mitigation Measure TR-1.1 also requires the Applicant to identify measures to ensure safe transport of all trucks to the project site.

Heavy trucks, such as 18 wheel semi-trailers, produce disproportionate wear and tear on the roadway system. Total construction truck trips would be reduced from 83,370 one-way trips (over a 5 year construction period) in the 2010 Final EIR to 70,050 for the Revised Project. Overall impacts to the roadway system would be similar to those of the Approved Project, but the impacts would occur over a shorter period of time. An updated traffic index assessment[5] was conducted to determine the required pavement structure for truck trips from the Revised Project. Since the additional truck traffic would only occur over an approximately 18-month construction period, the 10-year design period recommended by Caltrans was utilized for the analysis.

The traffic assessment presented in SEIR Appendix 2 indicates that Little Panoche Road currently serves relatively low existing traffic volumes. The additional truck trips associated with the Project would require potentially more frequent road rehabilitation during the approximately 18 month duration of construction activities. Following construction, roadways would be repaired to meet the current traffic-serving capacity, as stated in the Approved Project, for a design life of 10 years. The addition of project traffic to the remaining roadways would not change the required traffic index since passenger cars and smaller trucks have a negligible effect on pavement service life.

Because portions of Little Panoche Road may not be adequate to sustain heavy truck travel, and because the addition of project traffic would hasten the deterioration of this roadway, previously adopted Mitigation Measures TR-1.2 (Rehabilitate and monitor roadway pavement) and TR-1.3 (Repair roadway damage) are necessary to ensure the safety of public roadways.

The Revised Project would generate substantially more daily (and hourly) traffic over its shorter construction period. Table C.14-3 shows daily trips. The 2010 Final EIR assumed a peak of 298 daily vehicle trips; the Revised Project would generate a peak of 1,150 daily trips and an average of 580 daily

[4] LOS A means free-flow conditions with little or no delay.

[5] The traffic index is a measure of the number of Equivalent Single Axle Loads (ESAL) expected in a design lane over the design period.

trips. In addition, the 2010 Final EIR Project assumed that construction personnel would work in three shifts, which would have spread out trips through several arrival and departure times. In the 2010 Final EIR, the maximum number of hourly vehicle trips was 67. Because most construction personnel for the Revised Project would be arriving and departing at approximately the same time, the Revised Project would generate the greatest amount of auto traffic, 448 trips, from 6:00 – 7:00 AM during the arrival of employees for the daytime work shift and 7:00 – 8:00 PM during the departure of employees of the daytime work shift. Based upon existing traffic count data, the identified peak of project traffic would not coincide with the peak of existing traffic along surrounding roadways.

The effects of Revised Project traffic on the Project area roadways and critical intersections was analyzed based on projected roadway volume increases, intersection levels of service analysis and assessment of whether traffic signals should be required at primary intersections. Since truck trips do not have the same effect on the transportation network as auto trips, the estimated project truck traffic was increased using a heavy vehicle adjustment factor of 1.5 to yield passenger-vehicle equivalent trips (a truck trip is considered to represent 1.5 passenger-vehicle trips) for the analysis of project conditions. The project is expected to add 1,150 daily trips to the roadways and result in daily traffic volumes along the roadways ranging from 152 to 892 daily vehicles.

The increase in daily construction traffic due to the condensed project schedule has the potential to impede emergency response vehicle access to the Panoche Valley. In addition, the large number of vehicles on the small local roads during project commuting timeframes could present a risk of increased frequency of accidents for workers and the public and place additional burden on emergency response agencies. Mitigation Measure TR-1.4 is a new measure, proposed to ensure that potential impacts from Revised Project traffic do not create new significant impacts related to traffic safety. Mitigation Measure TR-1.4 requires the Applicant to develop a Traffic Safety Plan that ensures (a) the ability of emergency service providers to access the Panoche Valley region during project construction, and (b) the safety of the public and project traffic using regional roads during peak project traffic conditions. The Traffic Safety Plan would be developed based on coordination with the County Building and Planning Department, the San Benito and Fresno County Sheriffs' Offices, and the California Highway Patrol.

Though the project traffic would result in an increase in traffic along each of the roadways, the increase would still be within roadway capacities. However, because the substantial increase in daily and hourly vehicle traffic may increase the likelihood of vehicle collisions (as seen during construction of other similar solar projects in remote areas), Mitigation Measure, MM TR-1.4 (Ensure Traffic Safety) is proposed as shown in Section C.14.3.2 below.

With the implementation of Mitigation Measures TR-1.1, TR-1.2, and TR-1.3 from the 2010 Final EIR and implementation of the newly proposed Mitigation Measure TR-1.4, the impacts of the Revised Project would be less than significant (Class II).

***Impact TR-2: Project implementation would increase congestion and travel delays on regional and local roadways or exceed an established level of service standard (Class II)***

Traffic volume data collected in 2010 along Panoche and Little Panoche Roads showed volumes of existing traffic that were well below capacities of each roadway (see Table C.14-1). The Revised Project would add 1,150 one-way vehicle trips to the existing traffic on these roads. Although the addition of project traffic would result in an increase in traffic along each of these roadways, such an increase would have little effect on roadway operations and the total volume of traffic on Panoche would remain within the roadway capacities. In addition, under the Revised Project work schedule, employees would

generally be coming to and from the Project site during non-peak times when few other vehicles are using these roadways.

In addition to evaluating traffic volume of area roads, level of service was analyzed for two key intersections: (1) SR-25 and Panoche Road; and (2) Little Panoche Road and Panoche Road. The results indicate that both study intersections currently operate and are projected to continue to operate at LOS A conditions during the AM, PM, and mid-day peak hours under existing conditions. Based on the proposed start and end times of the daytime work shift for the Revised Project, the Project would not generate auto trips during the standard AM and PM peak hours.

However, it should be noted that the Revised Project would result in a substantial increase in auto trips during the early morning (before the standard commute period) and late evening hours (after the standard commute period). Intersection level of service policies and significance criteria are typically only applicable to standard weekday commute periods when ambient traffic volumes are greatest. Mitigation Measure TR-1.1 would reduce impacts related to Project traffic to less than significant levels through implementation of a County approved Traffic Control Plan and Mitigation Measure TR-1.4 would reduce traffic related safety impacts through implementation of a Traffic Safety Plan.

As with the Approved Project, the Revised Project may require short-term road closures of Little Panoche Road that could disrupt traffic flow and could lead to congestion. To ensure that any temporary construction-related lane closures would not result in significant impacts related to congestion, the Traffic Control Plan required under Mitigation Measure TR-1.1 would be implemented. The Traffic Control Plan would identify the location and length of time of roadways closures. Mitigation Measure TR-1.4 (Ensure Traffic Safety) would require implementation of a Traffic Safety Plan that includes provisions for ensuring that any potential delays are less than 30 minutes. The Traffic Control Plan also requires that oversize trucks requiring pilot cars travel along Little Panoche Road only between 9:00 AM and 4:00 PM.

Because of the low volume of existing traffic on roadways that would be utilized by Project-related traffic and the traffic controls required by Mitigation Measure TR-1.1 and the newly proposed Mitigation Measure TR-1.4, impacts related to traffic congestion would be less than significant (Class II).

## C.14.3.4 Changes to Adopted Project Mitigation Measures

Three mitigation measures adopted in 2010 are not shown in this section because they are unchanged since their adoption; they are presented for reference only in Appendix 3. One new mitigation measure is proposed to be added for the Revised Project: Mitigation Measure TR-1.4 (Ensure traffic safety). The substantial increase in daily construction traffic that would result from the Revised Project's 18 month construction schedule has the potential to impede emergency response vehicle access to the Panoche Valley. In addition, the large number of vehicles on the small area road during project commuting timeframes could present a risk of increased frequency of accidents for workers and the public and place additional burden on emergency response agencies. Mitigation Measure TR-1.4 is a new measure (shown underlined), proposed to ensure that potential additional impacts from Revised Project traffic are not significant impacts. This measure would result in less than significant impacts (Class II).

**TR-1.4** **Ensure Traffic Safety.** The Applicant shall develop a Traffic Safety Plan that ensures (a) the ability of emergency service providers to access the Panoche Valley region during project construction, and (b) the safety of the public and project traffic using regional roads during peak project traffic conditions. The Applicant shall develop a Traffic Safety

Plan based on coordination with the County Building and Planning Department and the Sheriff's Office, incorporating one or more of the following requirements:

- The Applicant shall prepare a detailed plan to ensure emergency vehicle access to the project area during construction, specifically addressing the timeframes with heaviest traffic on Highway 25, Panoche Road, and Little Panoche Road;
- The Applicant shall provide funding for up to two additional Sheriff or CHP units to patrol Panoche Road, Little Panoche Road, and Highway 25, as determined necessary, between 6 a.m. and 8 p.m. on weekdays through the entire construction duration. The precise number, location, and timing of additional patrols shall be coordinated with the County Sheriff and CHP and the County to adequately address all defined potential safety impacts;
- The Applicant shall consider staggered work hours for construction employees, so the construction workforce traffic would start and finish each workday in at least 2 separate groups, separated by at least one hour, rather than requiring all workers to start work at the same hour;
- The Applicant shall limit construction truck delivery hours for trucks on Little Panoche Road, Panoche Road, and Highway 25 to avoid normal commuting timeframes (after 9 a.m. and before 4 p.m.), and prohibit truck deliveries on weekends, except by prior approval from the County.
- The Applicant shall provide quarterly documentation to the County documenting use of shuttle buses and carpools, in compliance with its APM AQ-2, in which the Applicant has committed to providing incentives for workers to use project-sponsored shuttle bus service or carpooling. Such documentation shall be provided within 30 days of the end of each calendar quarter. If either traffic conditions or traffic incidents show impacts of concern to the County or Sheriff's Office, additional carpooling or shuttles shall be implemented to reduce vehicles on the public roads.
- The Applicant shall require each construction worker to attend a project-specific driving safety awareness program developed by the Applicant, prior to starting work on the project. The program shall specifically define work hours, existing speed limits, road conditions presenting safety concerns, and approach to allowing emergency vehicles to access the project area.
- The Applicant shall inform the County about each traffic incident involving project vehicles or near-miss accidents within 24 hours of its occurrence or as soon as possible, and include a recommendation for how each accident could have been avoided. This information shall be used to develop Adaptive Strategies to improve safety during the construction process, as required by the County.
- The Applicant shall provide to each worker a map of designated parking and waiting areas for informal carpooling. Designated parking and waiting areas shall not increase the likelihood of vehicle collisions and shall not block or delay other traffic or established parking for other purposes. Designated locations for informal carpooling shall be posted at work sites and included in worker training materials.
- The Applicant and contractors shall endeavor to ensure that traffic delays related to Project construction shall not exceed 30 minutes. When road closures and traffic delays more than 30 minutes are anticipated, the Applicant shall ensure that signs are

posted at work sites and public locations at least one week in advance warning workers and the public to anticipate delays. This information shall also be available on a Project website and on signs visible from SR 25 and I-5.

## C.14.3.5 PG&E Upgrades Impacts

Two transportation and circulation impacts are addressed in this section; cumulative impacts are evaluated in Section C.14.3.6.

***Impact TR-1: Construction would create unsafe conditions on public roadways (Class III)***

PG&E upgrades would require minimal personnel and very limited material and equipment deliveries. Work areas for PG&E upgrades would be accessed from existing roads, including Panoche Road east of Little Panoche Road. PG&E's OPGW installation along the 17-mile segment would be completed in approximately 12-16 weeks, and at any one location the construction would take from 2 to 3 weeks. Helicopters would be used to transport electrical workers to the towers, deliver materials, and assist in pulling the OPGW from tower to tower. As part of the telecommunications upgrade work, PG&E would install approximately 9 wood poles along its existing ROW where the 230 kV line crosses under an existing 500 kV transmission line. PG&E would also construct 8 new tubular steel poles (TSPs) to tie the existing transmission line into the new PG&E switchyard located within the Revised Project boundaries. Approximately 12-20 construction personnel would be utilized during an approximate 12-16 week period for installation of the OPGW. Using a maximum of 90 work days in the 16-week period, there would be approximately 3,600 trips during construction of the OPGW.

Construction work for microwave towers is described in Section B.11.2.1 of the Project Description. Construction of new towers would take approximately 2-6 months at each site and would utilize existing access roads. No road closures are anticipated; however, if any temporary road closures are required, a Traffic Control Plan would be implemented. The traffic control measures implemented by PG&E would be consistent with those published in the California Joint Utility Traffic Control Manual (California Inter-Utility Coordinating committee 2010). These measures would facilitate the safe movement of materials and traffic during construction. Locations along anticipated construction routes requiring special accommodation would be identified during final engineering. Additionally, if needed, PG&E would obtain permits from the local jurisdiction and Caltrans. The risk of unsafe conditions on public roadways would be reduced through implementation of a Traffic Control Plan pursuant to the California Joint Utility Traffic Control Manual as stated in AMM TR-1 (Develop and implement traffic control plan). The full text of this Avoidance & Minimization Measure is presented in Table B-12 (Section B.11). This impact would be less than significant (Class III).

***Impact TR-2: Project implementation would increase congestion and travel delays on regional and local roadways or exceed an established level of service standard (Class III)***

Because of the low volume of existing traffic on area roads, the limited work involved, and the short duration of construction activities, with the implementation of a Traffic Control Plan, as defined in AMM TR-1 (Develop and implement traffic control plan), this impact would be less than significant (Class III).

## C.14.3.6 Cumulative Impacts

With mitigation, construction of the Revised Project and the PG&E Upgrades would result in less than significant impacts to transportation. The worst–case trip generation for the solar project would be approximately 1,150 peak trips. The traffic generated during construction activities for the Revised Project

would occur for a short period of time (approximately 18 months) and would be dispersed throughout different portions of the project route. Operation and maintenance traffic to and from the Revised Project would be very similar to existing conditions and is not expected to conflict with applicable congestion management programs. Other developments addressed in Section D, updated cumulative projects list, may generate traffic during construction or operation, but are not located in areas where the project roads would be directly affected. Other projects listed in Section D would obtain approvals from relevant agencies, which would likely require mitigation measures related to transportation and traffic impacts, if necessary. Therefore the contribution of the Revised Project and the PG&E Upgrades to cumulative impacts would not be cumulatively considerable and would be less than significant (Class III).

# C.14.4 Summary of Impacts

The significance of impacts for transportation and circulation for the Revised Project and for the PG&E Upgrades is summarized in Sections C.14.4.1 and C.14.4.2. Section C.14.4.3 summarizes the impacts of all project components.

## C.14.4.1 Revised Solar Project

There are no changes to the significance of impacts from the conclusions of the Final EIR. The impacts summarized in Table C.14-1 remain accurate. However, one mitigation measure has been added in response to the more intense traffic that would result from the Revised Project's construction schedule. The Revised Project would result in less than significant impacts to transportation and circulation. Impact TR-1 (Construction would create unsafe conditions on public roadways) and Impact TR-2 (Project implementation would increase congestion and travel delays on regional and local roadways or exceed an established level of service standard) would be less than significant with implementation of the mitigation measures (Class II).`

## C.14.4.2 PG&E Upgrades

The proposed PG&E upgrades would take place over 12-16 weeks. As recommended in AMM TR-1, PG&E would be required to use signage and flaggers as appropriate in order to minimize potential traffic delays. The PG&E upgrades would result in less than significant impacts to transportation and circulation. Impact TR-1 (Construction would create unsafe conditions on public roadways) and Impact TR-2 (Project implementation would increase congestion and travel delays on regional and local roadways or exceed an established level of service standard) would be less than significant (Class III).

## C.14.4.3 Overall Significance of Impacts

The overall impacts of the solar project and the PG&E upgrades would be less than significant with implementation of mitigation and AMMs (Class II). All solar project impacts to transportation and circulation would be less than significant with implementation of mitigation (Class II). All impacts of the PG&E Upgrades related to transportation and circulation would be less than significant (Class III). Cumulative impacts related to transportation and circulation would be less than significant (Class III).

# C.14.5 References

Caltrans (California Department of Transportation). 2008a. All Traffic Volumes on California State Highways. Traffic Volumes for I-5. Accessed April 30, 2010.

Caltrans. 2008b. California Department of Transportation. All Traffic Volumes on California State Highways. Traffic Volumes for SR-25. Accessed April 30, 2010.

Caltrans. 2005. Transportation Concept Report for Interstate 5. July.

Caltrans. 2003. Transportation Concept Report for State Route 25. November 13.

Caltrans. 2002. Guide for the Preparation of Traffic Impact Studies. December.

Fresno County. 2014. Fresno County General Plan Policy Document. 2000 General Plan Review, Revised Public Review Draft. September 2014. http://www.co.fresno.ca.us/ViewDocument.aspx?id=60071 Accessed November 2014.

Hexagon (Hexagon Transportation Consultants, Inc.). 2010. Panoche Solar Farm Traffic Study. 21. May 19.

Hexagon. 2014. Panoche Solar Farm Traffic Study. Prepared for Aspen Environmental Group. November 13.

Power (Power Engineers). 2010. Solargen Roadway Analysis. April 13.

# C.15 Water Resources

This section analyzes whether the Revised Project and PG&E transmission system upgrades result in any new significant impacts to water resources that were not previously identified and disclosed in the 2010 Final EIR, or whether there has been a substantial increase in the severity of any previously identified impacts to water resources. As part of this analysis, the section considers changes to the revised construction and operational use of water, described in Sections B.4.6 and B.5.4 (Project Description). The section also recommends changes to two mitigation measures.

New studies completed in 2014 include updated reports prepared by Applicant consultants Geologica, evaluating the revised proposal for water use. In July of 2014, Geologica prepared the "*Panoche Valley Solar Project, Groundwater Extraction Impact Evaluation*," and in December 2014 Geologica prepared the **"***Panoche Valley Solar Project, Groundwater Extraction Impact Evaluation, Revised*."

## C.15.1 Environmental Setting

The following section describes changes to the environmental setting that have occurred since 2010. Section C.15.1.1 describes any changes to the environmental setting that was presented in the 2010 Final EIR. Section C.15.1.2 describes the environmental setting for the area surrounding the PG&E Upgrades.

### C.15.1.1 Revised Solar Project

The hydrology and drainage patterns of the project area have not changed, and no new waters have been listed as impaired. No new groundwater demands have been introduced, and the basin is not in an overdraft condition. Grazing remains the primary land use in the area. However, the current drought in California has reduced recharge to the Panoche Valley Groundwater Basin and caused the water level in several wells to drop over the last several years.

The July 2014 Geologica report, ***Groundwater Extraction Impact Evaluation,*** updated the data used for analysis of impacts to water resources in the 2010 Final EIR. The analysis evaluates the ability of the aquifer and existing on-site wells to support water needs of the Revised Project. It also evaluates the potential impacts of groundwater extraction for the Revised Project, and presents recommendations for additional groundwater analysis and monitoring. On May 16, 2014, Geologica staff visited the project site and measured the depth to water in 17 wells on the project site. Geologica also reviewed a Department of Water Resources (DWR) water level database and found that water level elevations in a number of wells in Panoche Valley have declined over the last 5 years by approximately 5 to 15 feet. However, water level elevations in other wells within the Panoche Valley have risen during the same period. The Geologica water level measurements and the DWR data were used to create a groundwater elevation contour map for the spring of 2014. The map shows that groundwater generally flows southeasterly toward the narrows at the east end of Panoche Valley. Generally lower groundwater gradients were observed in 2014 compared to 2010, reflecting reduced groundwater recharge in the last few years. (Geologica, 2014a)

The December of 2014 Geologica report, ***Groundwater Extraction Impact Evaluation, Revised*****,** included updates and revisions to the water use data that was analyzed in the July of 2014 report. The revised report did not include any additional on-site well evaluation or revisions to the groundwater elevation contour map for the spring of 2014. The only changes in the revised report were updates to the analysis as a result of changes in the estimated amount of water use for project construction and the duration of

the construction period (18 months vs. a 24-month maximum that was included in the July of 2014 report). The revised water usage and potential impacts to Panoche Valley groundwater wells is presented in Section C.15.3, below (Geologica, 2014b).

## C.15.1.2 PG&E Upgrades

The PG&E Upgrades associated with the Revised Project include installation of approximately 17 miles of optical ground wire (OPGW) primarily on existing transmission towers between the Panoche Valley Solar Project site and the existing Panoche Substation in Fresno County, as well as installation of approximately 9 new wood poles within PG&E right-of-way (ROW) where the existing 230 kV line crossing existing 500 kV transmission lines. The telecommunications system upgrades also include construction of up to three new microwave communication towers and upgrades to an existing microwave tower. The PG&E Upgrades would include eight new transmission structures that are required to tie the existing Moss Landing–Panoche 230 kV transmission line into the proposed PG&E switchyard, located within the Revised Project site boundaries. The new transmission structures would be installed by PG&E after site preparation is completed by the Applicant.

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, the Call Mountains (west of the Panoche Valley), Panoche Mountain (east of the Panoche Valley), and the area surrounding the Helm Substation (approximately 13 miles southwest of the City of Fresno).

Groundwater resources would not be affected by the PG&E Upgrades and therefore only surface water is described in this section.

**Transmission Line Upgrades.** The upgraded portion of the Moss Landing–Panoche transmission line runs east to west, beginning at the Panoche Substation and ending adjacent to the project substation. The line first heads west-southwest, crossing flat to gently sloping agricultural land. As the line leaves the San Joaquin Valley floor, it continues west crossing between the Panoche and Tumey Hills roughly parallel to the Panoche Creek valley. Finally, the line turns slightly northwest, leaving the Panoche Hills and entering Panoche Valley, terminating at the project substation.

The Transmission Line Survey Report provided by PVS (Transmission Line Natural Resources Assessment Report, October 2014) indicated that there are three small unnamed drainages located within the upgraded portion of the PG&E ROW. There are no drainages that meet federal criteria for USACE jurisdiction within the upgraded portion of the PG&E ROW. The three unnamed drainages within the PG&E ROW may be considered waters of the State; however, no work is proposed below the top of bank of the features or within the bed and bank of the drainages. The delineation of jurisdictional waters within the PG&E ROW is described in the Transmission Line Natural Resources Assessment Report, dated October 20, 2014.

A total of 2.16 acres of PG&E related work areas fall within Zone A designated 100-year floodplains (PVS, 2014a and 2014b).

**Microwave Towers or Equipment.** Four microwave communication sites would be required for secondary communications: Panoche Valley, Call Mountain, Panoche Mountain, and Helm Substation.

A new microwave communication tower would be constructed within the fence line of the proposed Panoche Valley Solar Project Substation. For this new tower, the environmental setting for water resources remains the same as described in the 2010 Final EIR.

The Call Mountain site is in an area of uninhabited mixed forest and shrubland open space located west of the Panoche Valley. At this location, microwave equipment would be added to an existing microwave communication tower. The Call Mountain site (at approximately 3,900 feet of elevation) is located on a broad ridge near the summit of Call Mountain. No surface water resources are present at this site. The headwaters of an unnamed tributary to Tres Pinos Creek begin approximately 700 feet from the existing tower site.

Panoche Mountain (at approximately 2,100 feet of elevation), northeast of the project site, consists of uninhabited grassland and shrubland open space. Panoche Mountain currently has at least two existing microwave communication towers, and a new tower (up to 300 feet tall) is proposed within the developed site of one existing tower. The site is located at the summit of Panoche Mountain and is surrounded by steeply sloped ridges and valleys. The headwaters of several unnamed streams begin in the valleys that descend from the summit of Panoche Mountain. The nearest headwaters are located approximately 500 feet from the proposed tower site.

PG&E's Helm Substation is surrounded by agricultural lands, 13 miles southwest of the City of Fresno. There is currently no microwave communication tower at the substation. A new tower would be constructed within the fence line of the substation, and would be approximately 100 feet tall. No surface water resources are present on or near the Helm Substation site.

## C.15.2 Applicable Regulations, Plans, and Standards

No changes have occurred to the regulatory setting for water resources since 2010.

## C.15.3 Environmental Impacts and Mitigation Measures

This section addresses whether the changes to the Approved Project would result in any new significant water resources impacts or increase the severity or previously identified water resources impacts. Section C.15.3.1 restates the significance criteria used in 2010 to determine whether any project changes result in new or more severe significant impacts to the Revised Project or the PG&E transmission system upgrades. Section C.15.3.2 summarizes the impacts and mitigation measures presented in the 2010 Final EIR for ease of reference. Section C.15.3.3 presents the updated impact analysis for the Revised Project, and Section C.15.3.4 addresses two County proposed changes to the previously adopted mitigation measures. Section C.15.3.5 addresses the environmental impacts that would occur as a result of the PG&E transmission system upgrades, and Section C.15.3.6 describes cumulative impacts.

### C.15.3.1 Significance Criteria

The following significance criteria for water resources were derived from the Environmental Checklist in CEQA Appendix G. These significance criteria have been amended or supplemented, as appropriate, to address the nature of solar photovoltaic facilities in general, and the full range of potential impacts related to the Revised Project in particular. An impact of the Revised Project or the PG&E Upgrades would be considered significant and would require mitigation if it would meet one of the following criteria.

- Violate any water quality standards or waste discharge requirements, create any substantial new sources of polluted runoff, or otherwise degrade surface water or groundwater quality.

- Substantially deplete groundwater supplies or interfere with groundwater recharge, such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).
- Place within a watercourse or flood hazard area structures which would impede or redirect flood flows, or otherwise substantially alter the existing drainage pattern of an area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion, siltation, or flood-related damage on- or offsite.
- Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite.
- Result in or be subject to damage from inundation by mudflow.

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

## C.15.3.2 Approved Project Impacts and Mitigation Measures

Table C.15-1 presents a summary of the impacts and mitigation measures applicable to the Approved Project.

**Table C.15-1. Summary of Impacts and Mitigation: Water Resources**

| Impact No. and Text | Mitigation Required | CEQA Conclusion |
|---|---|---|
| Impact WR-1: Substantially deplete local groundwater supplies or interfere with groundwater recharge. | WR-1.1: Groundwater Monitoring and Reporting Plan.<br>WR-1.2: Aquifer Testing and Well Interference Analysis. | Class II |
| Impact WR-2: Substantially alter the existing drainage pattern of the site in a manner that results in flooding on- or offsite. | None. | Class III |
| Impact WR-3: Construction activity and excavation could degrade water quality due to erosion and sedimentation. | None. | Class III |
| Impact WR-4: Creation of new impervious areas could cause increased runoff resulting in flooding or increased erosion downstream. | None. | Class III |
| Impact WR-5: Project features located in a floodplain or watercourse could result in flooding, flood diversions, or erosion. | None. | Class III |
| Impact WR-6: Construction or operation of the project could result in accidental releases of contaminants that could degrade water quality. | WR-6.1: Accidental spill control and environmental training.<br>WR-6.2: No storage of fuels and hazardous materials near sensitive water resources.<br>WR-6.3: Maintain vehicles and equipment. | Class II |
| Impact WR-7: Contribute to cumulatively considerable effects on water resources. | None. | Class III |

## C.15.3.3 Revised Solar Project Impacts

Six water resources impacts are addressed in this section; cumulative impacts are evaluated in Section C.15.3.6.

***Impact WR-1: Substantially deplete local groundwater supplies or interfere with groundwater recharge (Class II)***

The Applicant's consultant, Geologica, analyzed whether the increased water pumping during the shorter, 18-month, construction period would substantially deplete local groundwater supplies or interfere with recharge (Geologica, 2014b). The report concluded that three of the on-site wells are likely capable of supplying sufficient water to meet project needs either individually or in combination. The assessment of available water supply is based on the thickness of the available water column for each of the wells that were evaluated and the predicted amount of drawdown that would be caused by groundwater extraction for construction and operation.

Geologica assessed the thickness of the available water column for three of the wells on-site. The locations of wells are shown on Figure C.15-1, included at the end of this section.

- Well #4 has approximately 375 feet of available water column.
- Well #20 has approximately 331 feet of available water column.
- Well #19 has approximately 96 feet of available water column.

Geologica predicted that the maximum amount of drawdown at a water supply well for the Revised Project would be 5 feet. Based on that prediction, Geological determined that the three wells listed here would have sufficient water column available to supply the water needs of the Revised Project.

**Construction Water Demand.** As stated in Section B.5.4, the peak daily water use during construction would be 1.72 acre-feet (approximately 581,250 gallons per day [gpd]), and peak annual use would be approximately 314.87 acre-feet (102.6 million gallons per year). The total construction usage is stated at 385.15 acre-feet (or 125,500,500 gallons). This amount of peak groundwater use during Revised Project construction activity is 1.585 acre-feet per year (afy) greater per day and 276.3 afy greater per year than what was analyzed in the 2010 Final EIR for the Approved Project. Note that the peak daily water usage of approximately 581,250 gpd is the maximum water that will be used, not the maximum amount extracted from the onsite wells per day. The maximum volume to be pumped from onsite wells will remain at approximately 450,000 gpd as described in the Geologica report dated December 15, 2014. In order to accommodate water usage during construction, the Project proposes to construct three temporary construction water ponds with a combined capacity of approximately 4,433,000 gallons, along with three temporary 20,000-gallon water tanks near existing or new wells. This provides for up to 4,493,000 gallons of stored water capacity that is available for use during construction. This water storage capacity will allow groundwater extraction to continue at a relatively constant level throughout the construction period, while maintaining the ability for construction to meet peak daily demands.

**Construction Excavation and Grading.** Geologica developed estimates of potential groundwater usage for the Revised Project. According to Geologica, the total amount of water needed for dust control during mass excavation and grading operations would total approximately 18.6 million gallons. The mass excavation and grading operations would occur over a period of 1 to 6 months, depending on the allowable rate of daily soil disturbance. Peak production of groundwater would not exceed a rate of approximately 450,000 gpd.

**Construction Dust Control.** The Geologica report states that maximum estimated water required for dust control during PV system construction would total approximately 481,250 gpd as a "worst case rate." Geologica evaluated a potential range of water usage for dust control during PV system construction and found that a total of approximately 106.8 million gallons of water would be required, with a continuous extraction rate of approximately 230,137 gpd during the 18-month construction period. This

rate assumes that one 2,500 gallon water truck provides dust control for 7 to 8 acres, and that the water would be applied to that acreage three times per day, for a total of 875 gallons per acre. This rate also assumes that under average working conditions, a portion of the disturbed area will be crusted over and would not require constant watering for dust suppression.

**Operational Water Use.** The applicant estimated operational groundwater needs of approximately 812,000 gallons per year for panel washing and approximately 112,500 gallons per year for employee use. The operational water use is based on an assumed 15 full-time employees that would operate the plant, with up to 50 employees needed at certain times (e.g., panel washing). These operational totals would equate to a fixed continuous groundwater extraction rate of approximately 2,533 gpd or approximately 1.75 gallons per minute after the completion of project construction.

**Effects of Groundwater Use – Construction.** The Revised Project would use a substantially greater amount of groundwater during construction than would the Approved Project. This water use would be short-term (during the 18-month construction period) and would temporarily lower water levels for portions of the Panoche Valley Groundwater Basin. The greatest drawdown would occur at the extraction wells and would decrease with increasing distance from the pumped wells.

Pumping simulations performed by Geologica for Well #4 found that water level drawdown would be greatest at the end of the construction period, just before groundwater extraction rates would be reduced for operational needs. The simulations predicted that maximum drawdown (12 months after the start of pumping) in two wells near the southern boundary of the project site would be between 1.2 and 2.7 feet. Drawdown for a well that serves an organic farm southeast of the property was predicted to result in a maximum drawdown of approximately 0.45 to 1.5 feet. The maximum simulated drawdown for the pumped well (Well #4) was predicted to be 3-5 feet.

Due to uncertainties in aquifer parameters and unknown future rainfall recharge rates; the amount of time required for complete recovery of water levels after construction is uncertain but could take several years. The continuation of current drought conditions would extend the recovery time for Panoche Valley Groundwater Basin levels after drawdown caused by construction water use for the Revised Project. Careful and regular monitoring of groundwater levels in both on-site and off-site wells, as required in Mitigation Measure WR-1.1, would be required in order to prevent the creation of overdraft conditions in the Panoche Valley Groundwater Basin.

**Effects of Groundwater Use – Operation.** Water use for operation of the Revised Project would be reduced compared to operational water demand for the Approved Project.

**Conclusions.** Based on the current water levels in the groundwater basin, Geologica concluded that the predicted drawdown levels during the construction phase and long-term operation are unlikely to significantly impair existing water supply well use in the valley. They calculated a maximum drawdown for off-site wells of 2.7 feet (along the southern boundary of the site). The available water column for these wells (Well #14 and Well #16) is unknown. However, the minimum available water column reported by Geologica (for Wells #17 and #18) was approximately 30 feet. It is therefore assumed that a drawdown of 2.7 feet would not preclude the use of any off-site well for water supply. Moreover, groundwater monitoring and well interference analysis required in mitigation measures would ensure that the use of off-site wells for water supply would not be adversely affected.

Geologica's report concludes that predicted drawdown levels during the construction phase and long-term operation are unlikely to significantly impair existing water supply well use in the valley. However, due to the lack of detailed information about the groundwater basin characteristics, the potential for the Revised Project's water use to negatively affect groundwater remains significant. There is a potential

for project water use to lower the water levels in off-site wells (those outside the solar project boundaries). In order to ensure that this impact does not become severe, implementation of two comprehensive mitigation measures is required. Mitigation Measure WR-1.1 establishes a Groundwater Monitoring and Reporting Plan, and Mitigation Measure WR-1.2 requires Aquifer Testing and Well Interference Analysis. These mitigation measures have been modified based on the more aggressive groundwater withdrawal included in the Revised Project. Implementation of these measures would ensure that groundwater extraction for the Revised Project would be properly monitored and that drawdown at nearby private wells would not exceed five feet. As a result of implementing these two measures, the impact of the Revised Project's water use would be less than significant (Class II).

***Impact WR-2: Substantially alter the existing drainage pattern of the site in a manner that results in flooding on- or offsite (Class III)***

The total graded area for the project would increase from 200 acres (for the Approved Project) to 392 acres (with the Revised Project). Because the majority of the project site occupies relatively flat terrain, it is not anticipated that the grading activities for the Revised Project would result in changes to drainage patterns, creating flooding on- or off-site.

The total area of permanent disturbance would decrease from 2,203 acres to 1,888 acres. For activities involving alteration of a jurisdictional drainage channel or construction within a floodplain (road crossings or other infrastructure), compliance with U.S. Army Corps of Engineers (USACE) regulations and implementation of Best Management Practices described in APM WR-3 would ensure that potential impacts remain less than significant (Class III).

***Impact WR-3: Construction activity and excavation could degrade water quality due to erosion and sedimentation (Class III)***

The total graded area for the Project would increase from approximately 200 acres to approximately 392 acres. This increased earth movement could potentially degrade water quality through erosion and sedimentation. Compliance with existing regulations, including implementation of a Storm Water Pollution Prevention Plan (SWPPP), and implementation of BMPs described in APMs WR-1 through WR-3 would ensure that potential impacts remain less than significant (Class III).

***Impact WR-4: Creation of new impervious areas could cause increased runoff resulting in flooding or increased erosion downstream (Class III)***

Although the total graded area for the Project would increase from approximately 200 acres to approximately 392 acres, the total area of permanent disturbance has decreased, and the amount of impervious surface associated with the substation, switchyard, and O&M building remains unchanged. Compliance with existing regulations, including implementation of a SWPPP, would ensure that runoff is properly controlled. Therefore, this impact would remain less than significant (Class III).

***Impact WR-5: Project features located in a floodplain or watercourse could result in flooding, flood diversions, or erosion (Class III)***

Under the Revised Project, any permanent features that would be placed in a watercourse or FEMA-designated 100-year floodplain would be subject to permitting and development standards of the USACE, the Regional Water Quality Control Board, and the California Department of Fish and Wildlife. Bridges, culverts, or low water crossings would be installed at locations where new roads cross stream channels, including at several locations along the required new perimeter access road.

Portions of the perimeter road crosses on-site federal jurisdictional washes. These crossings would be used only for emergency access or for limited maintenance access to cables within the bridge crossing at Las Aguilas. There are five planned crossings of federally jurisdictional washes. Crossings would be designed based on the United States Army Corps of Engineers (USACE) 404(b)(1) analysis and the *Least Environmentally Damaging Practicable Alternative*. The two crossings on the western side of the project would utilize single-span bridges, whereas the three affected crossings on the eastern side of the project would involve installation of a pipe arch culvert, low water crossings and filling/grading of washes. The location of these crossings is shown on Figure B-3 (Project Roads). Federal crossings will be permitted through obtaining a USACE Section 404(b)(1) permit and 401 Certification by the Regional Water Quality Control Board. The federal crossings, as well as the crossings of washes, creeks, and drainages that are potentially waters of the state and regulated by the California Department Fish and Wildlife (CDFW), will be permitted through the submittal of a Lake and Streambed Alteration Agreement (LSAA) Notification. The crossings would be designed and engineered in conformance with USACE regulations and would not result in flooding or diversion of floodwaters. Erosion that would be caused by construction of these stream crossings would be controlled through implementation of a SWPPP. This impact would remain less than significant (Class III).

***Impact WR-6: Construction or operation of the project could result in accidental releases of contaminants that could degrade water quality (Class II)***

The same equipment that was described in the 2010 Final EIR would be used to construct the Revised Project. The Revised Project would compress the construction schedule from five years to approximately 18 months. Construction activities would be shorter but more intense. The risk of a leak or accidental spill of hazardous materials would be the same as described in the 2010 Final EIR, and the same APMs and mitigation measures would apply. Implementation of Mitigation Measures WR-6.1 (Accidental spill control and environmental training), WR-6.2 (No storage of fuels and hazardous materials near sensitive water resources), and WR-6.3 (Maintain vehicles and equipment) would ensure that impacts are less than significant (Class II).

## C.15.3.4 Changes to Adopted Mitigation Measures

This section addresses changes to mitigation measures and APMs adopted in 2010.

### Mitigation Measures

The mitigation measures adopted in 2010 that are not modified here are presented in Appendix 3, Section 3.1. The applicant has not proposed changes to the mitigation measures adopted from the 2010 Final EIR, but changes are proposed by the County to Mitigation Measures WR-1.1 and WR-1.2 to ensure adequate protection for well owners due to the increased rate of water withdrawal in the 18-month construction timeframe. Changes are shown in underlined text for added language, and strikeout for deleted language.

**MM WR-1.1** **Groundwater Monitoring and Reporting Plan.** The Applicant shall prepare and submit a Groundwater Monitoring and Reporting Plan to San Benito County for review and approval 60 days prior to commencing project-related pumping activities. The Groundwater Monitoring and Reporting Plan shall document the location of project well(s) and well construction details (diameter, total depth, depth of screen interval, depth of sanitary seal, pumping equipment).

The Groundwater Monitoring and Reporting Plan shall identify the procedures to install and ~~routinely~~ monitor a water meter on a daily basis. The meter shall be equipped with a flow totalizer at each project well, and shall include requirements to document the gradient and directional flow of groundwater.

The Groundwater Monitoring and Reporting Plan shall also provide detailed methodology for monitoring groundwater levels in the valley based on readings taken on at least a monthly basis. The primary objective for the monitoring is to establish pre- and post-construction groundwater level trends that can be quantitatively compared against observed and calculated trends near the project pumping wells and near potentially impacted existing private wells. The monitoring well~~s~~ network~~s~~ shall include a minimum of three new or existing on site or off-site down-gradient wells near the southern project boundary.

Monthly ~~Annual summary~~ reports summarizing daily pumping and monthly (minimum) water level monitoring data shall be submitted to San Benito County ~~during the construction period. In addition, annual reports shall be~~ submitted ~~for at least the first five years of the project (~~throughout construction~~ and operation)~~. ~~and a~~ Annual reports shall be submitted for the following three years. Each report shall include, ~~and~~ at a minimum ~~shall include~~:

- Daily water usage, monthly range of usage, and monthly average of daily water usage in gallons per day;
- Total water used on a monthly and annual basis in acre-feet; summary of all water level data; and
- Identification of trends that indicate potential for off-site wells to experience deterioration of water level.

If results of the monthly trend analyses indicate that the project pumping has resulted in water level decline of 5 feet or more below the baseline trend at nearby private wells, the applicant shall be prohibited from using the well(s) as a water source for the project, or shall reduce groundwater pumping until water levels stabilize or recover.

At the conclusion of ~~the five-year~~ project construction~~ operation period~~ (the time of highest groundwater demand) the project owner and San Benito County shall jointly evaluate the effectiveness of the Groundwater Monitoring and Reporting Plan and determine if monitoring frequencies or procedures should be revised, extended into the operation period, or eliminated.

**MM WR-1.2** **Aquifer Testing and Well Interference Analysis.** Prior to pumping or making operational any existing wells or construction of any new wells south of Well #19 (as depicted on Figure C.15-1), the applicant shall prepare and submit an Aquifer Testing and Well Interference Analysis Plan to San Benito County for review and approval 14 days prior to commencing the aquifer testing. The Aquifer Testing and Well Interference Analysis Plan shall discuss the methodology for conducting a 72-hour aquifer test, analysis of aquifer parameters, and the analysis of well interference at nearby private wells. The primary objective of the aquifer test and well interference analysis is to evaluate potential adverse well interference effects prior to the onset of sustained pumping for the project.

The aquifer test duration shall be a minimum of 72-hours and will include measurement of water level drawdown and recovery in the pumping well and a minimum of two down-

gradient observation wells. Additional observation wells, including cross-gradient locations may be included. The use of existing wells for pumping or water level observation shall include research of well construction records to identify well depth, screen interval, and aquifer depth and thickness. Video surveys shall be performed on all existing wells lacking available well construction records (well depth and screen intervals). The aquifer test shall be performed at a pumping rate that will "stress" the aquifer and result in measurable drawdown at the nearest observation well after two to four hours. Drawdown and recovery water level data collected from the pumping and observation wells shall be analyzed to determine the local aquifer parameters that will in turn be used to calculate water level drawdown at nearby off-site wells. The calculation shall use the Theis equation or other acceptable approach to estimate water level lowering due to project pumping.

The results of the aquifer test and well interference analysis shall be submitted to San Benito County for review and approval of the proposed well for project water supply 15 days prior to the onset of sustained pumping for the project. If a new or existing well located south of existing Well #19 is approved for project use, the Groundwater Monitoring and Reporting Plan (Mitigation Measure WR-1.1) shall be amended to identify monitoring wells near the new project supply well.

## Revised Applicant Proposed Measures

The applicant has proposed minor changes to four of the Applicant Proposed Measures (APMs) for water resources. These changes are shown below (modified text is shown in strikeout for removed text and underline for added text). APMs not shown in this section have not changed and are presented in Appendix 3, Section 3.2. The Applicant has suggested changes to APM WR-1 through APM WR-4; these changes would not result in more severe or more extensive impacts. The changes serve either to clarify the timing or applicability of the APM or to correct a typographic error. These changes would not reduce the level of protection for any water resources.

**APM WR-1** If they are damaged or destroyed by construction activities, water facilities (i.e., physical damage to equipment or infrastructure) would be repaired or replaced to their pre-disturbed condition as required by the landowner or land management agency.

**APM WR-2** 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 Project 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.

**APM WR-3** Roads would be built as near as possible to right angles to the streams and washes or as required by Project permits. Culverts would be installed where necessary. All construction and maintenance activities shall be conducted in a manner that would minimize disturbance to vegetation, drainage channels, and intermittent or perennial stream banks. In addition, road construction would include dust-control measures during construction in sensitive areas. All existing roads would be left in a condition equal to or better than their condition prior to the construction of the solar farm.

**APM WR-4** The Applicant would limit the panel washing to two washings per year during project operation. Should this estimate need to be revised ~~one~~ once the project is fully opera-

tional depending on soil/dust conditions, the Applicant would consult with the County and obtain the requisite approvals prior to any modifications to this schedule.

## C.15.3.5 PG&E Upgrades Impacts

The temporary and permanent water resources impacts of the PG&E Upgrades are analyzed in this section. This analysis is based on the impact statements defined for the solar project, but only Impacts WR-3 and WR-6 apply to the PG&E Upgrades. Most impacts addressed for the solar project would not occur as a result of construction or operation of the PG&E transmission system upgrades due to the minimal amount of water needed to support construction activities because of the minimal acres of temporary disturbance and short construction period. Construction and operation of the PG&E Upgrades would not affect surface water drainage due to the very small area of permanent effect. Operation of the PG&E Upgrades would require no use of water and no permanent impacts to state or federal jurisdictional waters are anticipated. The following four impacts are not further addressed:

- Impact WR-1: Substantially deplete local groundwater supplies or interfere with groundwater recharge
- Impact WR-2: Substantially alter the existing drainage pattern of the site in a manner that results in flooding on- or offsite
- Impact WR-4: Creation of new impervious areas could cause increased runoff resulting in flooding or increased erosion downstream
- Impact WR-5: Project features located in a floodplain or watercourse could result in flooding, flood diversions, or erosion

***Impact WR-3: Construction activity and excavation could degrade water quality due to erosion and sedimentation (Class III)***

The PG&E Upgrades would involve a minor amount of soil disturbance for preparation of pulling/stringing sites and construction of approximately 9 new wood poles along the upgraded portion of the transmission line. PG&E would also construct up to 12 new tubular steel poles (TSPs) to tie the existing transmission line into the new PG&E switchyard located within the Revised Project boundaries. The new TSPs would be installed by PG&E after site preparation is completed by the Applicant. The PG&E Upgrades would also include excavation and construction of the new microwave communication towers. No surface water resources exist on or near the microwave communication tower sites. The three unnamed drainages within the ROW of the upgraded portion of the transmission line will not be disturbed by the upgrades, as no work will be performed within the bed and bank of the drainages. Any erosion caused by the PG&E Upgrades would be minimized through implementation of a required SWPPP. This impact would be less than significant (Class III).

***Impact WR-6: Construction or operation of the project could result in accidental releases of contaminants that could degrade water quality (Class III)***

Construction of the PG&E Upgrades would involve the use of heavy machinery, including helicopters and other motorized equipment. This machinery could leak potentially hazardous materials, including diesel fuel, gasoline, lubricant oils, hydraulic fluid, antifreeze, and transmission fluid. A leak or accidental spill of these materials could contaminate nearby waterways, including Panoche Creek and the three unnamed drainages within the ROW of the upgraded portion of the transmission line. This risk of contamination would be reduced through compliance with existing regulations, including implementation of a SWPPP. In addition, PG&E has committed to implementation of Avoidance and Minimization Measure (AMM)

WR-1 (Hazardous Material Spill Prevention and Response Plan). With implementation of this AMM, this impact would be less than significant (Class III).

### C.15.3.6 Cumulative Impacts

The projects that have been constructed or proposed in the area of potential cumulative effects have changed since 2010, as described in Section D. Incremental impacts when compared to the impacts of other cumulative projects would be less than significant and not cumulatively considerable. The project would not interfere substantially with drainage patterns, nor would it create additional stormwater runoff. BMPs would be adopted to reduce the potential for stormwater runoff and pollution. Additionally, implementation of project-specific grading permits and a SWPPP would protect water quality. The Revised Project presents less than significant impacts related to groundwater withdrawals or flooding hazards. Many of the potentially incremental impacts are specific to the immediate vicinity of the project construction and operation locations (i.e., alteration of drainage patterns). Because the cumulative projects would not physically overlap with the Revised Project construction or infrastructure, the Revised Project's contribution to any cumulative impacts would not be cumulatively considerable. (Class III).

## C.15.4 Summary of Impacts

The significance of impacts for water resources for the Revised Project and for the PG&E Upgrades is summarized in Sections C.15.4.1 through C.15.4.3.

### C.15.4.1 Revised Solar Project

There are no changes to the significance of impacts from the conclusions of the 2010 Final EIR. The impacts summarized in Table C.15-1 remain accurate. While groundwater withdrawal for the Revised Project would occur at a faster rate, revised mitigation measures would ensure that there would be no effect on neighboring offsite wells, and impacts would be less than significant (Class II).

### C.15.4.2 PG&E Upgrades

The PG&E Upgrades would result in adverse but less than significant impacts related to soil erosion and potential for accidental release of hazardous materials during construction. Both impacts would be controlled with existing regulations and implementation of an AMM.

### C.15.4.3 Overall Significance of Impacts

Impacts to water resources from the Revised Project and the PG&E Upgrades would be less than significant with the implementation of previously adopted and newly proposed mitigation measures, APMs, and the PG&E AMM. Implementation of existing regulations and required permits from CDFW and the Corps would effectively prevent erosion and other surface water effects. Groundwater would be protected by implementation of two detailed mitigation measures requiring ongoing testing and monitoring.

## C.15.5 References

Geologica. 2014a. Panoche Valley Solar Project Groundwater Extraction Impact Evaluation. July.

_____.2014b. Panoche Valley Solar Project Groundwater Extraction Impact Evaluation, Revised. December 2014.

PVS (Panoche Valley Solar, LLC). 2014a. PG&E Baseline Information Attachment A – Panoche Impact Areas Acreage Overlay Analysis. November.

PVS (Panoche Valley Solar, LLC). 2014b. PG&E Baseline Information – Panoche FEMA Overview Map. November.

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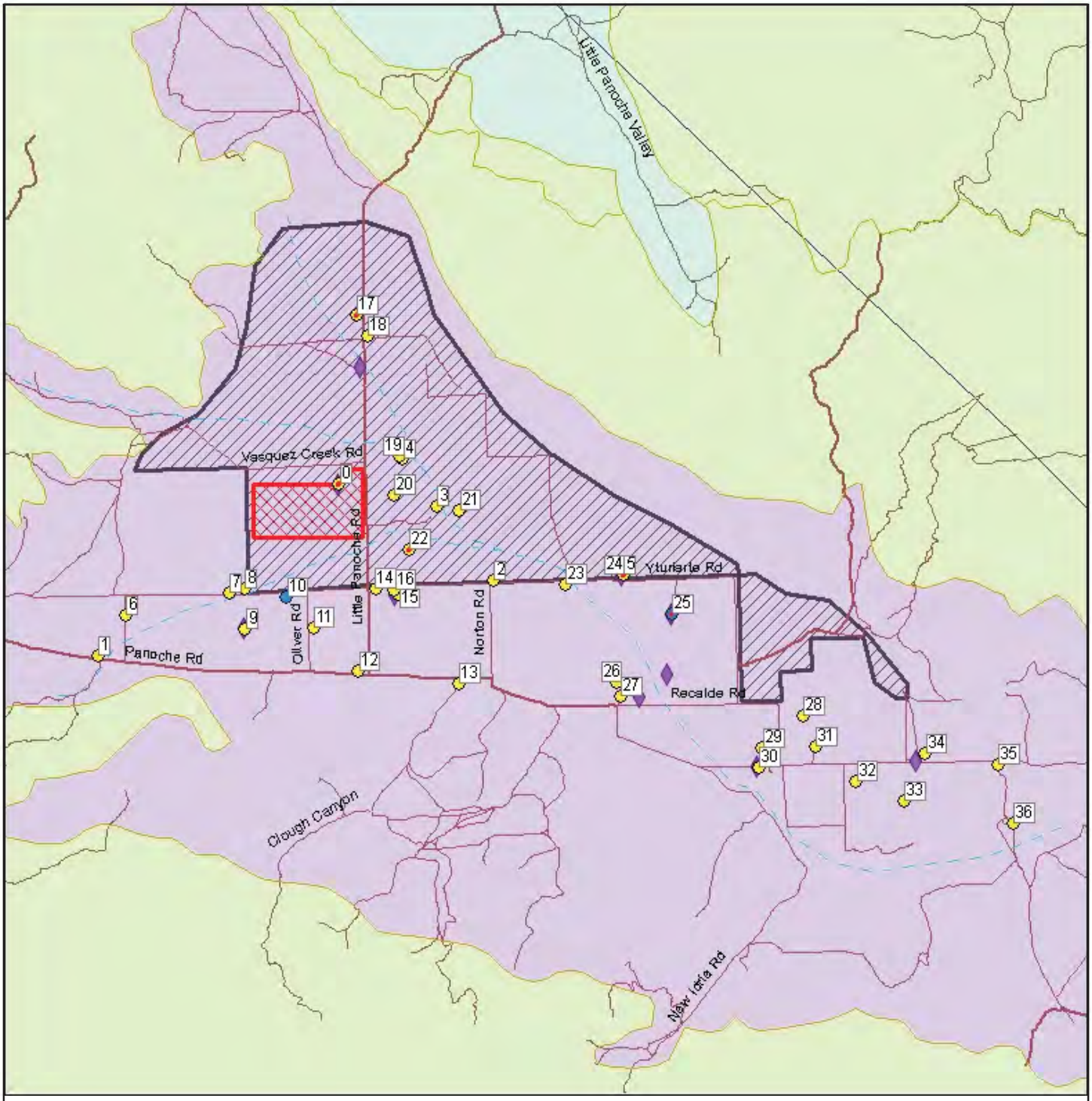



**Water Wells**

- Known Operational Wells
- Well Locations from USGS Quad*
- 2009 Deep (>100'bgs) Depth to H2O*
- 2009 Shallow (<100'bgs) Depth to H2O*

* Not Included in Depth to GW Contouring

- 19 Well Reference Number
- Panoche Watershed
- Creeks
- Phase 1 Area
- Project Property

**Panoche Valley Roads**

- residential
- secondary

This figure is adopted from the 2010 Final EIR and provides the locations of water supply wells in Panoche Valley. It has not been revised to reflect the Revised Project footprint and single construction phase.

Aspen Environmental Group

0 .75 1.5 3 Miles

Source: PVS, 2010; Geologia, 2010.

Figure C.15-1

Active and Inactive Groundwater Well Locations

# D. Cumulative Scenario

## D.1 CEQA Requirements

Under the CEQA Guidelines, "a cumulative impact consists of an impact which is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts." 14 Cal Code Regs §15130(a)(1). CEQA Pub. Res. Code §21000 et seq., an EIR must discuss cumulative impacts if the incremental effect of a project, combined with the effects of other projects is "cumulatively considerable." 14 Cal Code Regs §15130(a). Such incremental effects are to be "viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects." 14 Cal Code Regs §15064(h)(1). Together, these projects comprise the cumulative scenario which forms the basis of the cumulative impact analysis.

There are two commonly used approaches, or methodologies, for establishing the cumulative impact setting or scenario. One approach is to use a "list of past, present, and probable future projects producing related or cumulative impacts." 14 Cal Code Regs §15130(b)(1)(A). The other is to use a "summary of projections contained in an adopted local, regional, or statewide plan or related planning document" or "in an adopted or certified prior environmental document for such a plan." 14 Cal Code Regs §15130(b)(1)(B).

This EIR uses the list approach to provide a tangible understanding and context for analyzing the potential cumulative effects of a project. General plans and other planning documents were used as additional reference points in establishing the cumulative scenario for the analysis. This section of the SEIR updates the 2010 Final EIR list to identify other past, present and probable future projects since 2010 that forms the basis of the cumulative impacts analysis that is included in each environmental resource section of Chapter 3.

## D.2 Cumulative Development Scenario

The cumulative impact assessment for the incremental changes associated with the Revised Project considers both projects in the general project area around the Panoche Valley, and also other large solar projects where similar resources would be affected. As documented throughout the SEIR, the impacts of the Revised Project will generally occur during the temporary construction period. The impact analysis for each discipline presented in Section C of the 2010 Final EIR defines the geographic area for which impacts could combine with those of the proposed PVSP project, and impact analysis is updated in this SEIR.

Past, present or probable future projects that could contribute to one or more cumulative effects are listed in Table D-1. Collectively, these projects represent known and anticipated activities that may occur in the project vicinity that have the potential to contribute to a cumulative impact on the environment. However, most projects are outside of the local Panoche Valley region and would be unlikely to contribute to cumulative considerable impacts for most resource areas. The table indicates the project name and project type, as well as its location and status.

**Table D-1. New Cumulative Projects**

| Project | Location | Distance from Revised Project | Type | Status |
|---|---|---|---|---|
| Westlands Solar Farm | Huron, CA, on 85 acres adjacent to I-5 | 50 miles southeast | Solar PV 18 MW | Operational, 1.5 MW expansion under consideration |
| Stroud Solar Station | Helm, near the intersection of SR 145 and W. Kamm Ave, on 123 acres | 40 miles east, southeast | Solar PV 20 MW | Operational |
| Five Points Solar Station | Five Points near the inter-section of SR 145 and SR 269, on 105 acres | 45 miles east, southeast | Solar PV 15 MW | Operational |
| Westlands Solar Station | Five Points, on 100 acres | 45 miles east, southeast | Solar PV 15 MW | Operational |
| Cantua Solar Station | Cantua Creek, west Fresno County | 30 miles east, southeast | Solar PV 20 MW | Operational |
| Huron Solar Station | Cantua Creek, west Fresno County | 30 miles east, southeast | Solar PV 20 MW | Operational |
| Giffen Solar Station | North side Mountain View between Oil City Ave and S. Stanislaus on 160 acres | 30 miles southeast | Solar PV 10 MW | Operational |
| West Gates Solar Station | Adjacent to the PG&E Gates Substation | 50 miles southeast | Solar PV 10 MW | Operational |
| Gates Solar Station | Adjacent to the PG&E Gates Substation | 50 miles southeast | Solar PV 20 MW | Operational |
| North Star Solar | Near Mendota Federal Prison in Mendota, CA on 640 acres | 25 miles east, northeast | Solar PV 60 MW | Under Construction as of October 2014 |
| RE Adams East, LLC | SR 33 and South Avenue on 319 acres | 25 miles east, northeast | Solar PV | Under construction as of 5/19/14, scheduled to be complete December 2014 |
| Gasna 16P, LLC (Gestamp) | Corner of Fig and Central on 19 acres | 60 miles east | Solar PV 1.5 MW | Online as of December 2012 |
| Wellhead Renewable Energy. LLC | Muscat Avenue, 4 miles southwest of City of Kerman on 102.5 acres | 45 miles east | Solar PV | MND |
| Whitney Point Solar | S. Lake Avenue, 3.3 miles southwest of Five Points on 320 acres | 45 miles east, southeast | Solar PV | Approved 7/21/11, extension to use CUP granted 7/17/14 |
| Fresno Solar | Lassen Ave, 4.5 miles east of city limits of City of San Joaquin on 50 acres | 40 miles east | Solar PV | Approved 9/18/14 |

**Table D-1. New Cumulative Projects**

| Project | Location | Distance from Revised Project | Type | Status |
|---|---|---|---|---|
| RE Tranquility #1 through #8 (Recurrent Energy) | Seven miles southwest of Tranquility, 5.5 miles east of I-5, 5 miles north of Three Rocks on 3,732 acres | 25 miles southeast | Solar PV up to 400 MW | Approved 10/9/14 |
| Gasna 52P LLC (Gestamp Helm 1) | W. Springfield, 0.25 miles south of San Joaquin on 280 acres | 40 miles east | Solar PV 23 MW | Under environmental review (7/15/14) |
| Gestamp Power | Nees Avenue, 7 miles southwest of City of Firebaugh on 197 acres | 30 miles northeast | Solar PV | Approved 7/26/12, extension to use CUP granted 8/7/14 |
| Three Rocks Solar, LLC | Three Rocks | 25 miles southeast | Solar PV 13 MW | Approved 6/4/13; PPA from PG&E 11/15/13 |
| Frontier Renewables, LLC (Five Points Solar Park and Giffen Solar Park) | Paige between Sonoma and Napa on 500 acres | 45 miles southeast | Solar PV 80 MW | Approved 4/10/14, PPA with Univ of California September 2014, expected online 2016 |
| FPC Solar (Fresno Cogeneration Partners) | Lassen, 1 mile north of Manning on 50 acres | 35 miles east | Solar PV | Approved 9/18/14 |
| Westlands Solar Park Master Plan | West-central Kings County on 24,000 acres | 60 miles southeast | Solar PV 2,400 MW | Notice of Preparation of EIR March 13, 2013 |
| Wright Solar Park | Western Merced County near Santa Nella, CA, southwest of intersection of I-5 and SR 33/152 | 35 miles northwest | Solar PV 200 MW | Draft EIR published July 2014, not yet in construction, final EIR not yet publically available |
| Quinto Solar Project | Merced County | 40 miles northeast | Solar PV 110 MW | Under construction as of July 29, 2014 (16 month timeframe for construction, complete approx. Nov 2015) |

Source: Fresno County, 2014; Westlands Irrigation District, 2013; Monterey County, 2014.

## D.3 Cumulative Impact Analysis Methodology

The 2010 Final EIR analyzed the cumulative impacts of the Approved Project based on the project list that was presented in the 2010 Final EIR. The SEIR considers whether any of these new projects that were not previously identified in the 2010 Final EIR when combined with the incremental impact of the Revised Project would create a new significant cumulative impact or would cause a substantial increase in the severity of a previously identified cumulatively significant impact.

The area within which a cumulative effect can occur for these new projects varies by resource. For example, air quality impacts tend to disperse over a large area, while traffic impacts are typically more localized. For this reason, the geographic scope for the analysis of cumulative impacts must be identified for each resource area. The impact analysis for each discipline presented in Section C of the 2010 Final EIR defines the geographic area for which impacts could combine with those of the proposed PVSP

project. The geographic area considered in the 2010 Final EIR has not changed for the Revised Project analysis.

The SEIR's analysis of cumulative effects considers a number of variables including geographic (spatial) limits, time (temporal) limits, and the characteristics of the resource being evaluated. The geographic scope of each analysis is based on the topography surrounding the Revised Project and the natural boundaries of the resource affected, rather than jurisdictional boundaries.

Each new project (as shown in Table D-1) has its own implementation schedule, which may or may not coincide or overlap with the Revised Project's schedule. This is a consideration for short-term impacts from the Panoche Valley Solar Farm. However, to be conservative, the cumulative analysis assumes that all projects in the cumulative scenario are built and operating during the operating lifetime of the Revised Project. Because these cumulative projects will all be subject to environmental regulations similar to the Revised Project analyzed in this SEIR, the cumulative analysis focuses on determining whether the Project's incremental contribution to cumulative impacts would be cumulatively considerable.

## D.4 References

CEC (California Energy Commission). 2014. Tracking Progress: Renewable Energy – Overview. http://www.energy.ca.gov/renewables/tracking_progress/documents/renewable.pdf. Accessed November 11, 2014.

Fresno County. 2014. Solar Projects Submitted to Fresno County. http://www.co.fresno.ca.us/ViewDocument.aspx?id=57304. Accessed November 11, 2014.

Monterey County. 2014. California Flats Solar. http://www.co.monterey.ca.us/planning/major/California%20Flats%20Solar/California_Flats_Solar.htm. Accessed November 11, 2014.

Westlands Water District. 2013. Notice of Preparation (NOP) of a Draft Environmental Impact Report (EIR) Pursuant to the Requirements of the California Environmental Quality Act (CEQA). March.

# E. Alternatives

## E.1 Introduction

The 2010 Final EIR analyzed a reasonable range of alternatives to the proposed project, including presentation of a detailed analysis of four alternatives in addition to the required "no project" alternative. The Final EIR also described five additional alternatives that were considered but eliminated from further analysis because they were infeasible. Section E of the 2010 Final EIR provides extensive information on the development and screening of those project alternatives.

This section considers whether the new or modified project components analyzed in this Supplemental EIR or new information relating to the previously analyzed alternatives alter any conclusions regarding either the comparison of the Revised Project to the alternatives analyzed in the 2010 Final EIR or the identification of the environmentally superior alternative. In this case, the Supplemental EIR did not identify any new significant impacts resulting from the changes incorporated in the Revised Project that warrant the consideration of additional project alternatives. Like the originally Proposed Project described in the 2010 Final EIR and the Approved Project, the Revised Project would continue to have significant and unavoidable impacts related to noise and aesthetics. The 2010 Final EIR identified and analyzed several reduced density alternatives and an off-site alternative that would substantially lessen these significant impacts as well as other impacts of a solar project in Panoche Valley.

It should be noted that an EIR is not required to consider alternatives to a component of the project. Rather, the alternatives analysis in the 2010 Final EIR appropriately considered alternatives to the project as a whole, which was the construction and operation of the original 420 MW project. As described in Sections A and B, the County approved one of the reduced density alternatives that was developed and analyzed in the Final EIR: the 399 MW "Alternative A Revised," which is now the Approved Project. The Board found that the other four Alternatives were infeasible when it certified the 2010 Final EIR and approved the Alternative A Revised. In 2014, the Approved Project was further reduced in size and reconfigured to create the Revised Project evaluated in Section C of this Supplemental EIR. Section C compares the Revised Project with Alternative A Revised (the Approved Project), from the 2010 EIR.

## E.2 Comparison of the Revised Project to Project Alternatives

The 2010 Final EIR analyzed five alternatives to the 420 MW project. A brief summary of each alternative and how the Revised Project compares to each alternative is analyzed below. To the extent new information about one or more alternatives has surfaced since certification of the 2010 Final EIR, that information is presented in the specific discussion of that alternative.

### E.2.1 No Project Alternative

Under the No Project Alternative, construction and operation of Panoche Valley Solar Project would not occur. The baseline environmental conditions for the No Project Alternative are the same as for the Proposed Project. The baseline conditions would continue to occur into the future, undisturbed, in the absence of project-related construction activities, unless other development occurred on the site.

The objectives of the Proposed Project would remain unfulfilled under the No Project Alternative. This means that the contribution of the Proposed Project to meeting California's renewable generation goals would not occur. There are three possibilities for the No Project Alternative to the Proposed Project:

1. **The current uses of the project site would be retained**. The site would remain undeveloped and would continue to be grazed.
2. **Development of other solar projects could occur in the Panoche Valley**. Given the transmission capacity available to serve generation in the Panoche Valley, it is possible that other solar projects would be proposed in the Panoche Valley. If this occurs, the impacts would likely be similar, but smaller, to those of the Proposed Project as no solar PV projects of this scale have been built to date in the United States.
3. **Development of solar projects could occur in other parts of the County or northern California Counties**. If the County determines that development of the Proposed Project is not appropriate in the Panoche Valley and because the State has required utilities to deliver at least 33 percent of their electricity from renewable sources, it is foreseeable that a similarly sized solar facility would be proposed and possibly constructed in another part of the County or constructed in other northern California counties of the State, and/or that distributed solar PV development would occur throughout the State.

## E.2.2 Alternative A Revised

Alternative A Revised is described and analyzed in Section E.3.1 of the 2010 Final EIR. Alternative A Revised is illustrated in Figure E-1 (at the end of this section) and was ultimately the alternative adopted by the Board of Supervisors when it certified the 2010 Final EIR and approved the project and is referenced in this SEIR as the Approved Project. A key element of this alternative was the provision of a biological conservation easement on the 1,683 acres of the project site that would be avoided by the rearrangement of panels. Another key element of this alternative was the reduction of panel height to 12.5 feet (compared with 25 feet for the proposed project). This alternative would be located on approximately 3,202 acres and would consist of 53 1-MW power blocks and 173 2-MW power blocks, which would generate 399 MW of power. This alternative would be constructed in phases over a five-year period just like the larger 420 MW project that was analyzed as the "project" in the Final 2010 EIR. This alternative also would have warranted upgrades to PG&E's transmission lines; however, the extent of those upgrades was unknown at the time of certification of the 2010 Final EIR. .

Alternative A Revised eliminated four of the 420 MW project's significant and unmitigable impacts on biological resources, including impacts resulting from the loss of giant kangaroo rat, blunt-nosed leopard lizard, and San Joaquin kit fox habitat. However, Alternative A Revised would continue to have significant and unavoidable aesthetic and noise impacts even though those impacts would be less severe than those of the 420 MW project, due to the smaller project footprint. In addition, the reduced footprint (about 34 percent smaller than the Proposed Project) resulted in a reduction in noise, agriculture, cultural resources, biological resources, water resources impacts. The Final EIR found that this alternative would environmentally superior to the 420 MW Project.

As this SEIR explains in Section B, the Revised Project further reduces the building footprint of Alternative A Revised and therefore compared to Alternative A Revised, the Revised Project would result less severe permanent impacts on most environmental resource areas. However, like Alternative A Revised, the Revised Project would continue to have significant and unavoidable noise and aesthetic impacts.

## E.2.3 Alternative B Revised

Alternative B Revised is described and analyzed in Section E.3.2 of the 2010 Final EIR. Alternative B Revised is illustrated in Figure E-2 and would be located on an even small footprint than the Revised Project (approximately 1,394 acres). This alternative would generate 183 MW of power. This alternative was designed to further reduce impacts to high-quality giant kangaroo rat habitat and provide a more extensive north-south San Joaquin kit fox movement corridor along the east side of the valley. This alternative also mitigated habitat impacts with a biological conservation easement on 3,491 acres of the project site that would be avoided by redesigning the configuration of panels. Another key element of this alternative is the reduction of panel height to 12.5 feet (compared with 25 feet for the Proposed Project). The 2010 Final EIR presented revisions to this alternative from the Alternative B that was presented in the 2010 Draft EIR to further minimize impacts. This alternative would be constructed in three phases, with the first 20 MW phase being constructed over one year, followed by one 82 MW phase and one 81 MW phase in the two subsequent years. Approximately 1,048 acres would be permanently disturbed by on-site facilities, and an additional 40 acres would be temporarily disturbed during construction.

Alternative B Revised eliminated and further reduced the four significant and unmitigable impacts on biological resources impacts of the 420 MW project and Alternative A Revised and reduced the significant and unavoidable aesthetic impact due to the visibility of construction equipment to a less than significant level due to the three year, as opposed, to five year construction period. Alternative B Revised also reduced other the impacts of the 420 MW Project and Alternative A Revised due to its even greater reduction in the solar project footprint. Many of the construction related impacts such as air quality, traffic, and noise, for example, would also be substantially lessened when compared to the Approved Project. However, Alternative B Revised would continue to have significant unmitigable permanent visual quality impacts and temporary construction noise impacts.

None of the incremental changes associated with the Revised Project, including the accelerated construction schedule, smaller building footprint, or the PG&E Upgrades would generally change the 2010 Final EIR's analysis of Alternative B Revised. Notwithstanding the further reduction in the project footprint associated with the Revised Project, Alternative B Revised still has a smaller footprint than the Revised Project and would result in incrementally less construction and operational impacts. Given the reduced footprint of Alternative B Revised (about 60% of the size of the Revised Project), the Final EIR's conclusion that this alternative would be environmentally superior to the 420 MW Project and Alternative A Revised (the Approved Project) would also apply to the Revised Project..

## E.2.4 Alternative C Revised

Alternative C Revised is described and analyzed in Section E.3.3 of the 2010 Final EIR. Alternative C Revised is illustrated in Figure E-3. It would be located on approximately 862 acres and would generate 110 MW of power. This alternative was designed to fully mitigate direct impacts to biological resources. It would provide both north-south and east-west wildlife movement corridors. This alternative would also mitigate habitat impacts with a biological conservation easement on 4,023 acres of the project site that would be avoided by the rearrangement of panels. Another key element of this alternative is the reduction of panel height to 12.5 feet (compared with 25 feet for the Proposed Project). The 2010 Final EIR presented revisions to this alternative from the Alternative C that was presented in the 2010 Draft EIR to further minimize impacts. This alternative would be constructed in two phases, with the first 20 MW phase being constructed over one year, and the second 90 MW phase being constructed over an

additional year. Approximately 646 acres would be permanently disturbed by on-site facilities, and an additional 20 acres would be temporarily disturbed during construction.

Like Alternative B Revised, Alternative C Revised eliminated all four significant and unmitigable impacts on biological resources and one of the two visual resources impacts relating to visibility of construction activity that would have resulted from construction and operation of the 420 MW Project and Alternative A Revised. This alternative also substantially lessened impacts to aesthetics, agriculture, air quality, land use and recreation, noise, population and housing, public services and utilities, transportation and circulation, and water resources. Due to its substantially smaller footprint, the Final EIR found that Alternative C Revised was environmentally superior to the Proposed Project, Alternatives A Revised, and Alternative B Revised.

None of the incremental changes associated with the Revised Project, including the accelerated construction schedule, smaller building footprint, or the PG&E Upgrades would generally change the 2010 Final EIR's analysis of Alternative B Revised. Notwithstanding the further reduction in the building footprint associated with the Revised Project, Alternative C Revised still has a substantially smaller footprint than the Revised Project and would result in incrementally less construction and operational impacts. Given the reduced footprint of Alternative B Revised (about 37 percent of the size of the Revised Project), the 2010 Final EIR's conclusion that this alternative would be environmentally superior to the 420 MW Project and Alternative A Revised (Approved Project) would also apply to the Revised Project.

## E.2.5 Westlands CREZ Alternative

The Westlands CREZ[1] Alternative is an off-site alternative that was described and analyzed in Section E.3.4 of the 2010 Final EIR. The description of this alternative has been updated to reflect changes at Westlands since publication of the Final EIR in 2010. However, the comparison of impacts between this alternative and the 420 MW project has not changed and would equally apply to the Revised Project, except that the Revised Project would be constructed and operated on a much smaller footprint than the originally proposed 420 MW project and a smaller footprint than the Approved Project. The location of the Westlands CREZ is shown in Figure E-4. The Westlands CREZ is located outside of San Benito County within Fresno and Kings County, east of Huron, north of Kettleman City, and southwest of Lemoore (Sheehan, 2010).

The Westlands Water District has a lease contract with Westside Holdings, a private investment group, to use approximately 30,000 acres of fallow agriculture land for a 5,000 MW solar power plant (Sheehan, 2010). The farmland was retired over the past decade because of a combination of water shortages and salt buildup that makes the soil unsuitable for crop production (Sheehan, 2010). Nonetheless, approximately 20,000 acres of this area continue to be encumbered by Williamson Act contracts, which would need to be cancelled before any project could be constructed. According to the developer, Westside Holdings LLC, the Westlands Solar Park in western Kings County has a potential solar resource of up to 2,400 MW. It is comprised of agricultural lands that are no longer in productive use (Westside, 2014).

[1] A CREZ is a Competitive Renewable Energy Zone, defined in the State's Renewable Energy Transmission Initiative (RETI).

In July 2014, Los Angeles-based real estate investment firm CIM Group announced it has partnered with Westside Holdings, LLC, to invest in development of solar resources at Westlands (Lindt, 2014). No development specifics have been made available (Lindt, 2014).

The Westlands Solar Park is being made available to solar developers for phased generation development. Since this alternative was initially evaluated in 2010, two solar projects (18 and 15 MW) have been constructed at Westlands (see Section D, Cumulative Scenario, Table D-2). In addition, the City of Anaheim has executed a Power Purchase Agreement with Westlands for a 2 MW project to be located just south of Naval Air Station Lemoore, with phased construction of a 2-MW project followed by a 20-MW solar farm (Anaheim, 2013; Lindt, 2014).

Also, on March 15, 2013, Westlands issued a Notice of Preparation for a Master EIR for development within the solar park (Westlands, 2013). In the NOP, the proposed components of the solar area are defined as follows:

- Westlands Solar Park Master Plan and Planned Transmission Facilities, comprises following 4 elements:
  - 1) WSP Generating Facilities - 24,000-acre site planned for 2,400 MW solar PV generating facilities, phased in 200 MW projects.
  - 2) Henrietta to Gates Transmission Upgrades - Construct a second transmission line along existing 230-kV Henrietta-Gates line.
  - 3) Path 15 Transmission Corridor - Upgrade to connect Gates Substation to Los Banos Substation; transmission route diverges from existing transmission corridor near SR 198, runs through interior of Westlands Water District, and rejoins corridor at Panoche Substation.
  - 4) Gates to Gregg Transmission Corridor - New transmission route running north from Gates substation and over San Joaquin River where it swings northeast and east through Madera County, then crosses SR-99 on approach to Gregg Substation.

A Draft Master EIR has not yet been published.

One component of the Westlands master plan is the definition of a transmission corridor for the Gates to Gregg transmission line. Pacific Gas and Electric Company (PG&E), MidAmerican Transmission, LLC (MidAmerican Transmission), and Citizens Energy Corporation (Citizens Energy) were chosen by the California Independent System Operator Corporation (ISO) to develop, own and operate this new transmission line in the Central Valley. According to PG&E, the 230-kilovolt (kV) line will span about 70 miles across Fresno, Madera and Kings Counties, running from the Gates to Gregg substations, which are owned and operated by PG&E. It was approved by the ISO to address the growing power demand in the greater Fresno area and also to bolster efforts to integrate renewable energy onto the electric grid. PG&E stated that the transmission line would be operational by 2022, but could come on line earlier (PG&E, 2013). On September 18, 2014, the Federal Energy Regulatory Commission granted PG&E transmission rate incentives for its investment in this transmission line (Lum, 2014).

As with any solar generation project, definition of specific transmission line availability would be required, and if transmission line upgrades were needed, they would have to be evaluated under CEQA and/or NEPA.

The 2010 Final EIR found that the majority of the impacts created by a 420 MW solar PV project would be relocated to the Westlands CREZ Alternative site, except for impacts to biological resources, agricultural resources, and aesthetics, which would be substantially lessened at Westlands. The 2010

Final EIR concluded that relocating the project to the Westlands CREZ would potentially create greater impacts to water resources. The incremental changes associated with the Revised Project, including the accelerated construction schedule, smaller project footprint, and the PG&E Upgrades would not generally change the 2010 Final EIR's analysis of the Westlands CREZ Alternatives. However, in conjunction with the Board's certification of the 2010 Final EIR, the Board also conditionally approved cancellation of the Williamson Act contracts affected by the Approved Project. The vast majority of the Westlands CREZ is still under Williamson Act contracts; therefore, the Revised Project would have less agricultural impacts due to approved cancellations of Williamson Act contracts.

## E.3 Alternatives Considered but Eliminated from Further Consideration

Section E.4 of the 2010 Final EIR also considered, but rejected as infeasible, the following five alternatives that did not meet the CEQA screening criteria defined in Section E. of the 2010 Final EIR.

- Brownfield Alternative
- Mojave Desert BLM Land
- Distributed Solar Photovoltaics
- Wind Generation
- Conservation and Energy Demand Reduction

All of the alternatives continue to be infeasible. The assessment of the Distributed Solar Photovoltaics alternative has been updated in this Supplemental EIR. The discussion of the other four alternatives is summarized below.

### E.3.1 Brownfield Alternative

The 2010 Final EIR considered the brownfields site alternative in order to lessen impacts on special-status wildlife species present at the Revised Project site. The 2010 Final EIR concluded that development of a brownfield site would reduce environmental impacts, especially those relating to biological resources, agricultural resources, and aesthetics. However, other environmental impacts related to use of contaminated sites would likely increase worker safety hazards. While the alternative meets two project objectives, locating the facility in a high solar resource area and minimizing environmental impacts, it only partially meets the objective to construct a large solar energy facility, and the alternative would not meet the objectives relating to funding and operational timing. Access to available transmission lines is uncertain. Solar development of a brownfield site presents regulatory challenges and liability hurdles and the feasibility of the project is uncertain. Aside from these regulatory hurdles and challenges of developing a hazardous waste site, there was no evidence in 2010 and there continues to be no evidence that the applicant owns, controls, or could feasibly acquire any brownfield sites to construct the Revised Project (see CEQA Guidelines, 14 Cal. Code of Regs 15126.6 (f)(1)). Therefore, this alternative was rejected as infeasible and not studied further in the 2010 EIR and that conclusion has not changed with the Revised Project.

### E.3.2 Mojave Desert BLM Land

The BLM has received a large number of utility-scale solar energy project proposals for BLM-administered lands in California. The BLM processes solar energy right-of-way applications under its Solar Energy Development Policy (Instructional Memorandum No. 2007-097) and addresses environmental

concerns for the utility-scale energy projects on a case-by-case basis in conformance with its existing policies, manuals, and statutory and regulatory authorities. An alternative site in the Mojave Desert would be subject to environmental review under the National Environmental Policy Act. Although many solar projects have been proposed within the Mojave Desert on both private lands and federal land under the jurisdiction of the BLM, these sites do not present significant environmental advantages to the Revised Project. The impacts would affect different sensitive biological species and vistas, but would also create significant impacts.

### E.3.3 Distributed Solar Photovoltaic Alternative

The description of this alternative has been updated to reflect changes to California's renewable energy industry since publication of the Final EIR in 2010.

There is no single accepted definition of "distributed" solar technology. The 2011 Integrated Energy Policy Report (IEPR) defines distributed generation resources as, "(1) fuels and technologies accepted as renewable for purposes of the Renewable Portfolio Standard (RPS); (2) sized up to 20 MW; and (3) located within the low-voltage distribution grid or supplying power directly to a consumer" (CEC, 2012a). Distributed photovoltaic (PV) technology is considered below.

A distributed solar alternative would consist of PV panels that would be installed on residential, commercial, or industrial building rooftops, or in other disturbed areas such as parking lots or disturbed areas adjacent to existing structures, such as electrical substations. Medium sized distributed solar photovoltaic plants have been built on agricultural land in the Central Valley.

Governor Brown's Clean Energy Jobs Plan also identifies the goal to install 20,000 MW of new renewable capacity by 2020, including 12,000 MW of local electricity generation from small generation sources such as distributed PV generation (CEC, 2011). In 2011, Governor Brown convened a conference with representatives of agencies, businesses, and organizations that would be involved in or affected by the 12,000 MW goal during which a series of expert-led panels identified the most critical barriers to achieving this goal and solutions to these barriers. Barriers included (Russell and Weissman, 2012):

- Grid planning is the process where utilities, federal and state grid managers, and other stakeholders consider a range of long-term energy planning issues. Participants stated that the grid planning framework is disjointed and fails to adequately consider or plan for the potential grid impacts or benefits of local renewables.
- Integration and reliability concerns were highlighted due to local renewable generation being sent to the grid through power lines and equipment that were primarily designed to transport energy in the opposite direction. Unless managed appropriately, the integration of local renewable energy can impact the safe and reliable operation of distribution grids. Integration is hindered by a lack of information about the capacities and constraints of existing distribution grids.
- Financing and procurement poses challenges for all sizes of local renewables. Some financing strategies such as the new energy metering program and California Solar initiative promote widespread development of customer-side systems but many residents and businesses are still unable to buy or lease equipment or purchase renewable energy. Federal tax incentives and procurement programs stimulated rapid development but may expire or neglect key technologies, project sizes, or locations.
- Interconnection of a proposed energy generator to the power grid functions as a source of significant uncertainty and inefficiency. If a generator meets certain criteria it can take advantage of a "fast track" process but if not, the utility conducts a series of studies to determine the impacts to the grid.

For local renewable generation, the interconnection process is critical because of the large number of interconnections that would be required. Concerns about the lack of alignment between the interconnection and procurement process were also highlighted.

- Permitting new renewable energy projects can also be challenging. Some cities and counties are pursuing renewable energy systems while others are not prepared to review or approve local renewable generation. Many cities and counties do not consider renewable energy in the planning codes and the requirements, permit fees, and local government expertise vary widely between jurisdictions, causing inefficiencies and increased costs. Local governments cited a lack of funds and time to update codes to address local renewable energy and the difficulty in keeping pace with the rapid development of local renewable technologies. Emergency responder representatives also discussed the challenge of understanding local renewables and new and emerging technologies.

The state is actively working to overcome barriers to the development of distributed renewable energy generation. In a 2011 report on renewable Energy Development in California, the California Energy Commission discussed barriers to the development of distributed generation, as well as potential solutions to overcome those barriers (CEC, 2011). The Energy Commission followed up in its 2012 Renewable Energy Action Plan, included as part of the 2012 IEPR Update, with a number of specific recommendations for actions that are necessary to develop and integrate distributed generation in California (CEC, 2012b). The Energy Commission is working with a variety of stakeholders, including the California Public Utilities Commission, the California Independent System Operator, community and environmental justice groups, and federal agency partners, to implement the recommendations in the Renewable Energy Action Plan and accelerate the development of distributed renewable energy generation in California.

A distributed solar PV is assumed to be located on already existing structures or disturbed areas so little to no new ground disturbance would be required and there would be few associated biological impacts. However, some of the larger distributed solar projects (up to 20 MW) could have similar impacts to agriculture, dust, and other resource associated with grading. Until specific sites are identified, it is difficult to determine whether and to what extent the environmental impacts of the Approved Project or Revised Project would or would not occur with the Distributed Solar Photovoltaic Alternative.

Notwithstanding, the state's efforts to promote distributed renewable energy generation, current research indicates that development of both distributed generation and utility-scale renewable energy will be needed to meet California's RPS and climate change goals, along with other energy resources and energy efficiency technologies (NREL, 2010; Linvill et al, 2011; California Office of the Governor, 2012; Zichella and Hladik, 2013). For a variety of reasons (e.g., upper limits on integrating distributed generation into the electric grid, cost, lack of electricity storage in most systems, and continued dependency of buildings on grid-supplied power), distributed energy generation alone cannot meet the goals for renewable energy development. Ultimately, both utility-scale and distributed generation renewable energy development will need to be deployed at increased levels, and the highest penetration of solar power overall will require a combination of both types (NREL, 2010). As a result, this technology is eliminated from detailed analysis as an alternative to the Proposed Project.

In addition, in order to be a viable alternative to the Revised Project, the applicant would need to own or control a sufficient amount of land or rooftop space to accommodate 247 MW of capacity. The applicant, however, does not currently own or control any other such sites or land in San Benito County or any other locations in California (see CEQA Guidelines, 14 Cal. Code of Regs 15126.6 (f)(1)). Moreover and consistent with the 2010 Final EIR's conclusion relating to this alternative, the applicant could not feasibly acquire a sufficient amount of rooftops or other land to achieve 247 MW of distributed solar

energy. Therefore, this alternative was deemed infeasible in the 2010 Final EIR and eliminated for further review and analysis.

## E.3.4 Wind Generation

Wind carries kinetic energy that can be utilized to spin the blades of a wind turbine rotor and an electrical generator, which then feed alternating current (AC) into the utility grid. Modern wind turbines represent viable renewable alternatives to large solar energy projects within the region as exemplified by the major wind project areas in the Altamont Pass and Solano County. While a large wind project would not necessarily be viable at the location of the Revised Project, it would be viable at other locations throughout California. The technology is now well developed and can be used to generate significant amounts of power. Compared with 2,490 MW in 2010, there are now approximately 5,829 MW of wind being generated in California (AWEA, 2014). While wind electricity generation is a viable and important renewable technology, it is not technologically feasible at the Revised Project site due to the lack of wind resources. Additionally, a wind facility would not reduce the large scale ground disturbance and visual impacts so would not substantially reduce impacts associated with the Revised Project. Therefore, wind generation was eliminated from further consideration in the 2010 Final EIR and continues to be infeasible.

## E.3.5 Conservation and Energy Demand Reduction

Conservation and demand reduction consist of a variety of approaches for the reduction of electricity use, including energy efficiency and conservation, building and appliance standards, and load management and fuel substitution. In 2005 the Energy Commission and CPUC's Energy Action Plan II declared cost effective energy efficiency as the resource of first choice for meeting California's energy needs. The Energy Commission noted that energy efficiency helped flatten the state's per capita electricity use and saved consumers more than $56 billion since 1978 (CPUC, 2008). The investor-owned utilities' 2006-2008 efficiency portfolio marks the single-largest energy efficiency campaign in U.S. history, with a $2 billion investment by California's energy ratepayers (CPUC, 2008). However, with population growth, increasing demand for energy, and the need to reduce greenhouse gases, there is a greater need for energy efficiency. Additionally, San Benito County is in the process of updating its General Plan with health and sustainability principles that highlight the efficient use of resources including energy consumption (County, 2013).

The CPUC, with support from the Governor's Office, the Energy Commission, and the California Air Resources Board, among others, adopted the California Long-Term Energy Efficiency Strategy Plan for 2009 to 2020 in September 2008 and updated in 2011 (CPUC, 2008; CPUC, 2011). The plan is a framework for all sectors in California including industry, agriculture, large and small businesses, and households. Major goals of the plan include:

- All new residential construction will be zero net energy by 2020;
- All new commercial construction will be zero net energy by 2030;
- Heating, ventilation, and air conditioning will be transformed to ensure that its energy performance is optimal for California's climate; and
- All eligible low-income customers will be given the opportunity to participate in the Low Income Energy Efficiency program by 2020.

This alternative is not technically feasible as a replacement for the Proposed Project, because California utilities are required to achieve aggressive energy efficiency goals laid out by the CPUC in 2004

(D.04-09-060), with the aim of exceeding the maximum achievable potential energy savings defined at that time. Additional energy efficiency beyond that occurring in the baseline condition may be technically possible, but it is speculative to assume such a level of energy efficiency is achievable. With population growth and increasing demand for energy, conservation and demand-management alone is not sufficient to address all of California's energy needs. Additionally, as stated in the California Energy Commission *2009 Integrated Energy Policy Report*, California's renewable energy goals are based on a percentage of retail sales of electricity, and reducing overall electricity demands means fewer retail sales and therefore less renewable energy that must be generated. Furthermore, it states that conservation and demand-side management means fewer renewable plants will need to be built. However, conservation and demand-side management would not itself provide the renewable energy required to meet the California renewable energy goals. Therefore, it would not meet project objectives pertaining to the renewable energy goals and renewable technologies, like solar PV generation, would be required.

## E.4 Comparison of Alternatives

Table E-1 presents the summary comparison of the Revised Project and these alternatives. The impacts of the Revised Project, as defined in Section C of this SEIR, remain consistent with the conclusions presented in Table E-1 for Alternative A Revised.

**Table E-1. Comparison of Alternatives to the Revised Project**

| | Impact Severity: Revised Project Compared to 2010 Alternatives | | | | |
|---|---|---|---|---|---|
| Environmental Resource | Revised Project | Alternative A Revised (Approved Project) | Alternative B Revised | Alternative C Revised | Westlands CREZ Alternative |
| Aesthetics: Long-term visibility of construction and night-lighting | Significant, unavoidable | Significant, unavoidable and slightly more severe | Less than significant with mitigation | Less than significant with mitigation | Likely less than significant with mitigation |
| Aesthetics: Introduction of structure contrast, developed character, view blockage, and glare | Significant, unavoidable | Significant, unavoidable and slightly more severe | Less severe, but significant, unavoidable | Less severe, but significant, unavoidable | Less severe, but likely significant, unavoidable |
| Biological resources: Loss of habitat and take of blunt-nosed leopard lizard | Less than Significant, with mitigation | Less than significant with mitigation | Less than significant with mitigation | Less than significant with mitigation | Less than significant with mitigation |
| Biological resources: Loss of habitat and take of giant kangaroo rat | Less than Significant, with mitigation | Less than significant with mitigation | Less than significant with mitigation | Less than significant with mitigation | Less than significant with mitigation |
| Biological resources: Loss of habitat and take of San Joaquin kit fox | Less than Significant, with mitigation | Less than significant with mitigation | Less than significant with mitigation | Less than significant with mitigation | Less than significant with mitigation |
| Biological resources: Cumulative effects | Less than Significant, with mitigation | Less than significant with mitigation | Less than significant with mitigation | Less than significant with mitigation | Less than significant with mitigation |
| Noise: Construction noise would substantially disturb sensitive receptors | Significant, unavoidable | Significant, unavoidable | Less severe, but significant, unavoidable | Less severe, but significant, unavoidable | Significant, unavoidable or less than significant, depending on location |
| Noise: Construction noise would violate a local ordinance | Significant, unavoidable | Significant, unavoidable | Less severe, but significant, unavoidable | Less severe, but significant, unavoidable | |

### E.4.1 Environmentally Superior Alternative

As presented in the 2010 FEIR, Alternative C Revised was identified as the environmentally superior alternative due to its less severe significant environmental impacts relating to Aesthetics, Biological Resources, and Noise. This conclusion would remain the same with respect to the Revised Project.

## E.5 References

Anaheim, 2013. Renewable Power Purchase and Sale Agreement between Westside Assets, LLC and City of Anaheim. http://www.anaheim.net/docs_agend/questys_pub/MG42182/AS42221/AS42224/AI44747/DO44748/DO_44748.pdf. Accessed December 2014.

AWEA (American Wind Energy Association). 2014. First Quarter 2014: Wind Power Capacity Installations by State. http://awea.files.cms-plus.com/1Q2014%20U.S.%20Wind%20Power%20Capacity%20Installations%20by%20State.png. Accessed December 2014.

California Office of the Governor. 2012. 04 Conservation Planning Process – Renewable Energy context material. http://www.drecp.org/meetings/2012-06-26_meeting/background/. Accessed December 2014.

CEC (California Energy Commission). 2007. California Rooftop Photovoltaic (PV) Resource Assessment and Growth Potential by County. CEC-500-2007-048

_____. 2011. Renewable Power in California: Status and Issues. Publication Number: CEC-150-2011-002-LCF-REV1. December 2011.

_____. 2012a. 2011 Integrated Energy Policy Report, Lead Commissioner Final Report. Publication Number: CEC-150-2011-001-LCF. February 2012.

_____. 2012b. Energy Commission 2012 IEPR Update Chapter 5 (CEC-100-2012-001-CMF) http://www.energy.ca.gov/2012publications/CEC-100-2012-001/CEC-100-2012-001-CMF.pdf.

_____. 2014. Tracking Progress: Renewable Energy – Overview Updated August 19, 2014. http://www.energy.ca.gov/renewables/tracking_progress/documents/renewable.pdf. Accessed December 4, 2014.

County. 2013. General Plan Section 9: Health and Safety Element. http://sanbenitogpu.com/pdf/PD-PRD/SBC_2035GP_PRD_Sec9_Safety_2013-02-21.pdf. Accessed December 2014.

CPUC (California Public Utilities Commission). 2008. California Long Term Energy Efficiency Strategy Plan. http://www.californiaenergyefficiency.com/docs/EEStrategicPlan.pdf. Accessed April 2010.

_____. 2011. California Energy Efficiency Strategic Plan: January 2011 Update. http://www.cpuc.ca.gov/NR/rdonlyres/A54B59C2-D571-440D-9477-3363726F573A/0/CAEnergyEfficiencyStrategicPlan_Jan2011.pdf. Accessed December 2014.

Lindt, John. 2014 Westlands Solar Park plan lands major investor. http://www.thebusinessjournal.com/news/energy-and-environment/12794-westlands-solar-park-plan-lands-major-investor. Accessed December 4.

Linvill, Carl, John Candelaria, and Ashley Spalding. 2011. Western Grid 2050: Contrasting Futures, Contrasting Fortunes.

Lum, Rosy. PG&E gets FERC-approved incentives for 230-kV Gates-Gregg transmission line. http://www.transmissionhub.com/articles/2014/09/pg-e-gets-ferc-approved-incentives-for-230-kv-gates-gregg-transmission-line.html. Accessed December 4.

NREL. 2010. Solar Power and the Electric Grid, Energy Analysis (Fact Sheet), Golden, Colo., March. http://www.nrel.gov/docs/ fy10osti/45653.pdf.

PG&E. 2013. PG&E, MidAmerican Transmission, Citizens Energy Corporation to Develop 70-Mile Electric Transmission Line. http://www.pge.com/about/newsroom/newsreleases/20131115/pge_midamerican_transmission_citizens_energy_corporation_to_develop_70-mile_electric_transmission_line.shtml. Accessed December 2014.

RETI (Renewable Energy Transmission Initiative). 2010. RETI Phase 2 Update Workgroup. http://www.energy.ca.gov/reti/steering/workgroups/phase2A_update/2010-01-07_meeting/2010-01-07_RETI_Phase_2_Update_WG_Presentation.pdf. Accessed March 22, 2010.

Russell, Jeffrey and Steven Weissman. 2012. California's Transition to Local Renewable Energy: 12,000 Megawatts by 2020: A report on the Governor's Conference on Local Renewable Energy. June 7. http://www.law.berkeley.edu/files/ccelp/CA_Transition_to_Local_Renewable_Energy.pdf. Accessed December 4, 2014.

Sheehan, Tim. 2010. "Valley solar plant would be among world's largest" The Fresno Bee. March 15, 2010. http://www.fresnobee.com/2010/03/15/1859943/valley-solar-plant-would-be-among.html#. Accessed March 22, 2010.

Westlands (Westlands Solar Park). 2010. Westlands Solar Park: Project Overview and General Information. http://www.westlandssolarpark.com/Westlands_Solar_Park/Project_Overview_and_General_Information.html. Accessed September.

_____. 2013. Notice of Preparation for Master EIR. Westlands Solar Park Master Plan and Planned Transmission Facilities. Accessed December 2014.

Westside (Westside Holdings LLC). 2014. Westlands Solar Park: Project Overview and General Information. http://www.westlandssolarpark.com/Westlands_Solar_Park/Project_Overview_and_General_Information.html

Zichella, Carl and Johnathan Hladik. 2013. Renewable Energy and Transmission Siting: Pre-publication Draft. http://www.energy.ca.gov/2013_energypolicy/documents/2013-05-07_siting_workshop/comments/NRDC_Combined_Comments_TN-70973_TN-70974_TN-70975.pdf. Accessed December 2014.

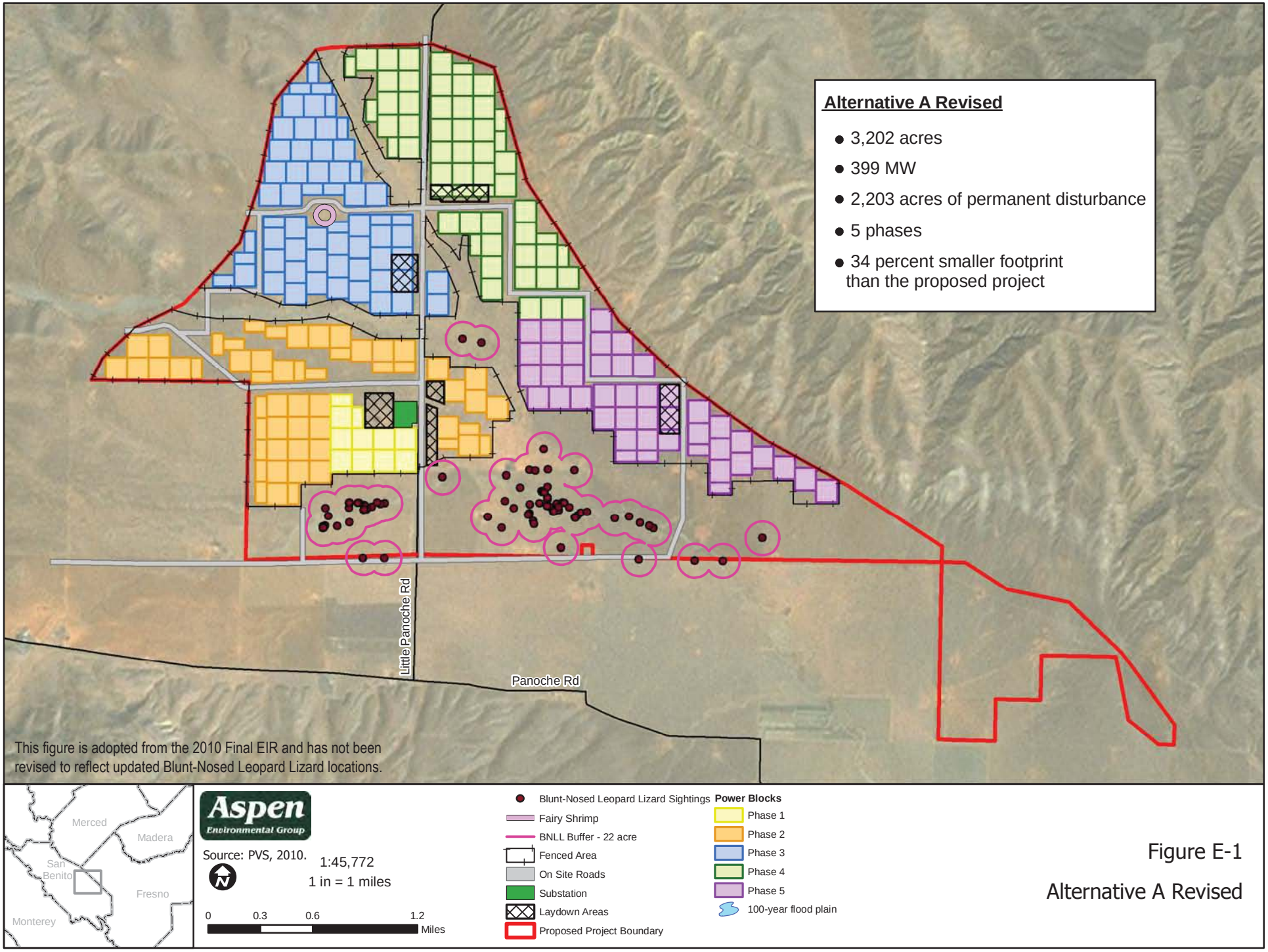



Figure E-1

Alternative A Revised

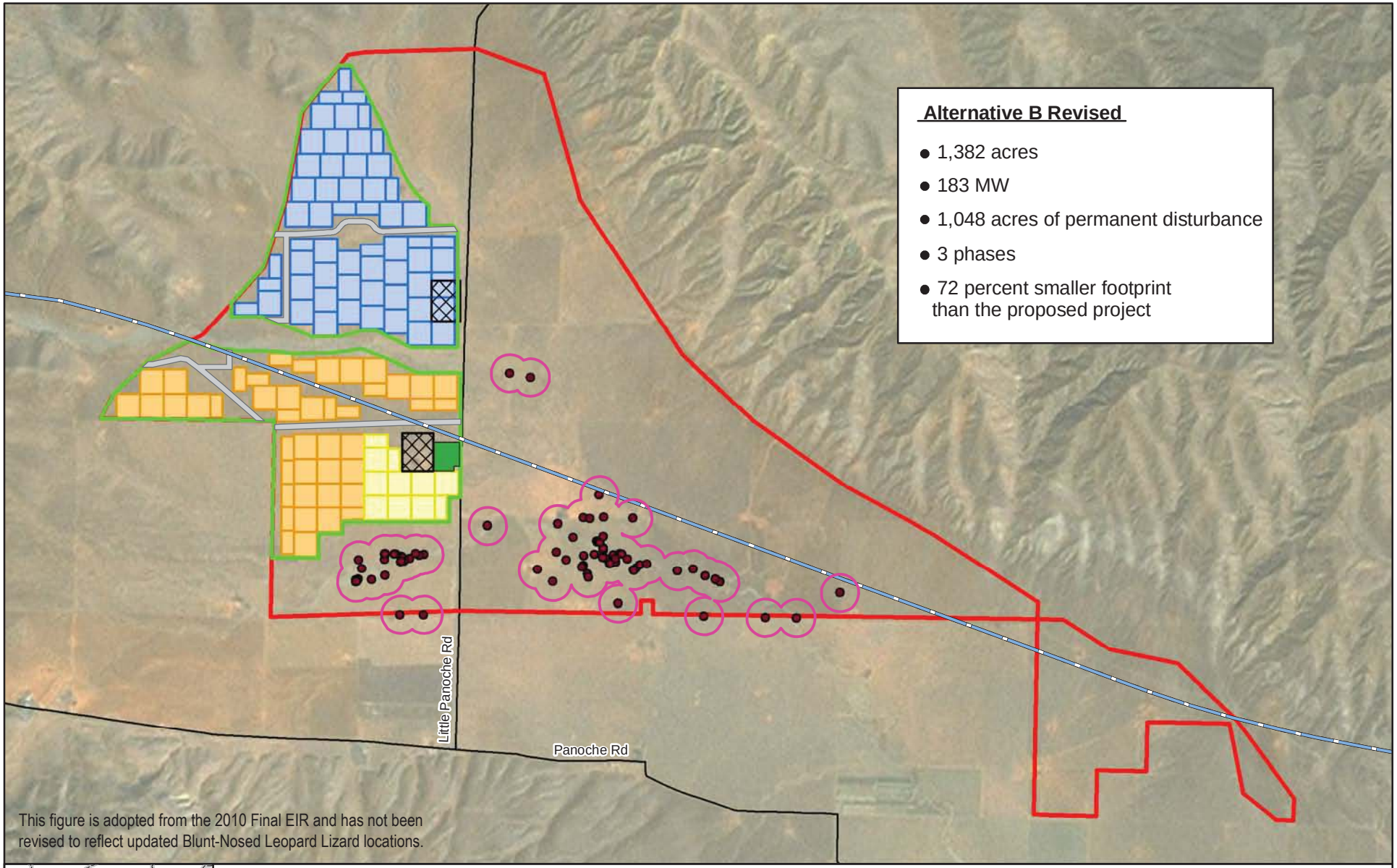



Figure E-2

Alternative B Revised

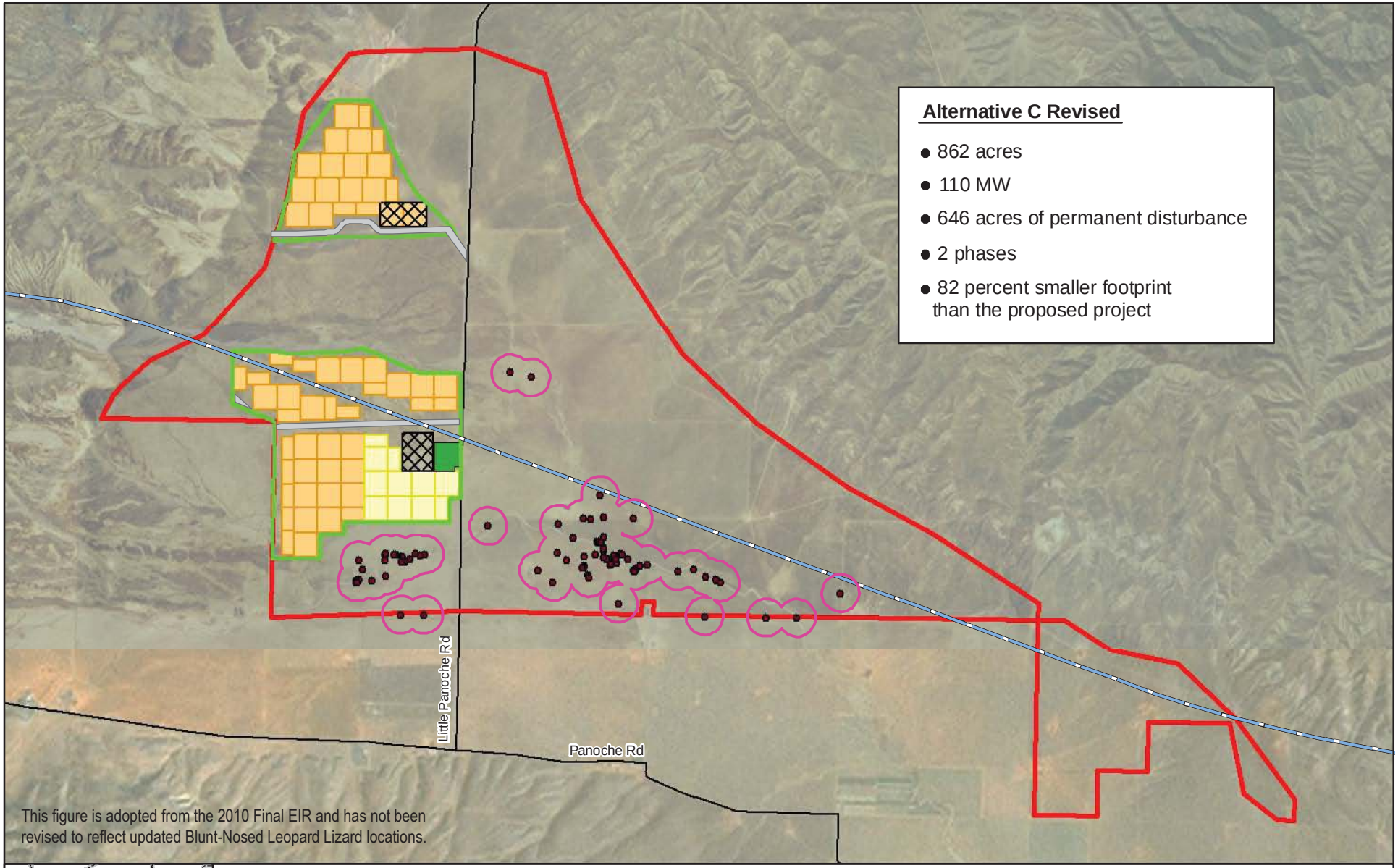
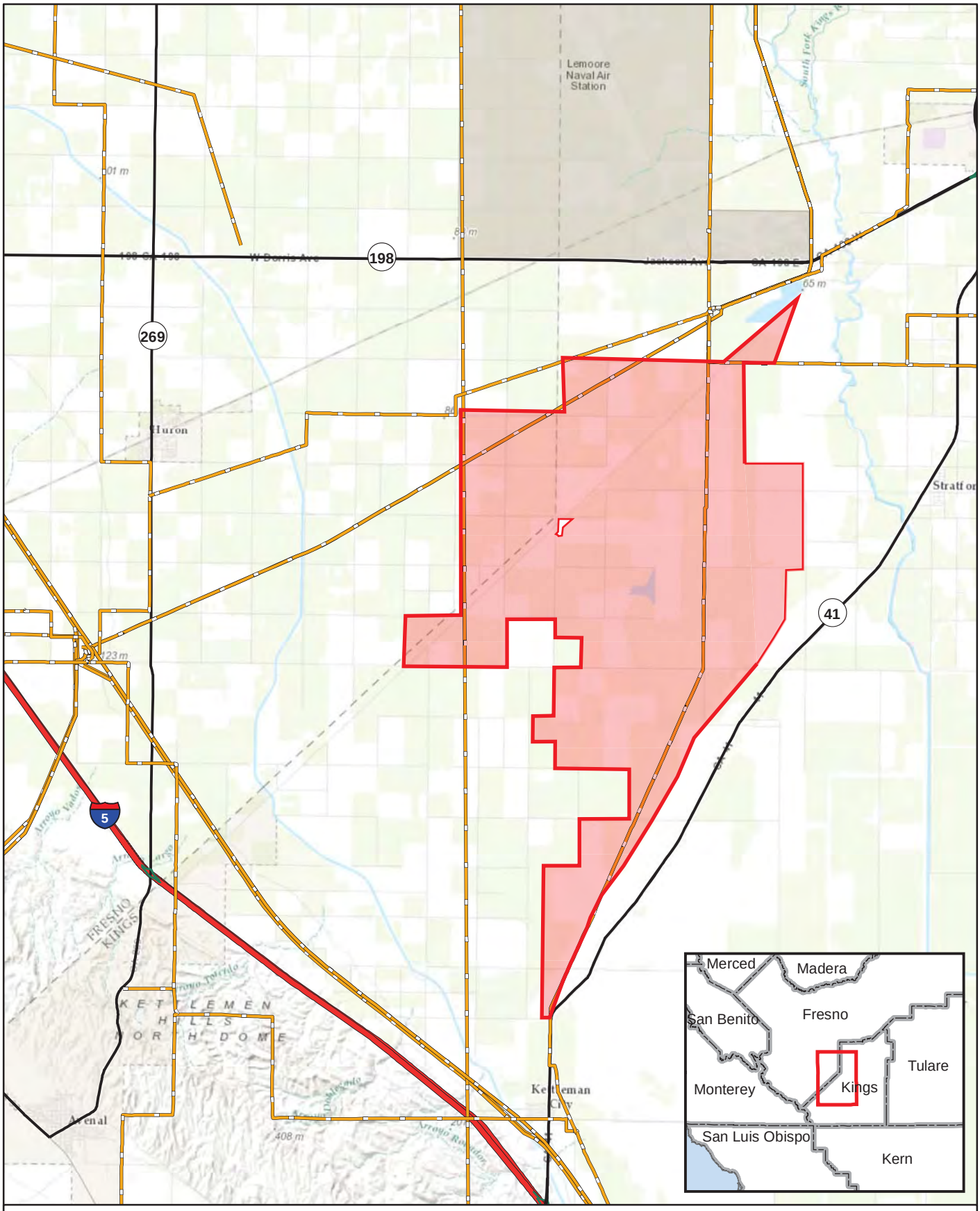



Figure E-3

Alternative C Revised




Aspen Environmental Group

0 1.5 3 4.5 6 Miles

Source: Platts 2013, ESRI, AEG

Transmission Lines

Westlands CREZ Boundary

Figure E-4

Westlands CREZ Boundary

# F. Other CEQA Considerations

This section presents several topics required by CEQA: growth-inducing effects (Section F.1), significant irreversible commitment of resources (Section F.2), significant effects of the Revised Project (Section F.3), and energy conservation (Section F.4).

## F.1 Growth-Inducing Effects

Section 15126.2(d) of the State CEQA Guidelines provides the following guidance on growth-inducing impacts: a project is identified as growth inducing if it "could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment." As discussed below, none of the proposed changes to the Approved Project that comprise the Revised Project would create any new growth-inducing impacts or substantially increase the severity of any previously identified growth-inducing impacts..

### F.1.1 Employment and Population Growth

**Construction Workforce.** The Revised Project would increase the peak workforce from 200 workers per day to 550 workers per day. This work would occur over approximately 18 months. Workers are expected to be hired from San Benito, Santa Clara, and Fresno Counties, with 75 percent of the workforce anticipated from the Hollister area.

- Daytime construction workforce: 100 to 500 individuals
- Nighttime construction workforce: 20 to 50 individuals

Due to the overall increase in construction workers, the demand for temporary accommodations would be greater with the Revised Project during the 18 month construction period, and therefore, have a greater potential to displace other travelers and seasonal residents, which was an impact described in the 2010 Final EIR. While the study area vacancy rate and the availability of temporary accommodation in the area indicate that the area has the capacity to temporarily house this workforce, it would do so to the exclusion of other travelers and seasonal residents. Additionally, many of the accommodations available, such as recreational campsites, are not designed for long-term temporary residents and such use would deteriorate or degrade the facilities. As such, demand for temporary accommodations during construction would result in significant impacts to the existing housing supply. At the same time, due to the shortened construction schedule, the demand on temporary accommodations would end after 18 months as opposed to 5 years with the Approved Project. Thus, the temporary increase in demand is off-set by the shortened construction period. Nonetheless, to address this short term impact on temporary accommodations, the Revised Project would implement the previously approved Applicant Proposed Measure for Population and Housing for the Approved Project, which requires coordination with San Benito County to identify qualified accommodations and provide that information to construction contractors. Implementation of this measure would alleviate the temporary direct and indirect population growth impacts resulting from worker relocation.

Construction workers would be drawn from the surrounding counties, including Fresno, San Benito, and Santa Clara Counties. Data from the State of California Employment Development Department shows that the combined construction labor force for these three counties for 2011 (the most recent year for which complete data is available) is 43,100 workers. A maximum of 550 workers hired from within these three counties would represent approximately 1.3 percent of the total construction labor force. While a single project utilizing 1.3 percent of the total construction labor force of the study area would be con-

sidered a substantial demand, considering the high unemployment rate in the area, this would be a beneficial impact on the study area. As a short-term activity, the construction phase would not trigger additional population growth in the area.

**Operational Workforce.** Operation of the Revised Project would require the same number of full time staff (up to 50) at Project build-out as the Approved Project. Therefore, the potential housing and growth inducement impacts described in the 2010 Final EIR would equally apply to the Revised Project. As described in Section C.12 (Population and Housing), the 2014 housing vacancy rates for Fresno, San Benito, and Santa Clara Counties, respectively, are: 8.3%, 6.0%, and 4.4%. An influx of 145 individuals from 50 operation employees to the three-county study area would not create a demand for housing that exceeds the existing supply and would warrant the construction of new housing, which was the conclusion of the 2010 Final EIR.

### F.1.2 Increased Power Generation

None of the changes associated with the Revised Project would alter the 2010 Final EIR's analysis and conclusions regarding the impact of increased power generation on future growth. The 2010 Final EIR concluded that the project would supply energy to accommodate and support existing demand and projected growth, but it would not foster any new growth, because (1) the additional energy would be used to ease the burdens of meeting existing statewide energy demands within and beyond the area of the project; (2) the energy would be used to support already-projected growth; or (3) the factors affecting growth are so diverse that any potential connection between additional energy production and growth would necessarily be too speculative and tenuous to merit extensive analysis.

### F.1.3 PG&E Upgrades

The capacity of the electrical transmission capacity of the PG&E system would not be increased as a result of implementation of the Revised Project. The proposed PG&E upgrades are limited to primary and secondary telecommunication services and as such would not induce population growth.

## F.2 Significant Irreversible Commitment of Resources

Section 15126.2(c) of the State CEQA Guidelines states that irreversible commitments of resources should be evaluated to assure that such consumption is justified. Uses of nonrenewable resources during construction of the Project may be irreversible because a large commitment of such resources makes removal or nonuse thereafter unlikely and certain types of impacts may commit future generations to similar uses. None of the components of the Revised Project would cause any new irreversible impacts that were not already addressed in the 2010 Final EIR. However, due to the reduced size of Project footprint and increased amount of conserved open space, the irreversible impacts described in the 2010 Final EIR would be reduced. Moreover, it is important to note that, like the Approved Project, the Revised Project would return the project site to vacant rangeland after the useful life of the solar project and preserve the site in a conservation easement in perpetuity. Thus, any resources that may be impacted during project construction and once the project is operational may recover after the project is decommissioned.

## F.3 Significant Effects that Cannot be Avoided

Section 15126.2(b) of the State CEQA Guidelines requires that the EIR describe any significant impacts, including those that can be mitigated but not reduced to less-than-significant levels. Potential environ-

mental effects of the incremental changes to the Approved Project that comprise the Revised Project are analyzed in Section C of this SEIR. The 2010 Final EIR concluded that the Approved Project (Alternative A Revised) would result in significant and unavoidable aesthetics and construction noise Impacts. Due to the accelerated construction schedule, there would be an increase in construction noise levels and the impact of the Revised Project would remain significant and unavoidable. Aesthetic impacts resulting from implementation of the Revised Project would be reduced due to the reduced size of the project, but would remain significant and unavoidable.

## F.4 Energy Conservation

Appendix F of the CEQA Guidelines, Energy Conservation, requires that energy implications are considered in project decisions (Public Resources Code Section 21100(b)(3)). None of the components of the Revised Project require modification of the 2010 Final EIR's analysis of energy conservation. The prior analysis would apply equally to the Revised Project.

## F.5 References

County (San Benito County). 2010. Chapter 3 Land Use, General Plan Background Report (Public Review Draft). http://www.sanbenitogpu.com/docs.html. Accessed April 2010.

# G. Terminology, Glossary, Acronyms, and Abbreviations

## G.1 Terminology

To assist reviewers in understanding this SEIR, the following terms are defined:

- *Originally proposed project* is the 420-megawatt (MW) project described as "Proposed Project" in the 2010 Final EIR.
- *Alternative A Revised* is the reduced footprint 399 MW alternative that was described and analyzed in the 2010 Final EIR.
- *Approved Project* is the 399 MW project described as "Alternative A Revised" in the 2010 Final EIR.
- *Revised Project* is the 247 MW project that is described and analyzed in this Supplemental EIR.
- *PG&E Upgrades* are the telecommunication and interconnection upgrades to the PG&E transmission system that are described and analyzed in this Supplemental EIR.
- *Project* means the whole of an action that has the potential for resulting in a physical change in the environment, directly or ultimately. In the case of this SEIR, the "project" includes the solar project ("Revised Project") and the PG&E Upgrades.
- *Environment* means the physical conditions that exist in the area and that would be affected by a proposed project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historical or aesthetic significance. The area involved is where significant direct or indirect impacts would occur as a result of the project. The environment includes both natural and artificial conditions.
- *Impacts* analyzed under CEQA must be related to a physical change. Impacts are:
  - Direct or primary impacts that would be caused by the proposed project and would occur at the same time and place; or
  - Indirect or secondary impacts that would be caused by the proposed project and would be later in time or farther removed in distance, but would still be reasonably foreseeable. Indirect or secondary impacts may include growth-inducing impacts and other effects related to induced changes in the pattern of land use; population density or growth rate; and related effects on air and water and other natural systems, including ecosystems.
  - Secondary impacts may also be caused by mitigation measures proposed in one resource area that may indirectly affect another. For instance the conservation of mitigation land to offset biological resources impacts may indirectly result in agricultural resources impacts related to the permanent conversion of agricultural lands to a non-agricultural use.
- *Significant impact on the environment* means a substantial, or potentially substantial, adverse change in any of the physical conditions in the area affected by the proposed project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historical or aesthetic significance. An economic or social change by itself is not considered a significant impact on the environment. A social or economic change related to a physical change may be considered in determining whether the physical change is significant.
- *Mitigation* consists of measures that avoid or substantially reduce the proposed project's significant environmental impacts by:
  - Avoiding the impact altogether by not taking a certain action or parts of an action;
  - Minimizing impacts by limiting the degree or magnitude of the action and its implementation;

  - Rectifying the impact by repairing, rehabilitating, or restoring the affected environment;
  - Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; or
  - Compensating for the impact by replacing or providing substitute resources or environments.
- *Cumulative impacts* are two or more individual impacts that, when considered together, are considerable or that compound or increase other environmental impacts. The following statements also apply when considering cumulative impacts:
  - The individual impacts may be changes resulting from a single project or separate projects.
  - The cumulative impact from several projects is the change in the environment that results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor, but collectively significant projects taking place over time.

This SEIR uses a variety of terms to describe the level of significance of adverse impacts. These terms are defined as follows:

- *Less than significant*. An impact that is adverse, but that does not exceed the defined thresholds of significance. Less than significant impacts do not require mitigation. This is also referred to as a "Class III" impact.
- *Significant*. An impact that exceeds the defined thresholds of significance and would or could cause a substantial adverse change in the environment. Mitigation measures are recommended to eliminate the impact or reduce it to a less than significant level. This is also referred to as a "Class II" impact.
- *Significant and unavoidable*. An impact that exceeds the defined thresholds of significance and cannot be eliminated or reduced to a less than significant level through the implementation of mitigation measures. This is also referred to as a "Class I" impact.
- *Beneficial*. A beneficial impact may occur where the proposed project would eliminate or reduce a situation that is considered detrimental within the affected environment. Mitigation is not required. This is also referred to as a "Class IV" impact.

## G.2 Glossary, Acronyms, and Abbreviations

**100-Year Flood** – A stream flow caused by a discharge that is exceeded, on the average, only once in 100 years. A 100-year flood has a 1 percent chance of occurrence in any given year.

**AAC** – All-aluminum conductor.

**AAQS** – Ambient Air Quality Standard; a federal and state measure of the level of air contamination that is not to be exceeded in order to protect human health.

**AB** – Assembly Bill (e.g., AB 32).

**AC** – Alternating current.

**ACEC** - Area of Critical Environmental Concern.

**Acre-foot** – A unit of measure for water demand and supply. The volume of 1 acre-foot would cover 1 acre to a depth of 1 foot and is equal to 325,851 gallons.

**ADSS** — All-Dielectric Self-Supporting

**ADT** – Average Daily Trip; number of vehicles traveling per normal day on a roadway.

**Aerosol** – Wet or dry small particles in the atmosphere. Also called "particulate matter."

**Air Quality Standard** – The specified average concentration of an air pollutant in ambient air during a specified time period, at or above which level the public health may be at risk; equivalent to AAQS.

**Ambient Air** – Any unconfined portion of the atmosphere; the outside air.

**Ambient Noise Level** – Noise from all sources, near and far. ANL constitutes the normal or existing level of environmental noise at a given location.

**AMM** — Avoidance and Minimization Measure

**amsl** – Above mean sea level.

**ANL** – Ambient Noise Level.

**AP or APEFZ** – Alquist-Priolo Earthquake Fault Zone.

**APCD** – Air Pollution Control District; a regional government bureau responsible for attainment and management of air quality standards through permitting and regulating of the emission sources (e.g., San Luis Obispo County APCD).

**APLIC** — Avian Power Line Interaction Committee

**APM** – Applicant Proposed Measure.

**APN** – Assessor Parcel Number, given to a parcel, or a specified area, of land by County tax assessors.

**AQMP** - Air Quality Management Plan.

**AR** – Agricultural Rangeland.

**ARB** – Air Resources Board.

**ARPA** — Archaeological Resources Protection Act

**ARRA** – American Recovery and Reinvestment Act.

**Array –** See photovoltaic array.

**ASTM** – American Society for Testing Materials.

**ATC** — Authority to Construct

**ATCM** - Airborne toxic control measure.

**Atmospheric Stability** – The resistance to or enhancement of vertical and horizontal air movement, which regulates the amount of air exchange and affects pollution concentration or dispersion.

**AUM** – Animal unit mouths.

**Average** – As a measure, the sum of the measurements (over a specified period) divided by the number of measurements.

**Avifauna** – Birds.

**A-Weighting** – A frequency measure of noise which simulates human perception.

**AWEP** - Agricultural Water Enhancement Program.

**B.P.** – Before Present.

**Backfill** – Earth that is replaced after a construction excavation.

**Backhoe** – A self propelled machine with an arm equipped with a toothed shovel that scoops earth as the shovel is pulled toward the machine.

**Baseline** – A set of existing conditions against which change is to be described and measured.

**Berm** – A narrow shelf, path, or ledge typically at the top or bottom of a slope; also, an earthen, mounded wall.

**Biota** – Living organisms.

**BLM** – Bureau of Land Management, an agency of the U.S. Department of the Interior.

**BMP** – Best Management Practice.

**BNLL** — Blunt-Nosed Leopard Lizard

**BTU** – British thermal unit, a measurement of energy, the amount of energy that can be obtained as heat by combusting approximately 1/1000 cubic feet of natural gas.

**°C** – Degree(s) Celsius. The following equation is the conversion factor of degrees Celsius to degrees Fahrenheit: [°F] = [°C] × 9⁄5 + 32.

**CAA** – California Air Act.

**CAAQS** – California Ambient Air Quality Standard; see AAQS.

**CAISO** – California Independent System Operator.

**Cal Fire** – California Department of Forestry and Fire Protection.

**CAL/OSHA** – California Occupational Safety and Health Administration.

**Caltrans** – California Department of Transportation.

**CARB** – California Air Resources Board, sometimes abbreviated as ARB.

**CASQA** - California Stormwater Quality Association.

**CCR** – California Code of Regulations.

**CDC** - Centers for Disease Control and Prevention.

**CDF** — California Department of Forestry

**CDFW** — California Department Fish and Wildlife

**CDPH** – California Department of Public Health.

**CEC** – California Energy Commission.

**Cell** – See photovoltaic cell.

**CEQA** – California Environmental Quality Act.

**CERCLA** – Comprehensive Environmental Response, Compensation, and Liability Act (also known as "Superfund").

**CFR** – U.S. Code of Federal Regulations.

**CGS**- California Geological Survey.

**$CH_4$ –** Methane.

**CHP** – California Highway Patrol.

**Class I** – Significant impact; cannot be mitigated to a level that is not significant.

**Class II** – Significant impact; can be mitigated to a level that is not significant.

**Class III** – Adverse impact, but not significant.

**Class IV** – Beneficial impact.

**CNDDB** – California Natural Diversity Database.

**CNEL** – Community Noise Equivalent Level; the averaging of noise levels on a measurement scale of decibels that increases the actual noise measurement, to account for an increased sensitivity to noise during late evening, nighttime, and morning hours (the increments are 5 dB from 7 to 10 p.m. and 10 dB from 10 p.m. to 7 a.m.).

**CNPS** – California Native Plant Society.

**CO** – Carbon Monoxide; a colorless, odorless, toxic gas produced by incomplete combustion of carbon in fossil fuels.

**$CO_2$ –** Carbon Dioxide.

**CO2e** – Equivalent $CO_2$ emission rate.

**Concentration** – The relative content of a component (as dissolved or dispersed material) and measured by weight or volume of material per unit of volume of the medium.

**Concentration, Average** – The average of a series of measurements of concentration.

**Concentration, Maximum** – The highest individual or average measurement of concentration.

**Corrosivity** – Is an estimate of the potential for soil-induced chemical action that dissolves or weakens uncoated shell.

**CPUC** – California Public Utilities Commission**.**

**CRHR** – California Register of Historical Resources.

**CRMP** – Cultural Resource Management Plan.

**CRNR** – California Regulatory Notice Register.

**Crystalline Silicon** – A type of photovoltaic cell made from a slice of single-crystal silicon or polycrystalline silicon.

**CSC** – California Species of Concern.

**CSP** – Conservation Stewardship Program.

**CSSC** — California Species of Special Concern

**Cultural Resource** – Places or objects important for scientific, historical, and religious reasons to cultures, communities, and individuals.

**CUP** – Conditional Use Permit

**CUPA –** Certified Unified Program Agency.

**CVSR** – California Valley Solar Ranch project.

**CWA** – Clean Water Act.

**dB** – Decibels.

**dBA** – The A-weighted decibel scale representing the relative insensitivity of the human ear to low-pitched sounds; decibels are logarithmic units that compare the wide range of sound intensives to which the human ear is sensitive.

**DC** – Direct current.

**Dead-End Steal Structures** – The structures at the termination point of a transmission line, or at the overhead/underground transition point.

**Decibel (dB)** – A logarithmic unit which measures the pressure levels of sounds.

**DEIR** – Draft Environmental Impact Report (see EIR).

**DFG** – California Department of Fish and Game.

**DOC** – California Department of Conservation.

**DOE** – Department of Energy.

**DOF** - California Department of Finance.

**DOI** – U.S. Department of the Interior; a federal Department that includes the following agencies: – BLM, USFWS, Bureau of Mines, Bureau of Reclamation, etc.

**DOT** – U.S. Department of Transportation.

**DPH** — Department of Public Health

**DPM** – Diesel particulate matter.

**DTSC** - Department of Toxic Substance Control.

**DWR** – (California) Department of Water Resources.

**EDD** – (California) Employment Development Department.

**EIR** – Environmental Impact Report; an environmental impact assessment document prepared in accordance with the California Environmental Quality Act (CEQA).

**EIS** — Environmental Impact Statement; an environmental impact assessment document prepared in accordance with the National Environmental Protection Act (NEPA).

**EMF** – Electric and Magnetic Field.

**Emission** – Unwanted substances released by human activity into air or water.

**Emission, Primary** – An emission that is treated as inert (non-reactive).

**Emission, Secondary** – Unwanted substances that are chemical byproducts of reactive primary emissions.

**EPA** – U.S. Environmental Protection Agency; a federal agency that works to protect the environment.

**EQIP** - Environmental Quality Incentives Program.

**ESA** – Environmental Site Assessment.

**°F** – Degree(s) Fahrenheit. The following equation is the conversion factor of degrees Fahrenheit to degrees Celsuis: [°C] = ([°F] − 32) × 5⁄9.

**FAA** – Federal Aviation Administration.

**Fault** – A fracture or zone of fractures in rock strata which have undergone movement that displaces the sides relative to each other, usually in a direction parallel to the fracture. Abrupt movement on faults is a cause of most earthquakes.

**FCC** — Federal Communications Commission

**FCFPD** — Fresno County Fire Protection District

**FEIR** – Final Environmental Impact Report. The Final EIR includes all comments made to the Draft EIR as well as the responses of the Lead Agency to those comments and is submitted to the state/local government and the public for review of a proposed project.

**FEMA** – Federal Emergency Management Agency.

**FHWA** – Federal Highway Administration.

**FIRM** - Flood Insurance Rate Maps.

**Flora** – Plants or plant life.

**FLPMA** — Federal Land Policy and Management Act

**FMPP** – Farmland Monitoring and Mapping Program.

**FS** – Facilities Study.

**FTE** – Full-time equivalent.

**Fugitive Dust** – Airborne pulverized soil particles.

**FWS** – (United States) Fish and Wildlife Service.

**g** – (a) gram; (b) gravities, a unit of acceleration equal to that produced on free falling bodies at the earth's equator.

**Generation** – The production of electricity from other forms of energy such as combustion, falling water or thermal transfer.

**Generation Capacity** – Maximum electric production limit for which a generator is rated. The maximum limit fluctuates with changes in temperature or other environmental circumstances, depending on the type of machine.

**Gen-Tie** or **Generation-Tie** – Transmission line connecting a generator to the electric grid.

**GHG** – Greenhouse gas.

**GIDAP** — Generator Interconnection and Deliverability Allocation Procedures

**GIP** — Generator Interconnection Procedures

**GIS** – Geographic Information System.

**gpd** – Gallons per day; a measure of flow rate.

**gpm** – Gallons per minute; a measure of flow rate.

**HAPs** – Hazardous air pollutants.

**HC** – Hydrocarbons; a mixture of hydrocarbon compounds usually referred to in the vapor state.

**HCP** - Habitat Conservation Plan.

**Herpetofauna** – Biological term for reptiles.

**HFC** – Hydrofluorocarbon.

**HMA** – Housing Market Area; see Population and Housing.

**HMMP** — Habitat Mitigation and Monitoring Plan

**HMP** — Habitat Management Plan

**Horsepower** – A unit of power equivalent to 33,000 foot-pounds per minute or 745.7 watts of electricity.

**hp** – Horsepower, a unit of power equivalent to 33,000 foot-pounds per minute or 745.7 watts of electricity.

**HRRP** — Habitat Restoration and Revegetation Plan

**hrs/day** – Hours per day.

**HSM** — Habitat Suitability Model

**HTH** — Harvey & Associates

**Hydrocarbons, Nonmethane** – Mixture or concentration of hydrocarbons with the methane fraction ignored. One of many formulations for reactive hydrocarbons.

**Hydrocarbons, Reactive** – Mixture or concentration of hydrocarbons with fraction assumed to be non-reactive removed from consideration. See VOC.

**Hz –** Hertz; a measure of frequency in cycles per second.

**I-5** – Interstate 5.

**IBC** – International Building Code.

**IEPR** — Integrated Energy Policy Report

**Insolation** – The solar power density incident on a surface of stated area and orientation, usually expressed as Watts per square meter or Btu per square foot per hour. Also known as solar insolation.

**Inventory, Emission** – A list of daily or annual emissions, listed by pollution source category (e.g., trains, refineries, agriculture, etc.).

**Inversion** – A layer of air in the atmosphere in which the temperature increases with altitude at a rate greater than normal (adiabatic). Pollutants tend to be trapped below the inversion.

**Invertebrate** – Animals that lack a spinal column.

**Inverter –** Inverters take the direct current (DC) output of the panels and convert it to alternating current (AC) for delivery to the transmission grid via the project medium voltage collection system, substation, and switchyard.

**ISO** – Independent System Operator; or International Organization for Standardization.

**ISR** — Indirect Source Review

**$km^2$** – Square kilometer.

**kV** – Kilovolt. A measure of electric voltage, one thousand volts.

**KVP** – Key Viewpoint; one or a series of points on a travel route or at a use area where the view of the proposed project would be most revealing.

**KVPs** – Key viewpoints.

**kWh** – Kilowatt-hour.

**kWh/m2/day** - Kilowatt-hours per square meter per day.

**LACM** - Natural History Museum of Los Angeles County.

**lbs** – Pounds.

**lbs/day** – Pounds per day.

**LCA** – Life-cycle analysis.

**LCC** – Land Capability Class.

**Ldn** – The average ambient noise level in dBA with levels between 10 p.m. and 7 a.m. increased by 10 dBA.

**Lead Agency** – The agency responsible for preparation of the CEQA or NEPA document. For the proposed California Valley Solar Ranch Project, San Luis Obispo County is the Lead Agency under CEQA.

**Leq** – Average level of sound determined over a specific period of time.

**LESA** – (California) Land Evaluation and Site Assessment Model.

**LGIR** – Large Generator Interconnection Request.

**Liquefaction** – The process of making or becoming liquid (soils).

**LOS** – Level of Service; a measure of roadway congestion, ranging from A (free-flowing) to F (highly congested).

**LSAA** — Lake and Streambed Alteration Agreement

**LUST** – Leaking underground storage tank.

**LWCs** — low water crossings

**LZs** — landing zones

**m** – Meter, length equal to 39.37 inches.

**Median** – The mid-value in a series of values, with half having greater value and half lower value. To be distinguished from "average."

**meq/L** – Milli-equivalents per liter.

**mg/L –** milligrams per liter.

**MM** – Mitigation Measure.

**MMTCO2e** – Million metric tonnes of $CO_2$ equivalent.

**Monitoring Station** – A mobile or fixed site equipped to measure instantaneous or average ambient air pollutant concentrations.

**MPAC** – Modular protection automation and control.

**MRDS** - Mineral Resource Data System.

**MSA** - Metropolitan Statistical Area.

**MW** – Megawatt; a measure of electric power equal to 1,000 kilowatts or 1,000,000 watts.

**MWh** – Megawatt-hours.

**MWh/y** – Megawatt-hours per year.

**NAAQS** – National Ambient Air Quality Standards; see AAQS.

**NAHC** – Native American Heritage Commission.

**NCCAB** — North Central Coast Air Basin

**NCCP** - Natural Community Conservation Plan.

**NCP** - National Contingency Plan.

**NEPA** – National Environmental Policy Act.

**NFIP** - National Flood Insurance Program.

**NHPA** – National Historic Preservation Act.

**Nitrogen Oxides** – A gaseous mixture of nitric oxide (NO) and nitrogen dioxide ($NO_2$) and symbolically represented as $NO_3$).

**NO** – Nitric oxide. A molecule of one nitrogen and one oxygen atom. Results usually from combustion of organic substances containing nitrogen and from recombination of nitrogen decomposed in air during high temperature combustion.

**$NO_2$** – Nitrogen dioxide. A molecule of one nitrogen and two oxygen atoms. Results usually from further oxidation of nitric oxide (NO) in the atmosphere. Ozone accelerates the conversion.

**NOA** - Naturally occurring asbestos.

**NOI** — Notice of Intent

**Noise Level, Median** – The level of noise exceeded 50 percent of the time. Usually specified as either the daytime or the nighttime median noise level. Also given the designation $L_{50}$.

**NOP** – Notice of Preparation.

**NOx** – Oxides of nitrogen. Poisonous and highly reactive gases produced when fuel is burned at high temperatures, causing nitrogen in the air to combine with oxygen.

**NPDES** – National Pollutant Discharge Elimination System.

**NRCS** — Natural Resources Conservation Service

**NREL** – National Renewable Energy Laboratory.

**NRHP** – National Register of Historical Places.

**NSH** – Natinoal Seismic Hazard.

**NSR** – New Source Review; see Air Quality.

**NWI** — National Wetland Inventory

**O&M** – Operations & Maintenance.

**$O_3$** – See Ozone.

**OES** – Office of Emergency Services.

**OHV** – Off-highway vehicle.

**OHWM** - Ordinary high water mark.

**OPGW** — optical ground wire

**ORV** – Off-road vehicle.

**OSHA** – U.S. Occupational Safety and Health Administration, a federal agency regulating health and safety in the workplace.

**Oxidant** – A mixture of chemically oxidizing compounds formed from ultraviolet stimulated reactions in the atmosphere, with ozone a principal fraction.

**Ozone** – A molecule of three oxygen atoms — $O_3$. A colorless gas formed by a complex series of chemical and photochemical reaction of reactive organic gases, principally hydrocarbons, with the oxides of nitrogen, which is harmful to the public health, the biota, and some materials.

**Panel** – See photovoltaic panel.

**Particulate Matter (particulates)** – Very fine sized solid matter or droplets, typically averaging one micron or smaller in diameter. Particulate matter is a mixture of materials that can include smoke, soot, dust, salt, acids, and metals. Some particulate matter, such as pollen, is naturally occurring. Also called "aerosol."

**PCA** — Pest Control Advisor

**PERP** – Portable Equipment Registration Program.

**PFC** – Perfluorocarbons.

**PG&E** – Pacific Gas and Electric Company.

**pH** – A measure of acidity or alkalinity.

**Photochemical Pollutant** – Reactive organic compounds (ROC) and nitrogen oxides (NOx), photochemical pollutants that absorb energy from the sun and react chemically to form ozone ($O_3$).

**Photovoltaic (PV) Array** An interconnected system of photovoltaic modules that function as a single electricity- producing unit. The CVSR project would have 8 proposed arrays.

**Photovoltaic (PV) Cell** – The smallest semiconductor element within a PV module to perform immediate conversion of light into electrical energy.

**Photovoltaic (PV) Module** – The smallest assembly of solar cells and ancillary parts, such as interconnections and terminals, intended to generate direct current power under unconcentrated sunlight.

**Photovoltaic (PV) Panel –** Often used interchangeably with PV module, but more accurately used to refer to a physically connected collection of modules.

**PM10** – Particulate matter less than 10 microns in size, which is small enough to be inhaled deeply into the lungs and cause disease and is regulated by the USEPA.

**PM2.5** – Particulate matter less than 2.5 microns in size, which is small enough to be inhaled deeply into the lungs and cause disease and is regulated by the USEPA.

**PPA** – Power Purchase Agreement.

**ppm** – Parts per million, a measure of the amount of one substance found in a second, which is the carrier.

**ppt** – Parts per thousand, a measure of the amount of one substance found in a second, which is the carrier.

**PRC** – Public Resources Code.

**PTO** – Permit to Operate; granted by the APCD after source testing and validation of permits.

**PV** – photovoltaic, direct conversion of light into electricity.

**PVS LLC** — Panoche Valley Solar, LLC; the project Applicant.

**PVSP** — Panoche Valley Solar Project

**QC5** — Queue Cluster 5

**Rating** – Maximum operation limit of transmission or generation facilities, as established by WSCC and/or NPP operating and reliability criteria guidelines. Utility facilities and interconnections can be rated either for individual or simultaneous operation, where simultaneous operations take into consideration collective WSCC or NPP utilities.

**RCNM** – Roadway Construction Noise Model.

**RCRA** – Resource Conservation and Recovery Act.

**Reconductoring** – Installation of new and larger capacity conductors (the wires that carry electricity) on existing transmission towers/poles. Depending on engineering, tower replacement is sometimes necessary to support the new conductors that are sometimes larger and sometimes operate at a higher temperature.

**RES** – Renewable Electricity Standard.

**RETI** – Renewable Energy Transmission Initiative.

**Riparian** – Area along the banks of a river or lake supporting specialized plant and animal species.

**RMP** – Resource Management Plan.

**RMS** – Root mean square.

**RO** – Reverse Osmosis.

**ROC** — Reactive organic compounds

**ROD** — Record of Decision

**ROGs** – Reactive organic gases.

**ROW** – Right-of-way; an easement, lease, permit, or license across an area or strip of land to allow access or to allow a utility to pass through public or private lands.

**ROWs** – Rights-of-way.

**RPS** – Renewable Portfolio Standard.

**Ruderal** – Growing where the natural vegetation cover has been disturbed.

**RWQCB** – Regional Water Quality Control Board.

**SAA** — Streambed Alteration Agreement

**SB** – Senate Bill.

**SBCFD** - San Benito County Fire Department.

**SCADA** – Supervisory Control and Data Acquisition.

**SCE** — Southern California Edison

**SCS** – Soil Conservation Service. Currently known as the Natural Resource Conservation Service (NRCS).

**Seedbank** – The layer of topsoil containing native plant seed material, which is frequently used as a "seed bank" for revegetation of native plants.

**SEIR** — Supplemental Environmental Impact Report

**Sensitive Receptor** – Land uses adjacent to or within proximity to the proposed project that could be impacted by construction, operation, and maintenance activities.

**$SF_6$** Sulfur hexafluoride.

**SGIR** – Small Generator Interconnection Request.

**SHPO** – State Historic Preservation Office.

**SIP** – State Implementation Plan (see Air Quality); a document required periodically from each county by EPA that indicates the progress and the planning of the county for improving the quality of its air.

**SIS** – System Impact Study.

**SITP** — State Incidental Take Permit

**SJVAPCD** — San Joaquin Valley Air Pollution Control District

**SJVHCP** — San Joaquin Valley Habitat Conservation Plan

**Skylining** – Extending above the horizon line.

**$SO_2$** – Sulfur dioxide; a corrosive and poisonous gas produced from the complete combustion of sulfur in fuels.

**$SO_3$** — sulfur trioxide

**Solar Insolation** – The solar power density incident on a surface of stated area and orientation, usually expressed as Watts per square meter or Btu per square foot per hour.

**Solar Irradiance** – The direct, diffuse, and reflected solar radiation that strikes a surface.

**Solargen** – Solargen Energy, Inc., the original (2010) Applicant of the proposed Panoche Valley Solar Farm Project.

**SOx** – Oxides of sulfur. The group of compounds formed during combustion or thereafter in the atmosphere of sulfur compounds in the fuel, each having various levels of oxidation, ranging from two oxygen atoms for each sulfur atom to four oxygen atoms.

**SPCC** – Spill prevention containment and counter measure.

**SR** – State Route (e.g., SR-58 or State Highway 58).

**SRAs** — State Responsibility Areas

**Storie Index** – California Revised Storie Index soil rating system used to determine an area of land's potential utilization and productive capacity based on soil characteristics.

**Sulfates** – Compounds in air or water that contain four oxygen atoms for each sulfur atom. See SOx.

**Sulfur Oxides** – A gaseous mixture of sulfur dioxide ($SO_2$) and sulfur trioxide ($SO_3$) and symbolically represented as SOx. Can include particulate species such as sulfate compounds ($-SO_4$).

**SWPPP** – Storm Water Pollution Prevention Plan.

**SWRCB** – State Water Resources Control Board.

**TACs** – Toxic Air Contaminants.

**TCP** – traditional culture property.

**TCP** – Traffic Control Plan.

**TDS** – Total Dissolved Solids.

**Terrestrial** – Related to or living on land. Terrestrial biology deals with upland areas as opposed to shorelines or coastal habitats.

**TMDL** - Total maximum daily load.

**Tracking Array –** A photovoltaic (PV) array that follows the path of the sun to maximize the solar radiation incident on the PV surface.

**TSCA** – Toxic Substances Control Act of 1976.

**TSP** – Total Suspended Particulates; solid or liquid particles small enough to remain suspended in air. PM10 is the portion of TSP that can be inhaled.

**TSPs** — tubular steel poles

**UBC** – Uniform Building Code.

**UCMP** - University of California Berkeley Museum of Paleontology.

**USA** – Underground Service Alert.

**USACE** – U.S. Army Corps of Engineers.

**USDA** – U.S. Department of Agriculture.

**USEPA** – United States Environmental Protection Agency.

**USFWS** – U.S. Fish and Wildlife Service.

**USGS** – U.S. Geological Survey.

**Utility Corridor** – A strip of land, or an easement, on which utility facilities such as power lines and pipelines are constructed.

**Visual Sensitivity** – Consideration of people's uses of various environments and their concerns for maintenance of scenic quality and open-space values; examples of areas of high visual sensitivity would be areas visible from scenic highways, wilderness areas, parks, recreational water bodies, etc.

**VMT** – Vehicle miles traveled, usually per day.

**VOC** – Volatile organic compounds.

**vpd** – Vehicles per day.

**W/m$^2$** – Watts per square meter.

**WA** – Wilderness Area.

**Watershed** – The area contained within a drainage divide above a specified point on a stream.

**WCP** — Weed Control Plan

**WDR** – Waste Discharge Requirements.

**WEEP** — Worker Environmental Education Program

**Wetland** – For regulatory purposes under the Clean Water Act, the term wetlands means "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas" [taken from EPA Regulations listed at 40 CFR 230.3(t)].

**Williamson Act** – California Land Conservation Act of 1965.

**WMMP** — Wetland Mitigation and Monitoring Plan

**WPLT** - Western Pluvial Lakes Tradition.

**WSA** – Wilderness Study Area.

**WSAs** — Wilderness Study Areas.

**WSS** – Web Soil Survey.

**ZOI** – Zone of influence.

# H. EIR Preparers

A consultant team lead by Aspen Environmental Group prepared this document under the direction of San Benito County (County). Input was received from County planners, including Byron Turner (Interim Planning Director) and Michael Krausie (Associate Planner), as well as other County staff during the review process.

Table H-1 presents the technical preparers from the Aspen consultant team.

**Table H-1. EIR Preparers/Reviewers**

| Agency/Firm | Personnel by Name | Education/Title | Years Exp. | Issue Area |
|---|---|---|---|---|
| Aspen Environmental Group | Susan Lee | M.S. Applied Earth Science<br>B.A. Geology | 31 | EIR Project Manager |
| | Amy Morris | Ph.D. Environmental Studies<br>M.A. Environmental Studies<br>B.A. Environmental Biology | 17 | Deputy Project Manager; Agriculture |
| | Brewster Birdsall, P.E. Q.E.P. | M.S. Civil Engineering<br>B.S. Mechanical Engineering | 18 | Air Quality; Greenhouse Gas; Noise |
| | Emily Capello | M.P.A. Environmental Science and Policy<br>B.A. English Literature and History | 13 | Cumulative; Alternatives |
| | Matthew Long | Master of Environmental Science<br>Master of Public Policy<br>B.A. Comparative Literature | 7 | Water Resources; Geology; Land Use; Recreation; Public Services; Graphics |
| | Beth Bagwell | Ph.D. Anthropology (Archaeology)<br>M.A. Anthropology (Archaeology)<br>B.A. Anthropology and Creative Writing | 23 | Cultural and Paleontological Resources |
| | Mark Tangard | B.A. Geography | 35 | Document Production |
| | Kati Simpson | B.A. Geography<br>A.A. Liberal Arts and Sciences | 24 | Graphics |
| H.T. Harvey and Associates | Brian Boroski | Ph.D. Wildland Resource Science<br>M.S. Natural Resources<br>B.S. Biology | >25 | Biological Resources |
| | Robert Burton | Ph.D. Paleoecology<br>M.S. Ornithology<br>B.S. Biology | >25 | Biological Resources |
| | Daniel Duke | J.D. Environmental Law<br>B.A. Communication | >10 | Biological Resources |
| | Jeff Seay | B.A. Biology & Ornithology | >25 | Biological Resources |
| | Ethan Barnes | M.S. Forestry<br>B.S. Environmental Science | >15 | Biological Resources |
| | Monica Cong | M.S. Wildlife Ecology<br>B.S. Biology<br>B.S. Zoology | >10 | Biological Resources |

**Table H-1. EIR Preparers/Reviewers**

| Agency/Firm | Personnel by Name | Education/Title | Years Exp. | Issue Area |
|---|---|---|---|---|
| Hexagon Transportation Consultants | Robert Del Rio | B.S. Civil Engineering | 17 | Transportation and Circulation (Traffic Study) |
| Geotechnical Consultants, Inc. | James Thurber | M.S. Geology; B.S. Geology; B.S. Geography Certified Hydrogeologist; Professional Geologist | 29 | Water Resources; Groundwater |

# I. Mitigation Monitoring and Reporting Plan

This section presents the Revised Project mitigation measures, monitoring and reporting actions, and agency and applicant responsibilities. Applicant Proposed Measures (APMs) are presented in Table B-9 (Section B.10). Mitigation measures are listed only under the discipline where they were initially proposed. Changes from the 2010 Final EIR are shown in underline (for added text) and strikeout (for deleted text).

Measures that were adopted in 2010 and have not changed are presented here for completeness, but these measures are not available for comment. These measures are shaded in grey.

**Table I-1. Mitigation Monitoring and Reporting Plan**

| MM # | Mitigation Measure Title[1] | Monitoring / Reporting Action | Timing & Method of Verification | Agency or County Responsibilities | Applicant Responsibilities |
|---|---|---|---|---|---|
| Monitoring Process | | | | | |
| EM-1 | Provide funding for environmental monitoring. | • Verify provision of funding from the Applicant to County<br>• Confirm that the mitigation monitoring program is in compliance with County Conditions of Approval. | • Prior to issuance of building or grading permits.<br>• Monitoring will occur throughout construction, operation, and decommissioning. | • County shall approve environmental mitigation measures and any other conditions of approval. | • Provide funding to County of San Benito support monitoring for all measures requiring environmental mitigation.<br>• Provide funding for work necessitated by mitigation measures that requires use of individuals with special expertise (e.g., botanist, wildlife biologist).<br>• Develop mitigation monitoring plan |
| EM-2 | Provide documentation for monitoring. | • Confirm qualifications of monitor<br>• Prepare monitoring report annually for each calendar year in which construction occurs, and annually thereafter until monitor/County determine annual reports are no longer needed<br>• Verify completion of remedial measures. | • Throughout construction<br>• Annually post-construction until the monitor and the County determine that all measures have been successfully established | • County verifies qualifications of monitor.<br>• County confirms receiving annual report of mitigation monitoring.<br>• County confirms remedial measures are implemented, if required. | • Retain a qualified individual to verify that all adopted measures have been successfully implemented.<br>• Prepare monitoring reports on an annual basis<br>• Agree to complete any necessary remedial measures identified in the reports. |

[1] The full text of all modified mitigation measures is presented in each part of Section C (Sections C.1 through C.15). Measures that have not changed since the 2010 Final EIR are identified with shaded cells in the first two columns, and are presented in Appendix 3.

**Table I-1. Mitigation Monitoring and Reporting Plan**

| MM # | Mitigation Measure Title[1] | Monitoring / Reporting Action | Timing & Method of Verification | Agency or County Responsibilities | Applicant Responsibilities |
|---|---|---|---|---|---|
| Aesthetics | | | | | |
| AE-1.1 | Reduce night lighting impacts. | • Design and install temporary construction and decommissioning lights according to standards stated in measure.<br>• Design and implement a lighting mitigation plan<br>• Review the lighting plan<br>• Address lighting infractions/. | • 60 days prior to installation of lighting the Applicant will contact the County to discuss documentation defined in the lighting mitigation plan.<br>• 30 days prior to installation of lighting, the Applicant will submit the lighting mitigation plan to the County for review and approval.<br>• Prior to commercial operation, the Applicant shall notify the County when the operational lighting installation is ready for inspection. | • County coordinates with the Applicant to develop lighting mitigation plan.<br>• County reviews lighting mitigation plan.<br>• County inspects operational lighting installation.<br>• County ensures complaints are addressed sufficiently. | • Implement modifications specified by the County within 30 days and notify the County that they have been completed and are ready for inspection.<br>• Resolve lighting complaints within 48 hours and inform the County of complaint resolution within 48 hours. Submit a formal complaint resolution report to the County within 30 days thereafter. |
| AE-3.1 | Treat surfaces of project structures and buildings. | • Develop Surface Treatment Plan<br>• Treat buildings and project. structures visible to the public to reduce visual contrast with surrounding landscape.<br>• Prepare and submit status report regarding surface treatment maintenance. | • 60 days prior to physical construction, submit Surface Treatment Plan for review<br>• Prior to the start of commercial operation, notify the County of completion of surface treatment. | • County reviews and approves Surface Treatment Plan. | • Develop and submit Surface Treatment Plan to the County<br>• Notify the County after treatment is completed; provide the County with color photographs from KVP used for project analysis.<br>• Provide the County with a status report regarding surface treatment maintenance in the Annual Compliance Report. |

**Table I-1. Mitigation Monitoring and Reporting Plan**

| MM # | Mitigation Measure Title[1] | Monitoring / Reporting Action | Timing & Method of Verification | Agency or County Responsibilities | Applicant Responsibilities |
|---|---|---|---|---|---|
| Agriculture | | | | | |
| AG-2.1 | Create agricultural conservation easement/s. | • Create conservation easement(s) or provide adequate funds to create easement(s) to a qualified land trust.<br>• Present documentation of conservation easement(s) creation or funding for conservation easement(s) with the County Department of Planning and Building and the County Recorder.<br>• Prepare annual monitoring reports for the conservation easement(s) | • Prior to issuance of building permits, create conservation easement(s).<br>• Within 6 months of the start of construction, create additional conservation easement(s) to offset loss Williamson Act Lands (if required). | • County verifies qualifications of land trust.<br>• County determines fees for conservation easement creation and oversight with qualified land trust.<br>• County reviews annual monitoring reports of the conservation easement(s) prepared by the land trust. | • Fund the creation of either a conservation easement(s).<br>• Create additional conservation easements for Williamson Act Lands proposed for cancellation if such lands are not encumbered by conservation easements created for biological resources mitigation.<br>• Present the County with record of conservation easement(s) creation or proof of funds provided for conservation easement(s) creation. |
| Air Quality | | | | | |
| AQ-1.1 | Reduce fugitive dust. | • Implement all components of mitigation measure. | • During construction, operation, and decommissioning. | N/A | • Implement measures to reduce fugitive dust and ensure all measures are shown on grading and building plans. |
| AQ-1.2 | Designate a dust complaint monitor. | • Designate a fugitive dust monitor to ensure fugitive dust emission mitigation is observed and impacts from fugitive dust do not exceed standards.<br>• Post publicly visible sign with contact information to report dust complaints. | • Prior to any grading, earthwork, or demolition and during construction | • Monterey Bay Unified APCD will confirm receiving contact information of monitoring personnel. | • Designate fugitive dust monitor.<br>• Provide name of monitor to Monterey Bay Unified APCD Compliance Division.<br>• Provide and post a sign with contact information. |
| Climate Change/Greenhouse Gas | | | | | |
| —none— | | | | | |

**Table I-1. Mitigation Monitoring and Reporting Plan**

| MM # | Mitigation Measure Title[1] | Monitoring / Reporting Action | Timing & Method of Verification | Agency or County Responsibilities | Applicant Responsibilities |
|---|---|---|---|---|---|
| Biological Resources | | | | | |
| BR-G.1 | Implement a Worker Environmental Education Program (WEEP). | • Develop and implement WEEP with all elements defined in the mitigation measure. | • Prior to the issuance of a building permit or site mobilization, prepare WEEP.<br>• Prior to any construction activities on-site (including surveying) and throughout construction, implement WEEP. | • County will verify qualifications of the biologist preparing WEEP and the environmental monitor implementing WEEP.<br>• County will review and approve WEEP. | • Retain qualified biologist(s) to prepare WEEP.<br>• Prepare and implement WEEP.<br>• Retain qualified environmental monitor to implement and enforce WEEP and maintain log of all personnel who have completed WEEP training. |
| BR-G.2 | Implement Best Management Practices (BMPs). | • Implement BMPs.<br>• Provide annual documentation of BMPs. | • During all ground disturbance and construction-related activities. | • County will review annual written report.<br>• County will verify qualifications of the environmental monitor. | • Implement BMPs.<br>• Submit written report annually documenting compliance with BMPs.<br>• Retain an environmental monitor to ensure compliance with BMPs. |
| BR-G.3 | Develop and implement a Habitat Restoration and Revegetation Plan (HRRP). | • Prepare HRRP.<br>• Restore disturbed areas to pre-construction conditions or better via implementation of a HRRP.<br>• The HRRP shall include a Soil Restoration Plan, Plant Restoration and Revegetation Plan, Monitoring Plan, and Final Closure Plan. | • Prior to issuance of the building permit, prepare HRRP.<br>• Prior to the final project inspection, review plan compliance.<br>• At least one year prior to planned closure and decommissioning, submit and review Final Closure Plan | • County will verify qualifications of the biologist and agricultural soil expert.<br>• County will review and approve HRRP.<br>• County will review plan compliance.<br>• County will review Final Closure Plan. | • Retain a qualified biologist, knowledgeable in the area of annual grassland habitat restoration and a qualified agricultural soil expert to prepare a HRRP and monitor the initial implementation and attainment of established success criteria.<br>• Retain a qualified biologist, knowledgeable in the area of annual grassland habitat restoration and a qualified agricultural soil expert to prepare and implement the Final Closure Plan.<br>• Prepare and implement HRRP and Final Closure Plan. |

**Table I-1. Mitigation Monitoring and Reporting Plan**

| MM # | Mitigation Measure Title[1] | Monitoring / Reporting Action | Timing & Method of Verification | Agency or County Responsibilities | Applicant Responsibilities |
|---|---|---|---|---|---|
| BR-G.4 | Implement biological monitoring of construction activities. | • Monitor all ground-disturbing construction activities immediately adjacent to, or within, habitat that supports populations of the listed or special-status species.<br>• Contact the USFWS, CDFG, and County and provide a written report if dead or injured special-status species are encountered.<br>• Environmental monitor will assist on-site biological monitor(s). | • Prior to the commencement of ground disturbance or site mobilization activities, retain a<br>• First day of work through the duration of construction activities, monitor activities.<br>• Contact agencies and the County by end of day if dead/injured special-species are found; provide written report within 5 days of sighting. | • County will verify qualifications of biologist and environmental monitor.<br>• County will review reports submitted by biological monitor. | • Retain qualified biologist(s) with demonstrated expertise with listed and/or special-status plants, terrestrial mammals, and reptiles to monitor all construction activities on a daily basis.<br>• Report any dead or injured special-status species. |
| BR-G.5 | Create permanent conservation easement(s) as compensation for impacts to biological resources. | • Create permanent conservation easement(s) according to requirements found in the mitigation measure.<br>• Monitor and maintain mitigation land per the requirements set forth in the Wetland Mitigation Monitoring Plan and the Habitat Mitigation and Monitoring Plan (HMMP).<br>• Prepare annual report. | • 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. | • County will review and determine whether proposed conservation easement holder meets requirements specified in the mitigation measure.<br>• County will verify and approve attainment of habitat mitigation requirements prior to construction of each project phase. | • Provide funds for a "qualified land trust" to acquire appropriate conservation easement(s) or donate appropriate conservation easement(s) to a qualified land trust or to an appropriate mitigation bank.<br>• Submit annual report to the County. |
| BR-G.6 | Develop and implement Wetland Mitigation and Monitoring Plan and Habitat Management Plan for mitigation lands. | • Prepare and implement WMMP and HMP per the requirements set forth in the mitigation measure. | • Prior to the issuance of a construction permit, submit WMMP and HMP.<br>• 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. | • County will review and approve WMMP and HMP.<br>• County will verify acquisition of off-site lands. | • Retain a qualified biologist to prepare and implement WMMP and HMP. |

**Table I-1. Mitigation Monitoring and Reporting Plan**

| MM # | Mitigation Measure Title[1] | Monitoring / Reporting Action | Timing & Method of Verification | Agency or County Responsibilities | Applicant Responsibilities |
|---|---|---|---|---|---|
| BR-1.1 | Prepare and implement a Weed Control Plan (WCP). | • Prepare WCP with 6 elements outlined in the mitigation measure.<br>• Retain an environmental monitor to ensure compliance with measures set forth in WCP. | • Prior to the issuance of a building permit or ground disturbance, prepare and approve WCP.<br>• WCP will be implemented prior to and during construction | • County will verify qualifications of biologist or restoration ecologist responsible for preparing WCP.<br>• County will review and approve WCP. | • Prepare and implement a WCP.<br>• Retain an environmental monitor to ensure the compliance with construction measures.<br>• Prepare and submit to the County reports and logs, as required by the WCP. |
| BR-1.2 | Develop and implement a Grazing Plan for the project site. | • Prepare the Grazing Plan with 6 elements outlined in the mitigation measure. | • Prior to the issuance of a construction permit, prepare and approve Grazing Plan.<br>• Grazing Plan will be implemented during construction and operation. | • County will verify qualifications of biologist or restoration ecologist responsible for preparing the Grazing Plan.<br>• County will review and approve the Grazing Plan. | • Prepare and implement the Grazing Plan.<br>• Prepare and submit alterations to the Grazing Plan to the County. |
| BR-3.1 | Conduct pre-construction surveys for State and Federally Threatened, Endangered, Proposed, Petitioned, and Candidate plants and implement avoidance measures. | • Retain a qualified plant ecologist/<br>• Conduct pre-construction surveys for special-status plants.<br>• Document special-status plants found.<br>• Establish buffers based on survey results. | • Prior to new ground disturbance throughout construction, conduct pre-construction surveys. | • County will verify the qualifications of plant ecologist or biologist.<br>• County, USFWS, and CDFG approval will be required to reduce buffer zone for special-status species. | • Retain a qualified plant ecologist/.<br>• Conduct pre-construction surveys and prepare report on special-status species to submit to the County.<br>• Document yearly survey events and update WEEP with information from data collected. |
| BR-6.1 | Conduct pre-construction surveys for nesting and breeding birds and implementation of avoidance measures. | • Conduct pre-construction surveys for nesting birds during breeding season.<br>• Establish a 300-foot buffer around active nests, 500-foot buffer around active raptor nests, or 0.5-mile buffer around active golden eagle nests.<br>• Report California condor sightings to USFWS | • Prior to any on-site disturbance during breeding season, conduct pre-construction surveys for nesting birds.<br>• During the recognized breeding season for most birds biological monitors will routinely inspect for active nests. | • County will verify the qualifications of the biologist. | • Retain a qualified biologist.<br>• Conduct pre-construction surveys and for birds.<br>• Set up appropriate buffer zones for active nests.<br>• Obtain written documentation providing concurrence from the USFWS and CDFG authorizing the nest relocation and prepare a written report documenting the relocation efforts. |

**Table I-1. Mitigation Monitoring and Reporting Plan**

| MM # | Mitigation Measure Title[1] | Monitoring / Reporting Action | Timing & Method of Verification | Agency or County Responsibilities | Applicant Responsibilities |
|---|---|---|---|---|---|
| BR-7a.1 | Impacts to all potential breeding habitat for western spadefoot toad shall be avoided to the extent feasible. | • Conduct pre-construction surveys for western spadefoot toad if work must be conducted during the wet season.<br>• Implementation of avoidance measures and ensure buffer delineations are kept in good working order | • Prior to the commencement of construction activities implement avoidance and minimization measures. | • County will verify the qualifications of the biologist.<br>• Review the report provided by the Applicant's biologist. | • Retain a qualified biologist.<br>• Conduct pre-construction surveys for western spadefoot toad.<br>• Identify candidate locations for species relocation prior construction<br>• Prepare a written report documenting the survey results, when necessary, and compliance with avoidance measures for County review and approval. Copies of this report shall also be provided to the CDFG. |
| BR-7a.2 | Conduct pre-construction surveys for San Joaquin coachwhip and coast horned lizard and implement avoidance measures. | • Conduct pre-construction surveys for San Joaquin coachwhip and coast horned lizards.<br>• Re-locate San Joaquin coachwhip and coast horned lizards when identified. | • Prior to the disturbance of habitat, conduct pre-construction surveys for San Joaquin coachwhip and coast horned lizards. | • County will verify the qualifications of the biologist.<br>• Review the report provided by the Applicant's biologist. | • Retain a qualified biologist.<br>• Conduct pre-construction surveys for San Joaquin coachwhip and coast horned lizards.<br>• Identify candidate locations for species relocation prior construction<br>• Prepare a written report documenting the relocation efforts and mortality and submit to the County on a monthly basis. |
| BR-7b.1 | Conduct pre-construction surveys for non-breeding birds designated as California Species of Special Concern. | • Conduct pre-construction surveys for birds designated as California Species of Special Concern (CSSC) in areas proposed for ground disturbance. | • Prior to ground-disturbing activities. | • County will verify the qualifications of the biologist. | • Retain a qualified biologist.<br>• Conduct pre-construction surveys for birds designated as CSSC.<br>• Consult with the CDFG to determine timing of surveys. |

**Table I-1. Mitigation Monitoring and Reporting Plan**

| MM # | Mitigation Measure Title[1] | Monitoring / Reporting Action | Timing & Method of Verification | Agency or County Responsibilities | Applicant Responsibilities |
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| BR-7c.1 | Conduct pre-construction surveys for short-nosed kangaroo rat, San Joaquin pocket mouse, and Tulare grasshopper mouse and implementation of avoidance measures. | • Conduct pre-construction surveys for short-nosed kangaroo rat, San Joaquin pocket mouse, and Tulare grasshopper mouse.<br>• Flag occupied areas and re-locate when identified. | • 30 days prior to commencement of ground disturbing activities, conduct pre-construction surveys. | • County will verify the qualifications of the biologist.<br>• Review the report provided by the Applicant's biologist. | • Retain a qualified biologist.<br>• Identify candidate locations for species relocation prior construction.<br>• Relocate individuals found within an area of proposed disturbance to a pre-approved area outside the project area.<br>• Prepare a written report documenting the relocation efforts and mortality and submit to the County on a monthly basis. |
| 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. | • Avoid disturbing vernal pool fairy shrimp habitat.<br>• Compensate for the loss of vernal pool fairy shrimp habitat. | • During construction. | • County will verify ephemeral pool avoidance and appropriate compensation, when required. | • Avoid filling or disturbing such pools to the maximum extent practicable.<br>• Compensate unavoidable loss of ephemeral pools through the preservation and management of 2 acres of occupied vernal pool fairy shrimp habitat (2:1 preservation ratio) and the creation, management, and preservation of 1 acre of vernal pool habitat (1:1 creation ratio) at a location approved and pursuant to authorization received from the USFWS or through the purchase of credits at a USFWS-approved mitigation bank. |
| BR-8.3 | Avoid seasonal depressions and known waterbodies. | • Avoid seasonal depressions known to support listed fairy shrimp.<br>• Place buffers around seasonal depressions.<br>• Delineate buffers on construction plans.<br>• Environmental monitor will periodically check to ensure that the on-site delineation method is working and observed. | • Prior to commencement of construction activities, place on-site delineations of buffers. | • County will verify avoidance of seasonal depressions and application of appropriate buffers. | • Avoid seasonal depressions known to support listed fairy shrimp. |

**Table I-1. Mitigation Monitoring and Reporting Plan**

| MM # | Mitigation Measure Title[1] | Monitoring / Reporting Action | Timing & Method of Verification | Agency or County Responsibilities | Applicant Responsibilities |
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| BR-9.1 | Conduct pre-construction surveys for California tiger salamander and implement avoidance measures. | • Conduct pre-construction California tiger salamander surveys.<br>• Restrict grading and subsurface disturbing activities to daylight hours.<br>• Inspect pipes and similar structures.<br>• Avoid disturbance to all ponds and in-stream pools.<br>• Scope burrows proximal to known breeding pools. | • Prior to construction on all project phases, complete surveys and provide documentation demonstrating completion. | • County will verify qualifications of the biologist.<br>• County will verify completion of pre-construction surveys. | • Retain a qualified biologist to perform pre-construction surveys for California tiger salamanders.<br>• Implement avoidance measures in the mitigation measure. |
| BR-10.1 | Conduct pre-construction surveys for blunt-nosed leopard lizard and implement avoidance measures. | • Conduct pre-construction surveys within 30 days prior to construction for blunt-nosed leopard lizard, establish buffers and exclusion areas for all observed blunt-nosed leopard lizards.<br>• Record the geographic coordinates of each blunt-nosed leopard lizard individual detected.<br>• Implement protective procedures if a blunt-nosed leopard lizard is detected on the project site.<br>• Establish movement corridors to allow movement of isolated blunt-nosed leopard lizards to and from areas of greater population density.<br>• Avoid use of plastic monofilament netting. | • Prior to all construction activities that will result in permanent or temporary ground disturbance within 30 days of construction.<br>• Prior to issuance of grading permits, mitigation for impacts must be completed. | • County will verify qualifications of the biologist.<br>• County will verify completion of pre-construction surveys. | • Retain a qualified biologist to perform pre-construction surveys for blunt-nosed leopard lizards.<br>• Implement avoidance measures found in the mitigation measure.<br>• Implement monitoring as prescribed in the HMMP.<br>• Inform the USFWS and CDFG immediately upon discovery of dead or injured blunt-nosed leopard lizard. |
| BR-12.2 | Avoid and report California condors. | • Stop work within 500 feet of a California condor found in the project area.<br>• Report all California condor sightings to the USFWS and CDFG. | • Report sightings of California condor within 24 hours. | • County will verify that work stops upon sighting of a California condor. | • Ensure work stops upon sighting of a California condor.<br>• Report all California condor sightings to the USFWS and CDFG; if injured condors are observed, receive instruction from the agencies. |

**Table I-1. Mitigation Monitoring and Reporting Plan**

| MM # | Mitigation Measure Title[1] | Monitoring / Reporting Action | Timing & Method of Verification | Agency or County Responsibilities | Applicant Responsibilities |
|---|---|---|---|---|---|
| BR-13.1 | Focused pre-construction burrowing owl surveys and implementation of avoidance measures. | • Conduct pre-construction surveys.<br>• Create appropriate buffer zone around observed burrows.<br>• Passively relocate birds, if necessary, and place one-way doors on evicted burrows. | • No more than 15 days prior to the commencement of initial ground disturbing activities, conduct pre-construction surveys. | • County will verify qualifications of the biologist.<br>• County will verify completion of pre-construction surveys. | • Retain a qualified biologist(s) with experience surveying for burrowing owls to conduct pre-construction surveys (minimum of 3 site visits).<br>• Implement avoidance measures and ensure buffer delineations are kept in good working order. |
| BR-14.1 | Implement Avian Power Line Interaction Committee guidelines (APLIC). | • Construct all transmission facilities, towers, poles and lines in accordance with APLIC guidelines.<br>• Include details of design components on all construction plans.<br>• Prepare separate document with all measures to be implemented to ensure compliance with APLIC policies and guidelines. | • Submit designs and documentation of compliance with the construction permit application.<br>• Prior to final inspection, review submitted designs and documents. | • County will review and approve submitted designs and documents. | • Ensure all transmission facilities, towers, poles and lines are constructed in accordance with APLIC guidelines.<br>• Include design components reflecting APLIC guidelines in all construction plans and prepare document listing measures implemented to ensure compliance with APLIC guidelines.<br>• Monitor for new versions of the APLIC guidelines and update designs or implement new measures as needed during project construction |

**Table I-1. Mitigation Monitoring and Reporting Plan**

| MM # | Mitigation Measure Title[1] | Monitoring / Reporting Action | Timing & Method of Verification | Agency or County Responsibilities | Applicant Responsibilities |
|---|---|---|---|---|---|
| BR-14.2 | Prepare and Implement an Avian Conservation Strategy and Eagle Conservation Plan | • Prepare and implement an Avian Conservation Strategy and Eagle Conservation Plan that includes a bird mortality study, polarized light and insectivorous bird study, thresholds, and implementation measures. | • Prior to issuance of construction permit, submit an Avian Conservation Strategy and Eagle Conservation Plan. | • County will verify qualifications of the biologist.<br>• County will consult with CDFG and USFWS on the proposed program to determine thresholds prior to approval.<br>• County will verify submittal of two studies to scientific-journals.<br>• County will verify submittal of quarterly and annual reporting and consultation with USFWS and CDFG to determine if subsequent years of reporting are necessary. | • Retain a qualified biologist to prepare an Avian Conservation Strategy and Eagle Conservation Plan in consultation with CDFG and USFWS and monitor impacts to birds during construction and one year after completion of construction.<br>• Install additional bird flight diverters, alter 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.<br>• Prepare papers that describe the design and monitoring results of the two studies to be submitted to peer-reviewed scientific journals.<br>• Submit annual reports to the County during construction and one year post-construction (additional reporting if mitigation actions continue to be required). |
| BR-15.1 | Survey pre-construction maternity colony or hibernaculum for sensitive bats. | • Conduct pre-construction surveys.<br>• Conduct surveys during the maternity season within 300 feet of project activities.<br>• Avoid active maternity roosts or hibernacula.<br>• Survey for alternative maternity roosts if avoidance is not feasible. | • No more than 15 days prior to grading near or the removal of towers, conduct pre-construction surveys. | • County will verify qualifications of the biologist.<br>• County will verify completion of pre-construction surveys and surveys for maternity roosts. | • Retain a biologist, holding a CDFG collection permit and a Memorandum of Understanding with CDFG allowing the biologist to handle bats, to conduct pre-construction surveys and surveys during maternity season for sensitive bats.<br>• Routinely inspect known maternity roots or hibernacula. |

**Table I-1. Mitigation Monitoring and Reporting Plan**

| MM # | Mitigation Measure Title[1] | Monitoring / Reporting Action | Timing & Method of Verification | Agency or County Responsibilities | Applicant Responsibilities |
|---|---|---|---|---|---|
| BR-15.2 | Provide substitute roosting habitat. | • Provide substitute roosting habitat for the maternity colony on, or in close proximity to, the Project site no less than three months prior to the eviction of the colony. | • At least three months prior to eviction, provide suitable alternative roosting habitat.<br>• Prior to final County inspection, review submittal of written report. | • County will verify adequacy of alternative roost site(s).<br>• County will review written report detailing coordinating with the CDFG and location of the roost sites. | • Construct alternative roost sites as required for the duration of construction activities and submit a written report documenting required coordination with CDFG as well as the location of roost sites to the County |
| BR-15.3 | Exclude bats prior to eviction from roosts. | • Safely evict bats from non-breeding bat hibernacula.<br>• Demolition of maternity roost sites must commence before maternity colonies form (i.e., prior to 1 March) or after young are flying (i.e., after 31 July). | • A minimum of one week prior to intended eviction date, implement methods to evict bats. | • County will verify qualifications of the biologist.<br>• County will ensure evictions are done according to mitigation measure standards. | • Retain a biologist, holding a CDFG collection permit and a Memorandum of Understanding with CDFG allowing the biologist to handle bats, to direct eviction of roosting areas. |
| BR-16.1 | Conduct focused pre-construction giant kangaroo rat burrow/precinct surveys and implement avoidance measures. | • Conduct pre-construction surveys.<br>• Flag and establish buffer around active giant kangaroo rat burrows/.<br>• Map all active burrows/precincts and incorporate them into a GIS based figure for use by on-site monitors and construction crews.<br>• Live-trap and relocate giant kangaroo rats present in impact areas as described in an approved Giant Kangaroo Rat Relocation Plan | • No more than 30 days prior to commencement of ground-disturbing activities, conduct pre-construction surveys.<br>• Prior to final County inspection, review submitted documentation of burrows/precincts abandoned or destroyed. | • County will verify qualifications of the biologist.<br>• County will verify completion of pre-construction surveys. | • Retain a qualified biologist to perform pre-construction surveys for giant kangaroo rat.<br>• Create GIS figure of all active burrows/and give to<br>• Document all giant kangaroo rat burrows/precincts abandoned or destroyed and provide a written report to the County of San Benito.<br>• Periodically field check the mapped burrows/precincts to buffer delineation and flagging are all in good working order. |
| BR-16.2 | Minimize impacts of foundation support installations. | • Evaluate and implement feasible foundation installation systems to minimize noise and vibration that would affect ground-dwelling wildlife. | • | • County will verify installation of noise and vibration minimizing foundations. | • Evaluate and implement feasible foundation installation systems to minimize noise and vibration that would affect ground-dwelling wildlife. |

**Table I-1. Mitigation Monitoring and Reporting Plan**

| MM # | Mitigation Measure Title[1] | Monitoring / Reporting Action | Timing & Method of Verification | Agency or County Responsibilities | Applicant Responsibilities |
|---|---|---|---|---|---|
| BR-16.3 | Preserve, manage, and maintain giant kangaroo rat habitat corridors across the project footprint. | • Construction monitoring shall occur for the duration of construction, and if the biologist determines that the corridors are not functional, adaptive management measures shall be implemented in consultation with USFWS and CDFG. | • Conservation easement on habitat corridors shall be recorded prior to commencement of construction. | • County will ensure construction monitoring. | • Preserve, manage, and maintain the ongoing functionality of the proposed giant kangaroo rat corridors on the project site.<br>• No driving on the side of any panel block adjacent to a designated habitat corridor.<br>• No new construction of buildings, ornamental tree plantings, or other features not already identified in the EIR that would reduce available habitat and may provide perching opportunities for predatory birds permitted within or directly adjacent to the habitat corridors. |
| BR-17.1 | Conduct pre-construction San Joaquin antelope squirrel surveys and implement avoidance measures. | • Conduct pre-construction surveys.<br>• Flag and establish buffer around active San Joaquin antelope squirrel burrows.<br>• Implement sequential steps to evict San Joaquin antelope squirrels if avoidance is infeasible. | • No more than 30 days prior to commencement of ground-disturbing activities, conduct pre-construction surveys.<br>• Prior to final County inspection, review submitted documentation of burrows/precincts abandoned or destroyed. | • County will verify qualifications of the biologist.<br>• County will verify completion of pre-construction surveys.<br>• County will review document listing all abandoned of destroyed burrows. | • Retain a qualified biologist to perform pre-construction surveys for San Joaquin antelope squirrels.<br>• Document all San Joaquin antelope squirrel burrows abandoned or destroyed and, provide a written report to the County of San Benito, CDFG and USFWS<br>• Periodically survey for potential burrows requiring the avoidance measures. |
| BR-18.1 | Conduct focused pre-construction surveys for American badger surveys and implementation of avoidance measures. | • Conduct pre-construction surveys.<br>• Flag and establish appropriate buffer around active American badger dens.<br>• Evict unavoidable badger dens by slowly excavating the burrow before or after the rearing season (15 February through 1 July). | • No more than 30 days prior to commencement of ground-disturbing activities, conduct pre-construction surveys.<br>• Prior to the final County inspection or occupancy, submit report to the County and CDFG. | • County will verify qualifications of the biologist.<br>• County will verify completion of pre-construction surveys.<br>• County will review document listing all badger-related activities. | • Retain a qualified biologist to perform pre-construction surveys for American badgers.<br>• Routinely inspect protected dens and ensure that delineation methods are in good working order.<br>• Prepare and submit a written report documenting all badger-related activities (e.g. den flagging, monitoring, badger removal, etc.) to the County of San Benito and the CDFG. |

**Table I-1. Mitigation Monitoring and Reporting Plan**

| MM # | Mitigation Measure Title[1] | Monitoring / Reporting Action | Timing & Method of Verification | Agency or County Responsibilities | Applicant Responsibilities |
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| BR-19.1 | Conduct focused pre-construction San Joaquin kit fox surveys and implementation of avoidance measures. | • Conduct pre-construction surveys.<br>• Flag and establish appropriate buffer around active San Joaquin kit fox surveys.<br>• Stop work within a 200-foot radius of an occupied natal den and contact USFWS if active dens are found within 1,000 feet of project activities; work may resume after pups have left the den.<br>• Implement sequential steps to evict San Joaquin kit fox if avoidance is infeasible. Natal dens shall not be disturbed at any time | • Prior to commencement of construction activities, conduct pre-construction surveys.<br>• Prior to the final County inspection, review compliance with measures and documentation of mitigation.<br>• Prior to the final County inspection or occupancy, submit report to the County. | • County will verify qualifications of the biologist.<br>• County will verify completion of pre-construction surveys.<br>• County will review location and design of the artificial dens prior to installation.<br>• County will review document listing all abandoned or destroyed dens. | • Retain a qualified biologist to perform pre-construction surveys for San Joaquin kit fox.<br>• Routinely inspect protected dens and ensure that delineation methods are in good working order.<br>• Replace all excavated kit fox dens with artificial dens on a 2:1 basis<br>• Prepare and submit a written report documenting all kit fox dens abandoned, destroyed or avoided/protected for County review and approval. |
| BR-22.1 | Fence temporary pond to exclude wildlife. | • Fence the perimeter of the temporary ponds.<br>• Report any bird or other wildlife deaths within two days of discovering the carcass to the CDFW and USFWS | • Monthly monitoring starting with the first month of operation.<br>• No less than 30 days prior to operation of the ponds, provide as-built drawings of the ponds.<br>• No later than December 30, submit annual report for the life of the project. | • County will verify qualifications of the biologist.<br>• County will review as-built drawings of the ponds.<br>• County will review annual monitoring reports. | • Retain a designated biologist to regularly survey the ponds at least once per month starting with the first month of operation of the ponds.<br>• Submit annual monitoring reports to the County, CDFG, and USFWS describing the dates, durations, and results of site visits conducted at the ponds. |
| BR-23-1 | Create conservation easement on all project areas retired from the development footprint. | • Documentation of recorded conservation easement shall be submitted to the San Benito County Department of Planning and Building. | • Conservation easement on approved project footprint shall be recorded prior to commencement of construction.<br>• Retired portions of the site shall be put under restricted use for biological resources upon the retirement of portions of the project site. | • County will verify receipt of recorded conservation easement. | • Provide funds for a qualified land trust to acquire appropriate conservation easement(s) for retired portions of the proposed project site, or donate appropriate conservation easement(s) to a qualified land trust or to an appropriate mitigation bank. |

**Table I-1. Mitigation Monitoring and Reporting Plan**

| MM # | Mitigation Measure Title[1] | Monitoring / Reporting Action | Timing & Method of Verification | Agency or County Responsibilities | Applicant Responsibilities |
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| Cultural and Paleontological Resources | | | | | |
| CR-2.1 | Conduct cultural resource monitoring during construction. | • Conduct cultural resources monitoring. | • During construction, conduct monitoring. | • County will verify qualifications of the archaeologist.<br>• County will ensure compliance with and effectiveness of the cultural resources monitoring program. | • Fully fund all monitoring and documentation activities.<br>• Retain a professional archaeologist to monitor subsurface construction disturbance.<br>• Retain a Native American monitor at locations sensitive for Native American remains.<br>• Document any unanticipated discovery on a Department of Parks and Recreation Primary Record and Archaeological Site Record (DPR 523) |
| CR-2.2 | Treat previously unidentified archaeological resources discovered during construction. | • Upon discovery of archaeological remains, cease all work activities within 100 feet of the discovery and notify the County.<br>• Inspection of remains by a Registered Professional Archaeologist is required to evaluate significance.<br>• Develop and implement a data recovery plan if the site meets California Register of Historic Resources significance criteria. | • Immediately cease work and notify the County within 24 hours upon discovery of archaeological remains.<br>• Prior to implementation, review data recovery plan. | • County will verify qualifications of the archaeologist.<br>• County will review and approve data recovery plan. | • Fully fund all work related to the identification and treatment previously unidentified archaeological resources discovered during construction.<br>• Upon discovery of archaeological remains, cease all work activities<br>• Develop and implement a data recovery plan if the site meets California Register of Historic Resources significance criteria. |

**Table I-1. Mitigation Monitoring and Reporting Plan**

| MM # | Mitigation Measure Title[1] | Monitoring / Reporting Action | Timing & Method of Verification | Agency or County Responsibilities | Applicant Responsibilities |
|---|---|---|---|---|---|
| CR-2.3 | Inadvertent discovery of human remains. | • Upon discovery, contact County coroner immediately and cease all work within 300 feet of the discovery immediately.<br>• If remains are identified as Native American, the coroner will notify the NAHC within 24 hours of discovery.<br>• NAHC will then identify the Most Likely Descendent, who will determine the manner in which the remains are treated | • Immediately cease work and contact the County coroner upon discovery of human remains.<br>• Within 24 hours, notify the NAHC of discovery of Native American remains. | • County will provide a coroner upon discovery of human remains. | • Cease work and implement buffer zone around human remains.<br>• Contact County coroner. |
| CR-2.4 | Implement workers environmental awareness program. | • Implement a workers environmental awareness program to train all construction personnel to recognize possible buried cultural remains and resources.<br>• No construction worker may work in the field without first participating in the training program. | • Prior to working, all construction workers must participate in workers environmental awareness program. | • County will review and approve workers environmental awareness program.<br>• County will review list of construction personnel. | • Prepare and implement a workers environmental awareness program.<br>• Provide to the County a list of construction personnel who have completed the cultural resources identification training prior to start of construction, and this list shall be updated as required when new personnel start work. |
| PA-1.1 | Implement site-specific paleontological recovery. | • Prepare a Paleontologic Monitoring and Recovery Plan following the guidelines of the Society for Vertebrate Paleontology (1995).<br>• Identify and implement procedures to recover and preserve unknown and accidentally discovered significant fossils within the paleontologically sensitive areas on site.<br>• Prepare report on paleontological discoveries.<br>• Implement mitigation pursuant to a Paleontologic Monitoring and Recovery Plan prepared prior to construction by a qualified Principal Paleontologist, | • Prior to construction, review submitted Paleontologic Monitoring and Recovery Plan.<br>• Upon discovery of paleontological materials, implement procedures outlined in the Paleontologic Monitoring and Recovery Plan and prepare and submit report. | • County will verify qualifications of the Principal Paleontologist.<br>• County will review and approve a Paleontologic Monitoring and Recovery Plan.<br>• County will review report on paleontological discoveries. | • Retain a qualified Principal Paleontologist to prepare Paleontologic Monitoring and Recovery Plan.<br>• Identify and implement procedures to recover and preserve unknown and accidentally discovered significant fossils.<br>• Prepare report on paleontological discoveries and submit to the County and the curation facility. |

**Table I-1. Mitigation Monitoring and Reporting Plan**

| MM # | Mitigation Measure Title[1] | Monitoring / Reporting Action | Timing & Method of Verification | Agency or County Responsibilities | Applicant Responsibilities |
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| PA-1.2 | Monitor grading and excavation for unknown and accidentally discovered paleontological resources. | • Monitor grading, trenching, and other earth disturbance that may affect the Pleistocene Older Alluvium, mapped in a small segment within the western portion of the project area.<br>• Implement measures in Paleontologic Monitoring and Recovery Plan upon discovery of resources.<br>• Prepare report on paleontological discoveries. | • Upon discovery of paleontological materials, implement procedures outlined in the Paleontologic Monitoring and Recovery Plan and prepare and submit report. | • County will verify qualifications of the paleontological monitor.<br>• County will review report on paleontological discoveries. | • Retain a qualified paleontological monitor under the supervision of a Registered Professional Geologist.<br>• Monitor earth in a small segment within the western portion of the project area.<br>• Identify and implement procedures to recover and preserve unknown and accidentally discovered significant fossils.<br>• Prepare report on paleontological discoveries and submit to the County and the curation facility |
| Geology, Mineral Resources, and Soils | | | | | |
| GE-4.1 | Implement Geotechnical Report recommendations. | • Perform all earthwork operations according to the project specifications set forth in the Geotechnical Report. | • During construction. | • County will verify all earth operations are performed according to specifications found in the Geotechnical Report. | • Perform all earthwork operations according to the project specifications set forth in the Geotechnical Report. |
| Hazards and Hazardous Materials | | | | | |
| HZ-1.2 | Protect workers and public from Valley Fever | • Prepare detailed Valley Fever informational brochure<br>• Provide breathing protection gear upon request<br>• Prepare Grading and Site Preparation Plan | • Submit Valley Fever informational brochure to Department of Public Health 30 days prior to commencement of construction activities<br>• Submit Grading and Site Preparation Plan to County 60 days prior to commencement of construction activities | • DPH will approve Valley Fever brochure<br>• County will approve Grading and Site Preparation Plan | • Prepare Valley Fever brochure and provide to all workers entering construction site<br>• Provide breathing protection gear upon request<br>• Prepare Grading and Site Preparation Plan, submit to County, implement Plan |
| HZ-5.1 | Cease work during Red Flag Warning. | • Cease all grading, welding, soldering, and smoking on the project.<br>• Ensure vehicles remain on designated access roads or laydowns areas cleared of vegetation. | • During a Red Flag Warning issued for the zone encompassing the proposed project site, cease work. | • County will verify a work-stop is implemented on | • Cease all grading, welding, soldering, and smoking on the project.<br>• Ensure vehicles remain on designated access roads or laydowns areas cleared of vegetation. |

**Table I-1. Mitigation Monitoring and Reporting Plan**

| MM # | Mitigation Measure Title[1] | Monitoring / Reporting Action | Timing & Method of Verification | Agency or County Responsibilities | Applicant Responsibilities |
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| HZ-7.1 | Prohibit standing water. | • Ensure that open containers be inverted and construction ditches not be allowed to accumulate water. Construction and maintenance operations shall not generate standing water, except for water storage and stormwater management ponds.<br>• Consult appropriate agencies and obtain permits before filling naturally occurring depressions, drainages, and pools at the site appropriate permits. | • During construction and operation. | • County will verify that construction and operation activities do not result in standing water.<br>• County will verify that the appropriate agencies were consulted prior to draining and filling natural depressions. | • Ensure construction and operation workers do not allow water to accumulate.<br>• Consult the appropriate resource agency (San Benito County, U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, California Department of Fish and Game) and obtaining a permit prior to draining and fill a natural depression. |
| Land Use and Recreation | | | | | |
| LU-1.1 | Establish construction liaison. | • Provide a toll-free general phone number and the name and contact information for a local public liaison to all property owners within a one-mile radius of the project's boundaries.<br>• Ensure public liaison addresses questions or concerns related to the project.<br>• Provide summary documentation of all comments and concerns communicated to the liaison monthly for the duration of construction and for one year following the completion of construction | • 30 days prior to the start of any construction-related activities and for up to one year following construction, local public liaison will be available to the public.<br>• Within 72 hours, during construction, liaison will respond to all construction-related questions and concerns.<br>• Quarterly during construction and one year following the completion of construction, submit compliance documentation. | • County will verify the provision of a public liaison.<br>• County will review the quarter compliance reports. | • Provide a toll-free general phone number and the name and contact information for a local public liaison.<br>• Ensure public liaison addresses questions or concerns related to the project.<br>• Prepare and submit to the County quarterly summary documentation of all comments and concerns communicated. |

**Table I-1. Mitigation Monitoring and Reporting Plan**

| MM # | Mitigation Measure Title[1] | Monitoring / Reporting Action | Timing & Method of Verification | Agency or County Responsibilities | Applicant Responsibilities |
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| LU-1.2 | Provide advance notice of construction. | • Provide 30 days' notice to all residents within 5 miles of the project boundary, the Principal of Panoche Elementary School, and the BLM Hollister Field Office.<br>• If complaints are received, provide the County with a report that documents the complaints and the strategy for resolution of any noise complaints | • Prior to and during construction, give at least 30 days advance notice of the start of any construction-related activities.<br>• Within 72 hours of receiving a complaint, provide the County with a report that documents the complaints and the strategy for resolution of any noise complaints | • County will verify distribution of notice.<br>• County will review report documenting complaints. | • Provide 30 days notice to all residents within 5 miles of the project boundary, the Principal of Panoche Elementary School, and the BLM Hollister Field Office.<br>• Provide the County with a report that documents the complaints and the strategy for resolution of any noise complaints |
| LU-1.3 | Provide quarterly construction updates. | • Provide all property owners within a one-mile radius of the project site's boundaries with updates and changes to all of the information provided in the pre-construction notification.<br>• Ensure public liaison responds to all questions and complaints. | • During construction, provide quarterly updates on project.<br>• Within 72 hours of receiving a complaint during construction and within 1 week post-construction, respond to all questions and complaints. | • County will verify distribution of quarterly updates. | • Provide all property owners within a one-mile radius of the project site's boundaries with updates and changes to all of the information provided in the pre-construction notification.<br>• Ensure public liaison responds to all questions and complaints. |
| Noise | | | | | |
| NS-1.1 | Shield construction staging areas. | • Install adequate temporary noise barriers around the construction staging areas to reduce noise levels associated with deliveries and construction equipment staging.<br>• Monitor noise levels during construction at the project's property line closest to the construction staging areas.<br>• Should hourly noise level standards be exceeded as a result of work occurring at a staging area, stop all noise-related work at that staging area until adequate noise attenuation measures are installed to meet these standards. | • Prior to the use of noisy equipment during construction, install noise barriers.<br>• Throughout duration of the noise-making activity, ensure any measures installed remain in good working order. | • County will verify that noise barriers are in place and that noise level standards are not exceeded. | • Install adequate temporary noise barriers.<br>• Monitor noise levels during construction.<br>• Stop all noise-related work at that staging area until adequate noise attenuation measures are installed to meet noise level standards. |

**Table I-1. Mitigation Monitoring and Reporting Plan**

| MM # | Mitigation Measure Title[1] | Monitoring / Reporting Action | Timing & Method of Verification | Agency or County Responsibilities | Applicant Responsibilities |
|---|---|---|---|---|---|
| NS-1.2 | Implement noise-reducing features and practices for construction noise. | • Employ and clearly state in the contractors' specifications the noise-suppression techniques listed in the mitigation measure. | • Prior to construction and decommissioning work commencing, employ noise-suppression techniques to minimize the impact of temporary noise. | • County will verify that noise-suppression techniques are implemented. | • Employ and clearly state in the contractors' specifications the noise-suppression techniques. |
| NS-1.3 | Provide advance notice of construction. | • Provide advance notice of construction between 2 and 4 weeks prior to commencement of construction.<br>• Address any complaints received related to noise and prepare a report indicating how noise complaints are handled.<br>• County's Environmental Monitor shall verify implementation of agreed upon strategy. | • Within 2 to 4 weeks prior to construction or decommissioning activities, provide notice of activities.<br>• Within 48 hours, provide the County with a report that documents the complaints and the strategy for resolution of any noise complaints. | • County will verify implementation of noise-reduction strategy through an environmental monitor.<br>• County will review report documenting complaints. | • Provide advance notice of construction and decommissioning.<br>• Address any complaints received related to noise and prepare a report indicating how noise complaints are handled. |
| NS-1.4 | Limit pile driving activities. | • Implement limitations on pile driving activities to reduce noise levels. | • During pile driving activities. | • County will verify appropriate limitations are implemented during pile driving activities. | • Implement limitations on pile driving activities to reduce noise levels. |
| NS-2.1 | Limit decommissioning activities to daytime. | • Construction-related activities shall be limited to the hours of 7:00 a.m. to 7:00 p.m. such that these activities are exempted from Section 25.37.035(E)(2) of the San Benito County Code. | • During decommissioning, limit hours of construction-related activities to between 7:00 am and 7:00 pm. | • County will verify construction-related activities occur during the appropriate hours. | • Ensure construction-related activities occur only during the hours of 7:00 a.m. to 7:00 p.m. |

**Table I-1. Mitigation Monitoring and Reporting Plan**

| MM # | Mitigation Measure Title[1] | Monitoring / Reporting Action | Timing & Method of Verification | Agency or County Responsibilities | Applicant Responsibilities |
|---|---|---|---|---|---|
| NS-4.1 | Locate PV inverters and transformers away from the project's property line. | • Place inverters/transformers the appropriate distance from the project property line and each other to ensure compliance with the County's daytime hourly noise level standard.<br>• Enclose inverters/transformers or implement other noise attenuation measures as necessary to meet County daytime hourly noise level standards<br>• Should hourly noise level standards be exceeded, stop operations of offending inverters and transformers until adequate noise attenuation measures are installed to meet these standards. | • During construction and operation.<br>• Throughout duration of the noise-making activity, ensure measures installed remain in good working order. | • County will verify implementation of noise-reduction strategy through an environmental monitor. | • Place inverters/transformers the appropriate distance from the project property line and each other.<br>• Enclose inverters/transformers or implement other noise attenuation measures as necessary<br>• Stop operations of offending inverters and transformers until adequate noise attenuation measures are installed to meet these standards |
| NS-5.1 | Limit panel washing activities. | • Limit panel washing to the appropriate time and day.<br>• Should hourly noise level standards be exceeded, stop work in the area. Panel washing can resume during an exempted time period. | • Monday through Saturday 7:00 a.m. to 7:00 p.m. excluding federal holidays, panel washing activities are allowable when occurring within 1,900 feet of the project's property line.<br>• Any time during daylight hours, panel washing activities are allowable on panels farther than 1,900 feet of the property line. | • County will monitor noise levels at the project's property line if noise complaints are received during panel washing activities occurring outside of the exempted times. | • Limit panel washing to the appropriate time and day.<br>• Should hourly noise level standards be exceeded, stop work in the area. Panel washing can resume during an exempted time period. |
| Population and Housing | | | | | |
| —none— | | | | | |

**Table I-1. Mitigation Monitoring and Reporting Plan**

| MM # | Mitigation Measure Title[1] | Monitoring / Reporting Action | Timing & Method of Verification | Agency or County Responsibilities | Applicant Responsibilities |
|---|---|---|---|---|---|
| Public Services, Utilities, and Service Systems | | | | | |
| PS-1.1 | Develop and implement service agreement with a qualified firefighting entity | • Establish an agreement with a qualified firefighting entity and the Applicant.<br>• Provide qualified entity an agreed upon fee based on actual costs to fund additional personnel.<br>• Provide fire protection training to its permanent employees. | • Prior to issuance of building permits, submit fully executed agreement between County Fire Department and the Applicant.<br>• Yearly, provide funding to qualified entity. | • County will verify funds provided to qualified entity.<br>• County will verify fire protection training is provided to permanent project employees. | • Establish an agreement with a qualified firefighting entity and the Applicant.<br>• Provide a qualified firefighting entity an agreed upon amount based on actual costs to fund additional personnel.<br>• Provide fire protection training to its permanent employees. |
| Transportation and Circulation | | | | | |
| TR-1.1 | Prepare and implement Traffic Control Plan (TCP). | • Prepare and implement a TCP including the components listed in the mitigation measure, including a Vehicle Safety Plan. | • Prior to the start of construction and decommissioning, submit a TCP. | • County will review and approve TCP.<br>• County will verify the implementation of measures listed in the TCP. | • Submit a TCP to the County for its review and approval and to Caltrans.<br>• Implement measures listed in the TCP. |
| TR-1.2 | Rehabilitate, protect and monitor roadway pavement, bridges and culverts. | • Implement repairs along roads specified in the mitigation measure prior to construction and decommissioning.<br>• Monitor road conditions every three months during construction and implement local and State requirements relating to oversized loads and all elements specified in the mitigation measure. | • Prior to the start of construction (and every three months thereafter) and during decommissioning, repair and improve roadway pavements.<br>• During construction, the project contractor will monitor road conditions every three months.<br>• Submit pavement condition report to County within 30 days of each monitoring and repair cycle. | • County will verify road conditions are repaired prior to start of construction (and every three months thereafter) and during decommissioning.<br>• County will verify monitoring of roadways. | • Implement repairs along roads specified in the mitigation measure during construction and decommissioning.<br>• Monitor road conditions during construction and implement local and State requirements relating to oversized loads and all elements specified in the mitigation measure. |

**Table I-1. Mitigation Monitoring and Reporting Plan**

| MM # | Mitigation Measure Title[1] | Monitoring / Reporting Action | Timing & Method of Verification | Agency or County Responsibilities | Applicant Responsibilities |
|---|---|---|---|---|---|
| TR-1.3 | Repair roadway damage. | • Repair all roads prior to the start of construction.<br>• Document status of roads prior to commencement of construction or decommissioning.<br>• Restore all public roads, easements, rights-of-way and infrastructure to roadway conditions that existed prior to commencement of construction or decommissioning in a timely manner.<br>• Prepare a letter indicating status of roads and receive approval from appropriate agencies. | • At least 30 days prior to construction or decommissioning, photograph or video record all construction routes.<br>• Within 60 days of completion of construction or decommissioning, identify sections of public right-of-way to be repaired<br>• Following completion of any public right-of-way repairs, have agencies sign letter indicating approval of repairs. | • San Benito County, Caltrans, and Fresno County will consult with the Applicant to determine standards of repair prior to and post construction and decommissioning.<br>• San Benito County, Caltrans, and Fresno County will sign letter indicating approval of repairs. | • Restore all public roads to preexisting conditions as determined in consultation with San Benito County, Caltrans, and Fresno County.<br>• Pre-construction and decommissioning, provide photographs or video records of all public construction routes to San Benito County, Caltrans, and Fresno County.<br>• Post-construction, meet with San Benito County, Caltrans, and Fresno County to identify public roadways that need repair.<br>• Establish a schedule to complete the repairs and to receive approval for the action(s).<br>• Upon completion of repairs, prepare and submit letter to agencies to indicate approval of repairs. |
| TR-1.4 | Ensure Traffic Safety | • Develop Traffic Safety Plan.<br>• Implement one or more traffic safety measures. | • Develop Traffic Safety Plan prior to commencement of construction activities. | • County Building and Planning Department and Sheriff's Office to coordinate development of the Traffic Safety Plan. | • Develop Traffic Safety Plan in coordination with the County Building and Planning Department and the Sheriff's Office.<br>• Implement one or more traffic safety measures. |

**Table I-1. Mitigation Monitoring and Reporting Plan**

| MM # | Mitigation Measure Title[1] | Monitoring / Reporting Action | Timing & Method of Verification | Agency or County Responsibilities | Applicant Responsibilities |
|---|---|---|---|---|---|
| Water Resources | | | | | |
| WR-1.1 | Groundwater Monitoring and Reporting Plan. | • Prepare and submit a Groundwater Monitoring and Reporting Plan.<br>• Prepare and submit monthly summary reports during construction, annual reports for 3 years following completion of construction.<br>• Evaluate the effectiveness of the Groundwater Monitoring and Reporting Plan and revise, extend, or eliminate plan accordingly. | • 60 days prior to commencing project-related pumping activities, approve submitted Groundwater Monitoring and Reporting Plan.<br>• Submit summary reports monthly during construction and annually for the three years following construction.<br>• After construction, evaluate the Groundwater Monitoring and Reporting Plan. | • County will review and approve the Groundwater Monitoring and Reporting Plan.<br>• County will review monthly and annual summary reports.<br>• County will coordinate with the Applicant to review the effectiveness of the Groundwater Monitoring and Reporting Plan. | • Prepare and submit a Groundwater Monitoring and Reporting Plan.<br>• Prepare and submit monthly and annual summary reports.<br>• Evaluate the effectiveness of the Groundwater Monitoring and Reporting Plan and revise, extend, or eliminate plan accordingly. |

**Table I-1. Mitigation Monitoring and Reporting Plan**

| MM # | Mitigation Measure Title[1] | Monitoring / Reporting Action | Timing & Method of Verification | Agency or County Responsibilities | Applicant Responsibilities |
|---|---|---|---|---|---|
| WR-1.2 | Aquifer Testing and Well Interference Analysis. | • Prepare and submit an Aquifer Testing and Well Interference Analysis Plan.<br>• Video surveys shall be performed on all existing wells lacking available well construction records (well depth and screen intervals).<br>• Aquifer test shall be performed at a pumping rate that will "stress" the aquifer and result in measurable drawdown at the nearest observation well after two to four hours.<br>• Results of the aquifer test and well interference analysis shall be submitted to San Benito County for review and approval of the proposed well for project water supply 15 days prior to the onset of sustained pumping for the project.<br>• Amend the Groundwater Monitoring and Reporting Plan if a new or existing well south of Well #19 is approved project use. | • 14 days prior to commencing the aquifer testing and prior to pumping or making operational any existing wells or construction of any new wells south of Well #19, approve submitted an Aquifer Testing and Well Interference Analysis Plan.<br>• 72-hour minimum test duration for the aquifer drawdown test. | • County will review and approve an Aquifer Testing and Well Interference Analysis Plan.<br>• County will review aquifer test results to determine approval of use of a new well. | • Prepare and submit an Aquifer Testing and Well Interference Analysis Plan.<br>• Conduct video surveys.<br>• Perform aquifer stress tests.<br>• Submit aquifer test results to the County 15 days prior to the onset of sustained pumping for the project.<br>• Amend the Groundwater Monitoring and Reporting Plan if a new or existing well south of Well #19 is approved project use. |
| WR-6.1 | Accidental spill control and environmental training. | • Prepare and implement the Stormwater Pollution Prevention Plan (SWPPP).<br>• Establish an environmental training program for field personnel to communicate appropriate work practices, including SWPPP measures.<br>• Implement a monitoring program to ensure plans are followed. | • Prior to construction, review submitted SWPPP and environmental training program.<br>• During all construction, operation, and maintenance activities, monitor for compliance with plans. | • County will review and approve SWPPP and the environmental training program.<br>• The County's environmental monitor will ensure all plans are followed. | • Prepare and implement the Stormwater Pollution Prevention Plan (SWPPP).<br>• Establish an environmental training program.<br>• Implement a monitoring program to ensure plans are followed. |

**Table I-1. Mitigation Monitoring and Reporting Plan**

| MM # | Mitigation Measure Title[1] | Monitoring / Reporting Action | Timing & Method of Verification | Agency or County Responsibilities | Applicant Responsibilities |
|---|---|---|---|---|---|
| WR-6.2 | Store fuels and hazardous materials away from sensitive water resources. | • Prohibit fuel storage with 200 feet of groundwater supply wells or 4000 feet of community or municipal wells. | • During construction, operation, and decommissioning. | • County will verify that fuel is stored at the appropriate distance from wells. | • Prohibit fuel storage with 200 feet of groundwater supply wells or 4000 feet of community or municipal wells. |
| WR-6.3 | Maintain vehicles and equipment. | • Maintain all vehicles to ensure they are free of leaks.<br>• Maintain a vehicle and equipment maintenance log. | • During construction, operation, and decommissioning, maintain vehicles.<br>• Monthly, during construction, submit vehicle and equipment maintenance log. | • County will monitor vehicles and equipment to ensure no leakage occurs.<br>• County will review monthly log. | • Maintain all vehicles to ensure they are free of any and all leaks.<br>• Maintain a vehicle and equipment maintenance log to the County. |

# Appendix 1

## Scoping Report including Notice of Preparation

12100

**Date**: October 30, 2014

**To:** Interested Parties, Responsible Agencies and Trustee Agencies

**Subject:** **Notice of Preparation of a Draft Supplemental Environmental Impact Report**

**Lead Agency:** County of San Benito
Phone: (831) 637-5313 Fax: (831) 637-5334
Contact: Michael Krausie, Associate Planner
Email: MKrausie@cosb.us

**Project Title:** Revised Panoche Valley Solar Project

**Project Applicant:** Panoche Valley Solar LLC, Eric Cherniss

Notice is hereby given that the County of San Benito ("County") will be the Lead Agency and will prepare a Draft Supplemental Environmental Impact Report (SEIR) under the California Environmental Quality Act (CEQA) for the Panoche Valley Solar Farm Project ("Project"). This SEIR would supplement the environmental analysis contained in the previously certified 2010 Final EIR for the Project. We need to know the views of your agency as to the scope and contents of the environmental information which is germane to your agency's statutory responsibilities in connection with the Project. Your agency will need to use the SEIR prepared by the County when considering your permit or other approval for the Project.

The project description, location, and the potential environmental effects are contained in Attachment A.

Comments on this Notice are invited. Due to the time limits mandated by State law, your response must be sent at the earliest possible date, but not later than 30 days after receipt of this notice.

Please send your response to Michael Krausie at the address shown above. We will need the name for a contact person in your agency. The County has also provided the following hotline and website to request or obtain further information on the Project.

| Hotline for phone messages and faxes: | Project email address for comments or questions: |
|---|---|
| **(831) 665-5518** | **panochesolar@aspeneg.com** |

Date: October 30, 2014 Signature: Michael Krausie

Title: Michael Krausie, Associate Planner



**12102**

# ATTACHMENT A

**Project Location:** The Project site is located along Little Panoche Road in the Panoche Valley, in southeastern San Benito County. The Project site consists of 2,506 acres currently used for livestock grazing and open space, and is located 2 miles southwest of the Fresno County Line and the Panoche Hills, and 15 miles west of Interstate 5. The Project would be located within Township 15S, Range 10E, Sections 3-5, 8-11, 13-17, and 20-25 and Township 15S, Range 11E, Sections 18, 20, 29, and 30 of the United States Geologic Survey's Cerro Colorado, Llanada, Mercy Hot Springs, and Panoche 7.5-minute topographic quadrangle maps**.** The Project would connect to California's electrical system via a PG&E 230 kV transmission line. The Project location is illustrated on Figures 1A and 1B.

The primary telecommunication upgrades that are required to serve the Project consist of new optical ground wire (OPGW) that would be installed on transmission towers within PG&E's existing Panoche-Moss Landing 230 kV transmission line right-of-way ("ROW") between the Project substation and PG&E's existing Panoche Substation, 17 miles east of the Panoche Valley in Fresno County. Secondary telecommunication upgrades would be installed on one existing off-site tower located at Call Mountain in San Benito County, one new tower at Panoche Mountain in Fresno County, one new tower at the Project site, and one new tower at PG&E's Helm substation in Fresno County. These locations of the primary and secondary telecommunications upgrades are depicted on Figures 2A and 2B.

**2010 Original Project Approvals:** In 2010, the Board of Supervisors ("Board") certified a Final EIR for the Panoche Valley Solar Farm Project ("Original Project"). The Original Project that was analyzed in the Final EIR entailed the construction and operation of a 420 megawatt (MW) solar energy generation facility consisting of approximately 1.8 million pole-mounted, silicon-based solar photovoltaic (PV) panels and associated electrical equipment, an electrical substation, and an operations and maintenance building within a fenced in area of approximately 4,885 acres. The Original Project proposed to deliver electricity to the regional transmission system by interconnecting to the PG&E Moss-Panoche/Coburn-Panoche 230 kilovolt (kV) transmission line via a substation located within the Project site.

The Board approved a reduced density alternative described in the Final EIR, known as Alternative A Revised ("Approved Project"). The Approved Project entails the construction of a 399 MW solar energy generation facility within a fenced in area of approximately 3,202 acres.

**Summary of Proposed Project Changes:** Since the Board approved the Approved Project in 2010, the Project has been further engineered and refined resulting in additional changes; the current project is subsequently referred to as the Revised Project. There are two types of project changes that are part of the Revised Project and will be evaluated in the Supplemental Environmental Impact Report (SEIR): changes to the solar project and changes to Pacific Gas and Electric Company (PG&E) transmission facilities.

1. **Solar Project Changes.**

The applicant is proposing the following changes to the Original Project:

- **Project Footprint**. The Project Footprint has been reduced in size based on further engineering and design refinements, updated biological surveys, and discussions with state and federal resource agencies. The Revised Project now consists of 247 MW (as opposed to the 420 MW Project analyzed in the Final EIR and the 399 Alternative A Revised) within a fenced in Project footprint of approximately 2,506 acres (as opposed to the 4,885 acre footprint of the Original Project and 3,202 acre footprint of the Approved Project).

- **Revised Roadway Network/Circulation**. In response to Fire Department requirements for emergency access, the previously proposed internal roadway network within the Project footprint has been revised to replace a network of interior access road with a perimeter road around the boundary of the Revised Project site.
- **Security Fencing**. Based on communications with resource agencies and biological data, the perimeter fence design has been revised to include a smaller three and a half to five inch (3.5" to 5") gap at the bottom of the fence as opposed to the originally designed twenty-four inch gap.
- **Construction Phasing**. The Project would no longer be constructed in five phases, spanning a 5-year period. Instead, the Project will be constructed in a single phase that would last 16 to 18 months. Accordingly, the construction personnel and related traffic calculations have been updated to account for a single construction phase.
- **Water Use**. Based on further engineering and design refinements, changes to schedule and construction methodologies, the amount of water that would be used during the temporary, 16 to 18 month, construction phase would increase. However, due to the reduced building footprint and reduction in solar arrays, the amount of water that would be used for panel washing once the Project becomes operational has decreased.
- **Water Storage**. The proposed water storage plan during construction has been modified. The previously proposed lined evaporation pond has been eliminated. The Revised Project would include construction of three temporary construction water ponds. Temporary piping would be used to transport water from the ponds to drop tanks at designated locations around the Project site. Temporary exclusionary fencing would be installed around the ponds for safety and to restrict access by special status species. The temporary ponds would be removed at the end of construction.
- **Mitigation Measures**. The Applicant is proposing changes to several mitigation measures relating to Air Quality, Biological Resources, and Cultural Resources impacts that were adopted by the County in 2010 based on the results of additional biological surveys and best management practices recommended by scientists working in the region, as well as lessons learned from other solar development that has occurred throughout the State since the Project was approved.

**2. PG&E Upgrades.** Since 2010, the applicants have been working with PG&E to define the scope and location of upgrades to PG&E's telecommunication system that are needed to connect the Project to PG&E's 230 kV transmission line. The proposed telecommunication upgrades are as follows:

- A primary telecommunications system consisting of approximately 17 miles of new OPGW would be installed on 75 existing transmission structures between the Project substation and the PG&E existing Panoche Substation in Fresno County.
- One segment of OPGW (4,650 ft) (All-Dielectric Self-Supporting [ADSS] fiber optic cable) would be permanently installed on 9 new wood poles in an existing ROW on agricultural land where the 230 kV line crosses two existing 500 kV lines.
- A secondary telecommunications system consisting of a microwave repeater system that would be installed on up to three new microwave towers and one existing tower.

**Changes to the 2010 Final EIR to Address the Project Changes:** The SEIR will supplement the environmental analysis contained in the 2010 Final EIR to address the impacts of the Revised Project. In accordance with CEQA, the SEIR will focus on and disclose any "new significant environmental effects" from the Project changes that were not previously addressed in the 2010 Final

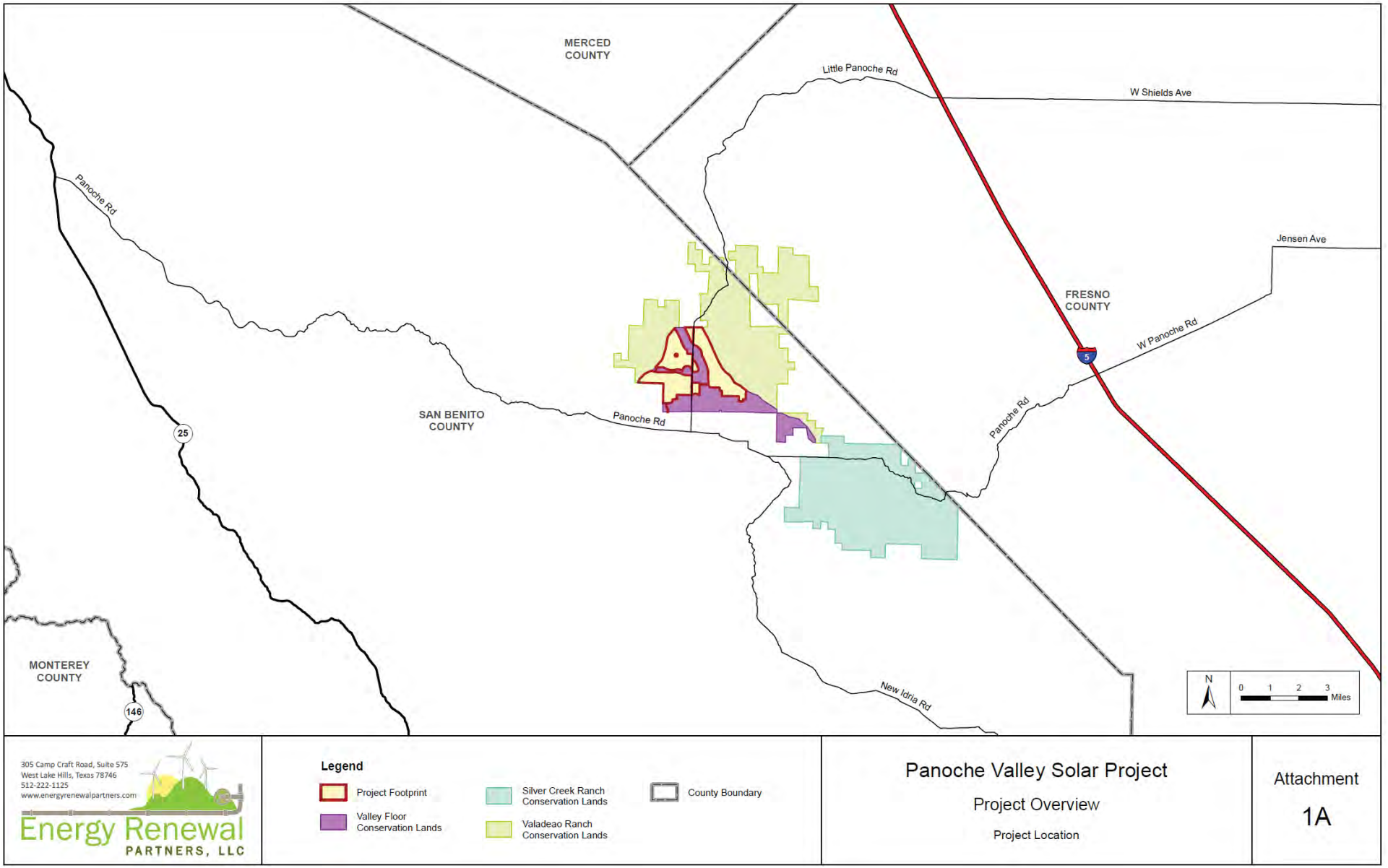
EIR and environmental impacts that are substantially more severe than the impacts that were previously addressed in the 2010 Final EIR.

The County anticipates that the SEIR will analyze whether and to what extent the Project Changes will result in new or more severe impacts relating to the following environmental resource areas:

1. Aesthetics
2. Agricultural Resources
3. Air Quality and Greenhouse Gases
4. Biological Resources
5. Cultural Resources
6. Traffic and Circulation
7. Water Resources
8. Cumulative Impacts

Other sections of the 2010 Final EIR areas may be modified based on SEIR team's analysis and refinements to the Revised Project that may occur subsequent to the publication of this NOP.

## Figure 1A: Solar Project Overview

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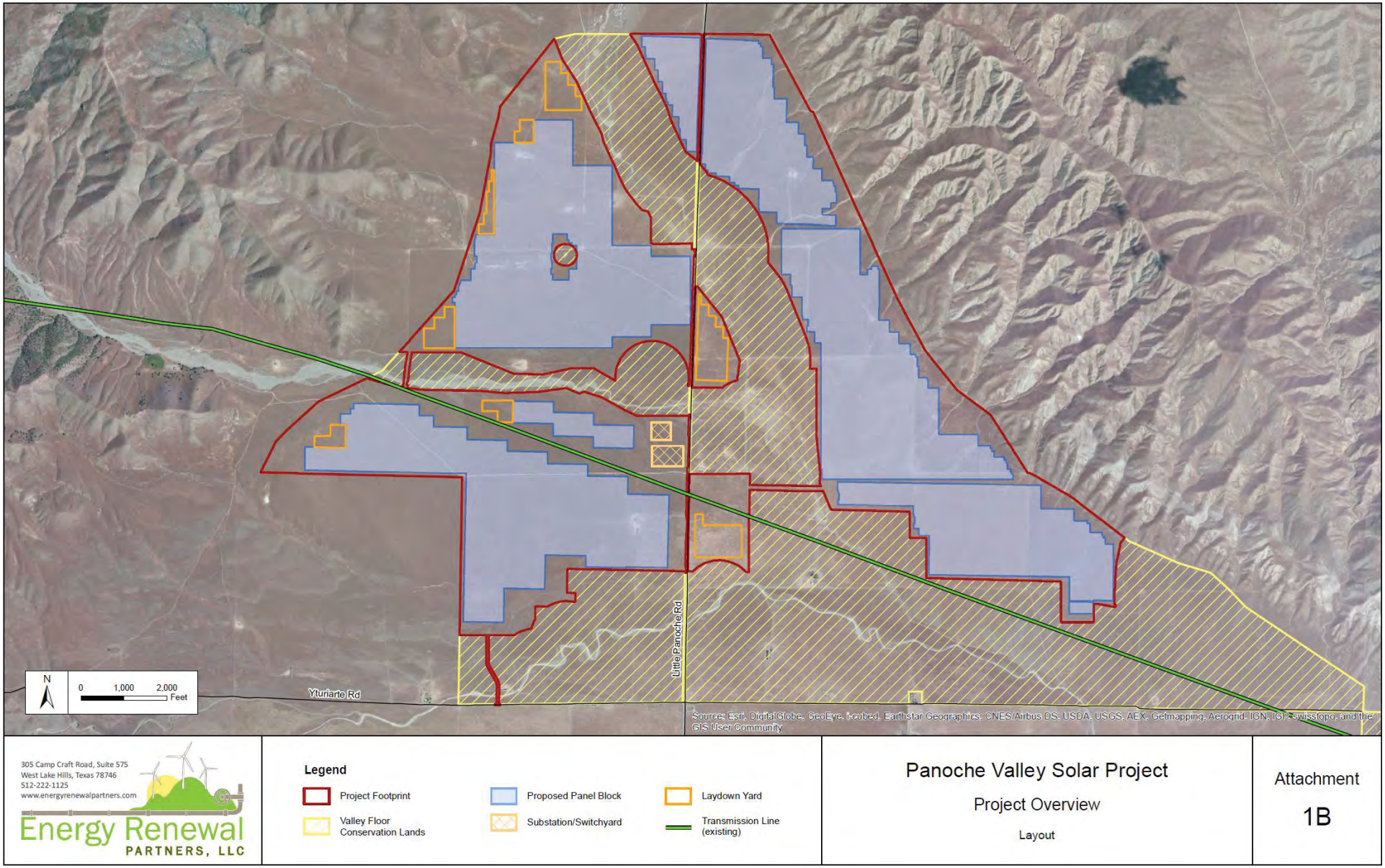
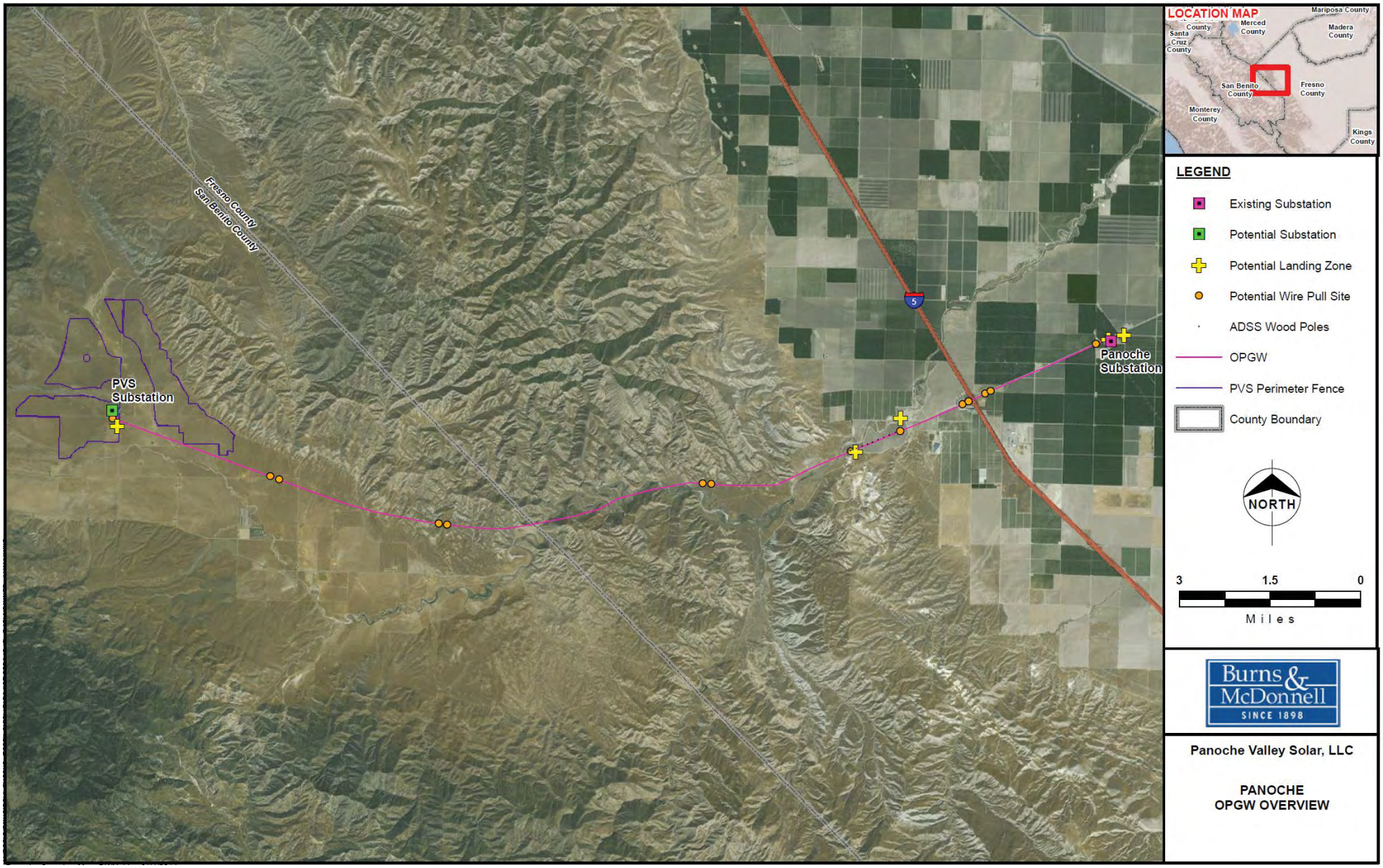
## Figure 1B: Solar Project Location and Components




12107

## Figure 2A: PG&E Upgrades: Overview of Optical Groundwire

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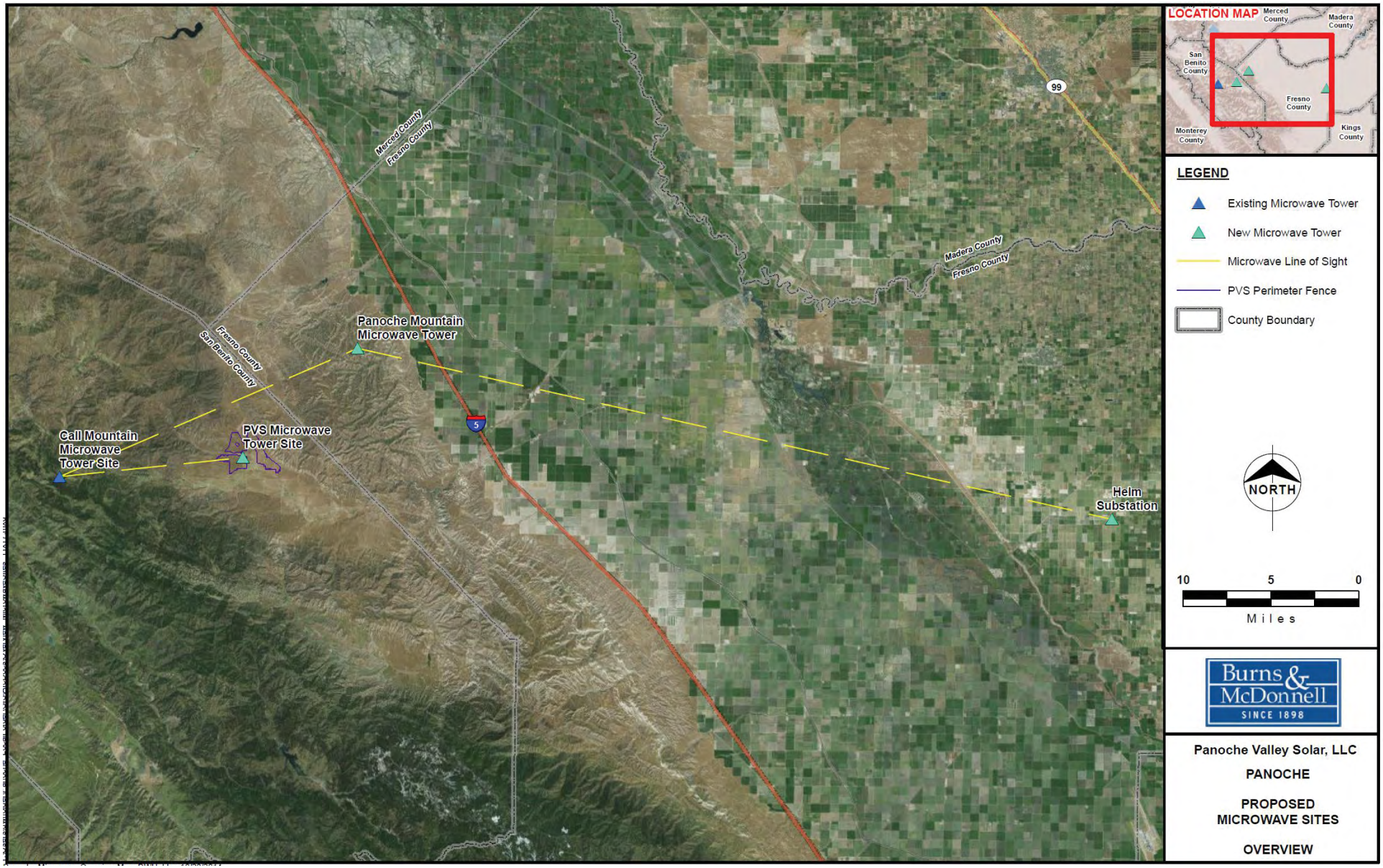
## Figure 2B: PG&E Upgrades: Proposed Microwave Sites



November 23, 2014

Michael Krausie
San Benito County
3224 Southside Road
Hollister, CA 95023

Scott Morgan
OPR State Clearinghouse
PO Box 3044
Sacramento, CA 95814

Delivered via email to: panochesolar@aspeneg.com
Scott.Morgan@opr.ca.gov

RE: **Panoche Valley Solar Farm SEIR NOP Compliance with CEQA – (SCH 2010031008)**

Dear Mr. Krausie and Mr. Morgan:

Thank you for the opportunity to provide scoping comments for the Draft Supplemental Environmental Impact Report (SEIR) being prepared for the Panoche Valley Solar Farm (Project). While reviewing the notice of preparation (NOP) for the SEIR we have observed that the NOP does not comply with the requirements of Section 15082(a)(1) of CEQA Guidelines [14 CCR § 15082(a)(1)]. Specifically, that Section requires:

> *The notice of preparation shall provide the responsible and trustee agencies and the Office of Planning and Research with sufficient information describing the project and the potential environmental effects to enable the responsible agencies to make a meaningful response. At a minimum, the information shall include:*
> *(A) Description of the project,*
> and
> *(C) Probable environmental effects of the project.*

The description of the project provided in NOP circulated on October 30, 2014 includes the following:

***Mitigation Measures.*** *The Applicant is proposing changes to several mitigation measures relating to Air Quality, Biological Resources, and Cultural Resources impacts that were adopted by the County in 2010 based on the results of additional*

**Defenders of Wildlife**
**California Program Office**
1303 J Street, Suite 270
Sacramento, CA 95814
Telephone 916-313-5800
www.defenders.org/california

*biological surveys and best management practices recommended by scientists working in the region, as well as lessons learned from other solar development that has occurred throughout the State since the Project was approved.*

This description fails to identify which of the Air Quality, Biological Resources, and Cultural Resources mitigation measures are proposed to be changed. Nor does it disclose what changes are proposed. Without identification of the mitigation measures or what changes are proposed, there is not sufficient information to enable a meaningful response. Nor does the description discuss probable environmental effects of changing mitigation measures.

Based upon the Project proponent's applications to the California Department of Fish and Wildlife for Incidental Take and Streambed Alteration Permits, it is our understanding that a new emergency access bridge across Panoche Creek is proposed which was not included in the original project approvals. The NOP does not include the proposed bridge and simply describes revisions to project access as follows:

> ***Revised Roadway Network/Circulation***. *In response to Fire Department requirements for emergency access, the previously proposed internal roadway network within the Project footprint has been revised to replace a network of interior access road with a perimeter road around the boundary of the Revised Project site.*

This description fails to disclose the bridge or other potential streambed crossings or their probable environmental impacts. Again, this does not provide sufficient information on the actual project to enable a meaningful response.

For these reasons we respectfully request the NOP be revised to comply with CEQA and recirculated. If you have any questions, please feel free to contact me at (530) 902-1615 or via email at kate@kgconsulting.net

Respectfully submitted,

Kate Kelly
Energy and Land Use Consultant
Defenders of Wildlife

Cc:
Steve Henry, USFWS
Rodger Root, USFWS
Kevin Hunting, CDFW
Julie Vance, CDFW

November 30th, 2014

Michael Krausie, Associate Planner
County of San Benito
Via email to: MKrausie@cosb.us

Re: Revised Panoche Valley Solar Project, Comments on Notice of Preparation for Draft Supplemental Environmental Impact Report (**SCH 2010031008)**

Dear Mr. Krausie,

The following are scoping comments on behalf of the Santa Clara Valley Audubon Society (SCVAS) and the Sierra Club (SC) regarding the Notice of Preparation (NOP) for the Draft Supplemental Environmental Impact Report (SEIR) for the Revised Panoche Valley Solar Project (Revised Project).

The mission of SCVAS is to preserve, protect, and educate our community about native birds and their ecosystems in Santa Clara County and surrounding regions. SCVAS members often use the Panoche Valley area for bird watching and recreation.

The Sierra Club is a national nonprofit organization of approximately 2.5 million members and supporters (approximately 250,000 of whom live in California) dedicated to exploring, enjoying, and protecting the wild places of the earth. The Sierra Club's concerns encompass protecting our lands, wildlife, air and water while at the same time rapidly increasing our use of renewable energy to combat fossil fuels and climate change. Sierra Club members have long advocated for the rare species who call the Panoche Valley home. Many SC members regularly visit the Panoche Valley to bird watch and enjoy nature.

SCVAS and SC commented on the originally proposed Panoche Valley Solar Project (the "Original Project") and associated environmental documents. We opposed the Original Project, and litigated the 2010 approval of the Original Project and the Original EIR. We continue to believe that the project should be rejected based on impacts to the rare and endangered species of the area and regional ecological values.

**The NOP Provides Information that is Too Vague for Meaningful Public Comment**

Other than the overall reduction in project size, the change in construction phasing, and the maps provided, the NOP provides little detail as to the proposed project changes. The NOP thus offers the public an incomplete ability to effectively respond to new or more severe environmental impacts.

As an example, the NOP mentions a revised roadway network but does not provide a map or description of the newly proposed roadways nor the need for any new or expanded bridges or crossings of local waterways. Previously, federal and state resource agencies have raised concerns about the use of particular roadways and possible construction of creek crossings, due to species impacts (see attached documents). Without a map or better description of the Revised Project's proposed changes, we cannot raise issues of particular concern at specific locations. Therefore, we are only able to make a general scoping comment regarding changes to roadway configuration and waterways on and off site.

Revised Project description should provide explicit maps of paved and unpaved roadways, bridges and stream crossings so that the full scope of the project can be evaluated onsite and beyond, and the expected impacts to listed species and habitat can be thoroughly and accurately analyzed. This is especially true for the Blunt-nosed leopard lizard, listed as a "fully protected" species. We request that the SEIR identify alternatives to the proposed roadway pattern that would prevent the take of blunt nosed leopard lizard, as well as reduce any potential impacts to other protected species.

Courts note the fundamental nature of an accurate, detailed project description in allowing valuable public input into the CEQA process. "A curtailed, enigmatic or unstable project description draws a red herring across the path of public input." *County of Inyo v. City of Los Angeles* (1977) 71 Cal.App.3d 185, 198. An NOP is the first opportunity the public has in addressing impacts and mitigation measures proposed in an EIR of any type. In this case, the NOP subverts the public process by providing a project description that is overly vague and incomplete.

**Revised Project Description**

The SEIR must describe the Project design: The SEIR must describe the precise configuration of the array power-blocks, road network, bridges and creek crossings, so that the sufficiency of mitigation measures proposed in the SEIR can be adequately assessed.

The SEIR must fully describe the proposed mitigation lands: The SEIR must provide detailed description of proposed mitigation lands topography and disclose any existing easement agreement conditions that may be incompatible with habitat preservation for the endangered species of Panoche Valley (for example, hunting, off road recreation, farm/ranch related construction, pest management etc.). The SEIR must disclose soil toxicity of mitigation lands and proposed habitat restoration or enhancement areas on mitigation lands or creekside areas.

**Grading**
While the original Project EIR covered grading on the Project site, subsequent correspondence from the Department of Fish and Wildlife (CADFW, June 26, 2014, see attached), leads to the belief that impacts of grading by the Revised Project may be more substantial than those evaluated in the Original EIR. We expect that the SEIR will provide detailed information as to the total extent of grading, potential impacts to vernal pools and waterways, San Joaquin antelope squirrel, American badger, Western burrowing owl, Blunt nosed leopard lizard, Giant kangaroo rat, California tiger salamander, San Joaquin kit fox and other protected species. Please describe any changes to mitigation measures resulting from changes to the Revised Project or from greater project detail than was previously available.

**Biological Buffers**
The SEIR must provide evidence that mitigation is feasible and capable of being implemented and that implementation of buffers is feasible. The Original Project included the following avoidance buffers during construction activities that would be integrated into the Project's design:

- A 100-foot buffer around washes and streams as measures for the top-of bank on both sides of these features.
- A 100-foot buffer around seasonal depressions and known water bodies
- A 22-acre buffer around each point location for the Blunt-nosed leopard lizard
- A 250-foot buffer around nesting Western burrowing owls during the nesting season
- A 150-foot buffer around each occupied Western burrowing owl burrow during the non-breeding season
- A 50-foot buffer around each active Giant kangaroo rat burrow/precinct
- A 50-foot buffer around each active San Joaquin antelope squirrel burrow
- A 200-foot buffer around maternity American badger dens during the pup-rearing season
- A 100-foot buffer around each San Joaquin kit fox den
- A 200-foot buffer around each unoccupied San Joaquin kit fox natal den;
- A 1000-foot buffer around each occupied San Joaquin kit fox occupied natal den.

Please provide information and analysis for the ability of the Revised Project to maintain the numerous buffers contained as mitigation measures in the original EIR. If any buffers are to be changed, please provide explanation for the change and locations where the change would apply. Furthermore, the buffer list above does not include buffer areas that must be established if additional special-status plant and animal species are observed during preconstruction surveys.

Based on the number of buffer zones that are required, it is questionable whether the Revised Project can feasibly be developed or establish a realistic Project design. The SEIR must further evaluate the ability of the Revised Project to maintain adequate buffers given the increased intensity of development proposed during the construction time period. The SEIR must describe how buffers will be prioritized if they cannot all be implemented.

Finally, letters from the CADFW (July 10, 2010; June 26, 2014, see attached) warn hat the proposed buffers are insufficient to avoid take of blunt nosed leopard lizard. Please provide adequate buffers. Please provide pre-construction survey methodology and buffers for California tiger salamander.

**Impacts to Panoche Elementary School students**

Given the shortened nature of the proposed construction period in the Revised Project, the SEIR must provide an analysis of a shorter, more intense period of construction on sensitive receptors at the Panoche elementary school (traffic, air quality, noise, hazards). Please do not use average over lifetime as a measure of harm to the children's health. Please assess impacts during the duration of construction, including impacts to the ability to concentrate and impact to learning during the 18-months of construction.

**Climate Change**

Information regarding climate change impacts on wildlife and habitats has advances significantly in the years since preparation of the initial EIR for this project. We point out, for example, that the National Audubon Society has recently produced a lengthy study on climate impacts on species range and habitat function, finding that climate change could put 314 bird species at risk nationally, primarily from loss of habitat. See http://climate.audubon.org/sites/default/files/Audubon-Birds-Climate-Report-v1.2.pdf.
The latest report by the Intergovernmental Panel on Climate Change (IPCC) dated 2014, also contains updated information on climate change impacts to wildlife and habitats, for example noting that species are moving their ranges at up to three times the speed previously thought, see http://www.ipcc.ch/report/ar5/wg2/.

We expect that the SEIR will note recent research on climate change impacts to birds and wildlife as it relates to both project impacts and management techniques for proposed mitigation lands.

**Transmission Upgrades**

The NOP contains a more detailed description in proposed changes to transmission facilities than did the Original Project EIR (NOP, page 3). Therefore, the SEIR should contain a more detailed analysis of proposed construction or operational impacts associated with these upgrades. In particular, protocol-level surveys for ALL protected species should be performed in areas potentially impacted by construction of these transmission upgrades prior to release of the SEIR, in order that the public may evaluate this more detailed information in relation to the analysis contained in the original EIR. Alternatively, presence of protected species can be assumed, and appropriate construction buffers, avoidance and mitigation measures provided.

If the proposed PG&E upgrades will cross any of the proposed mitigation lands, then the SEIR should disclose and evaluate the impact of these upgrades on the mitigation lands and species in the mitigation lands.

**Cumulative Impacts**

The original EIR analyzed cumulative impacts to biological resources from proposed development in the Panoche Valley vicinity and from Solar Projects with Similar

Biological Resources. The analysis of solar projects with similar biological resources was limited to projects in core recovery areas for the San Joaquin kit fox. Since the original EIR, the two solar projects identified as moving forward in core recovery areas (Topaz, CVSR) have been constructed in the Carrizo core recovery area. The third core recovery area, Kern, has been increasingly degraded by oil and gas development. Due to the degradation of the Carrizo and Kern core recovery areas, satellite recovery areas and other suitable habitat for San Joaquin Kit Fox and associated grassland species have become more important. A number of solar projects have been proposed, and in some cases, have been permitted or constructed in these areas. The SEIR must include in the analysis not only the impacts of oil and gas development in the Kern Core Recovery Area and on areas already considered conserved in the Recovery Plan, but also the impacts of solar projects and other development in satellite recovery areas and other suitable habitat. In addition, the cumulative impacts analysis should consider development that could impact migratory birds and other avian species.

**Hydrology and Water Resources**

Given the shorter construction period for the Revised Project, the SEIR must provide an analysis of a shorter, more intense period of water use on the site as compared to the original EIR. Impacts on groundwater availability for wildlife should be considered. The SEIR must identify all groundwater users (i.e., existing and planned) and rights to water (e.g., irrigation) from the groundwater basin, so that the sufficiency of the aquifer to meet the Project's short and long term water demand can be assessed.

A revised Water Supply Assessment should be included in order to comply with California Water Code Sections 10910-10915. Climate change affects on groundwater recharge should be addressed in the water budget. If recharge decreases over the operational life of the project, then there could be significant impacts on the groundwater resource and existing groundwater users.

The Original Project EIR did not provide hydrologic, hydraulic and geomorphic studies to address flood frequency, stream hydraulics and scour, and stream morphology. Unfortunately, the original Wetland Delineation Report included limited flood frequency analysis on Panoche Creek 12.5 miles downstream of the project site, but was inadequate at estimating flood flows at the project site.

A watershed assessment of the Panoche / Silver Creek watershed (MFG, 1998)[1] has identified that 1) the creeks have experienced dynamic geomorphic change within the last several decades, and 2) sediment loading to downstream areas has been an issue. If not carefully planned, the Revised Project could exacerbate known issues in the watershed downstream of the project site. Thus, more detailed information through hydrologic, hydraulic and geomorphic analyses is needed to inform project layout and ensure floodwaters are not impeded or redirected by project features and do not impact downstream resources.

[1] MFG, Inc. 1998. Panoche / Silver Creek Watershed Assessment Final Report. Prepared for Panoche / Silver Creek Watershed Coordinated Resource Management and Planning Group and the City of Mendota, California.

**Project Necessity**
SCVAS and SC request that the SEIR reevaluate project necessity given the solar and other renewable energy projects that have been constructed or permitted since the drafting of the Project's original EIR. In other words, is this solar facility needed given current and future plans for renewables across the State, and progress in meeting the State's renewable portfolio standard targets?

**Lake Effect**
Please review the article in *Scientific American*, dated August 27, 2014 and entitled "Solar Farms Threaten Birds." See http://www.scientificamerican.com/article/solar-farms-threaten-birds/. That article notes,

> "Much of the problem appears to lie in the "lake effect," in which birds and their insect prey can mistake a reflective solar facility for a water body, or spot water ponds at the site, then hone in on it."

The article goes on to cite a federal report from the National Fish and Wildlife Service Forensic Laboratory[2] in stating, "The diversity of birds dying at these solar facilities, and the differences among sites, suggest that there is no simple 'fix' to reduce avian mortality,"

We assert that new scientific information not available at the time of the original EIR for the Project requires reconsideration of impacts from this lake effect on regional and migratory bird species. Additional mitigation measures should be considered to address this impact.

**California Tiger Salamander**
The California tiger salamander was listed statewide in 2010, after much of the preparatory work for the original EIR was complete. In addition, critical habitat designations for this species are currently being prepared by the US Fish and Wildlife service. The SEIR must determine whether these changes in species status or habitat designations have affected the analysis contained in the original document. In addition, please provide adequate preconstruction surveys and buffers for this species.

**Feasibility of Mitigation Measures**
Given the passage of time and the new information currently available on such topics as solar farm impacts on wildlife, we request that the SEIR re-evaluate the impacts to State and Federal endangered species in the original EIR in order to analyze whether any feasible mitigation measures are currently available to reduce or eliminate those impacts that might not have been available at the time of the initial EIR for the Project. Such an analysis should go beyond those impacts and mitigation measures resulting from changes proposed in the Revised Project to those areas of impact that remain problematic as indicated by resources agencies (CADFW, USFWS).

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[2] Avian Mortality at Solar Energy Facilities in Southern California: A Preliminary Analysis, Rebecca A. Kagan, Tabitha C. Viner, Pepper W. Trail, and Edgard O. Espinoza National Fish and Wildlife Forensics Laboratory (April 7, 2014).

In addition, the NOP states that some of the mitigation measures will be changed. Any changed mitigation measures must be evaluated against the rest of the measures and the Applicant Proposed Measures as well as and 2010 conditions of approval for consistency

**The Proposed CEQA Document Should be a Subsequent rather than a Supplemental EIR**

The use of Supplemental and Subsequent EIRs is addressed in California's Public Resource Code, Section 21166 and CEQA Guidelines, Section 15162. The CEQA Guidelines state where each document is appropriate, noting that a supplement is called for where, "any of the conditions described in Section 15162 would require the preparation of a subsequent EIR," however, "only minor additions or changes would be necessary to make the previous EIR adequately apply to the project in the changed situation." Given the significance of the changes involved in the Revised Project and our expectation that the Revised Project would impose unavoidable, significant impacts to Blunt nosed leopard lizard, Giant kangaroo rat, California tiger salamander and San Joaquin kit fox we assert that these cannot be considered "minor" and thus a Subsequent EIR, as compared to Supplemental EIR, should be conducted for the project.

The NOP lists eight major areas for potential revision to impacts and/or mitigation measures in the SEIR. NOP, page 4. The list, including air quality, water resources, and biology, is so expansive as to justify a fully new EIR be prepared, rather than merely providing supplemental information.

The major proposed change in construction phasing for the Revised Project also adds to the argument that a more thorough document is necessary to fully evaluate the impacts to the species and habitat in question. The up to 18-month timeline proposed would lead to more intense impacts than the proposed Project first covered in the original EIR. Construction related impacts such as on air quality from machinery and grading will inevitably become more severe over this shortened time period. Under a more intense construction schedule, local species may not be able to avoid construction related impacts to the extent that they might have been under a project phased over a longer period of time. In addition, this shorter time period for construction and the reduced project scale call into question many of the proposed Mitigation Measures and Applicant Proposed Measures, all of which should be re-evaluated for effectiveness in avoiding harm to endangered species and the potential of reducing impacts to below significant levels.

As our comments on climate change and the impacts of the "lake effect" of solar farms on migratory birds noted below, we are seeing rapid development in the sciences regarding both climate change impacts to wildlife generally and impacts on avian species from solar farms in particular. Much of the best information in these areas has developed since the original EIR for this project and thus constitutes "new information," warranting a closer look at many of the impacts and mitigation measures analyzed in the original EIR, not just to the proposed changes of the Revised Project. Cumulative impacts should also be re-assessed based on up-to-date information on habitat land remaining in other "core" areas for the recovery of the San Joaquin kit fox and associated grassland species.

The NOP itself appears to recognize the rapid evolution in impact analysis related to solar farms, stating that proposed mitigation measures have changed based on,

> *"…additional biological surveys and best management practices recommended by scientists working in the region, as well as lessons learned from other solar development that has occurred throughout the State since the Project was approved."*

Given this evolving analysis, the major changes proposed in the Revised Project, and the scope of issues to be updated in the SEIR, we assert that the proper document for this stage of project evaluation under CEQA is a Subsequent EIR, rather than Supplemental EIR. We ask that this change be made and a new, revised NOP be circulated in accordance with State law.

**Agency Correspondence**

Since the original EIR was approved, the Project applicant has continued to pursue permits with the California Department of Fish and Wildlife and the US Fish and Wildlife Service. We ask for any correspondence that provides information pertaining to the need for the additional project components and the SEIR, and any correspondence related to biological resources, buffers, easements and other mitigations for impacts on endangered species should be included in the SEIR. Further, we request that the SEIR analyze any potential additional avoidance and mitigation measures contained in that correspondence for whether adoption would be feasible and further reduce potential impacts. Such transparency would help us provide informed comments on the SEIR when published.

– – –

We thank you for the opportunity to provide scoping comment for the Revised Project SEIR. SCVAS and SC maintain our position that this is the wrong project for the Panoche Valley, and we intend to continue to vigorously participate in the environmental review and permitting processes for the Revised Project.

Sincerely,

Sarah K. Friedman

Sarah Friedman,
Senior Campaign Representative
Sierra Club Beyond Coal Campaign

Shani Kleinhaus

Shani Kleinhaus, Ph.D.
Environmental Advocate
Santa Clara Valley Audubon Society

December 1, 2014

Michael Krausie
San Benito County
3224 Southside Road
Hollister, CA 95023
MKrausie@cosb.us
panochesolar@aspeneg.com

RE: Scoping on Draft Supplemental Environmental Impact Report (SEIR) for the Panoche Valley Solar Farm Project ("Project")
SCH 2010031008

Dear Mr. Krausie,

On behalf of the Center for Biological Diversity and Defenders of Wildlife (Conservation Organizations), we submit these comments on the Notice of Preparation on Draft Supplemental Environmental Impact Report (SEIR) for the Panoche Valley Solar Farm Project ("Project"). The Project has been revised to be a 247 MW with a fenced Project footprint of approximately 2,506 acres. Despite the reduction in footprint and megawatts, the proposed project remains of significant concern as described below.

The Conservation Organizations participated in the previous environmental review for the previously proposed Panoche Valley Solar Farm Project. The Project continues to be proposed in an area of critical core habitat for many rare, threatened and endangered species, including the San Joaquin kit fox, giant kangaroo rat, blunt-nosed leopard lizard, California tiger salamander, vernal pool fairy shrimp, mountain plover, golden eagles and many others. Core areas are the last strongholds for plants and animals teetering on the brink of extinction, and are the only places from which recovery of the species can occur. We continue to have grave concerns about any project being proposed in this location. Therefore, we urge the County to carefully evaluate the new project proposal and the impacts that will still result from this proposal on the last vestiges of habitat for some of California's most iconic and imperiled plants and animals.

**Defenders of Wildlife**
**California Program Office**
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www.defenders.org/california

**Center for Biological Diversity**
8033 Sunset Blvd., #447
Los Angeles, CA 90046
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The previous EIR failed to provide adequate information on these species (e.g. Center for Biological Diversity's letter dated 8-31-2010, Defenders of Wildlife's letter dated 8-31-2010). Indeed on November 23, 2014, Defenders of Wildlife submitted a letter documenting all the ways the Notice of Preparation for the SEIR was not in compliance with CEQA. Additionally, the Santa Clara Valley Audubon Society and the Sierra Club submitted comprehensive scoping comments on the SEIR, and we incorporate those comments herein.

At least four years have passed since the previous EIR was certified by the County. In the intervening years, many changes have occurred for the potentially impacted species and new knowledge has been gained related to species and solar projects. Updated special status species studies are required to identify:

- the adequacy of surveys and their compliance with wildlife agency survey protocols
- density of species that use or reside on the proposed site
- wildlife connectivity and movement not limited to the Panoche Valley, but in a regional context, especially in light of ongoing climate impacts and the need for species to adapt to climate change.

We encourage full transparency in the environmental review, and as per the NOP, we request that not only the "results of additional biological surveys" be included as appendices to the SEIR but also the field data report.

Regarding "lessons learned from other solar development that has occurred throughout the State," one unforeseen impact to migratory birds and listed avian species from industrial-scale solar development are injury and mortality from the so-called "lake effect," where avian species "see" the solar panels as water bodies and try to land on them, resulting in mortality, injury or stranding. This impact was not addressed in the original EIR and must be addressed in the SEIR because it is a "new" impact that affects avian species.

It appears that the proposed "wire pull areas" are located in the proposed mitigation lands. The SEIR must fully disclose the impacts and mitigation to these proposed mitigation lands, which are supposed to off-set impacts from the proposed project.

In addition as California reaches its Renewable Portfolio Standard the state of renewable energy in general in California has changed. For example, in just two years, between 2010 and 2012, manufacturers were able to cut the average price of a solar module in half. In terms of the price of the energy, recent trends are finding in some instances, that home solar installations are generating electricity at lower prices than the grid's retail prices can deliver[1].

[1] http://lasustainability.org/ab-2188-new-state-bill-clears-permitting-roadblocks-for-solar-energy/

Additionally, new areas for renewable energy development are being established including the Westlands Solar Park. Therefore, the SEIR needs to include alternatives for distributed generation, small-scale locally-produced solar installation, and alternatives such as Westlands Solar Park. These alternative approaches would vastly reduce the impact to the rare and endangered species, greatly reduce the mitigation costs associated with development in critically endangered species habitat and eliminate the need for upgrades to the transmission facilities.

Thank you for the opportunity to submit these comments. Please include each of our groups on the interested public list for this project. If you have any questions, please contact Kim Delfino at (916) 313-5800 x1 or via email at kdelfino@defenders.org or Ileene Anderson at 323-654-5943 or via email at ianderson@biologicaldiversity.org

Ileene Anderson
Biologist
Center for Biological Diversity

Kim Delfino
California Director
Defenders of Wildlife

cc:
Steve Henry, USFWS, steven_s_henry@fws.gov
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The Nature Conservancy
Protecting nature. Preserving life.™

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nature.org

December 1, 2014

Michael Krausie
Associate Planner
County of San Benito

Via Email: MKrausie@cosb.us, panochesolar@aspeneg.com

Dear Mr. Krausie:

On behalf of the California Chapter of The Nature Conservancy, thank you for the opportunity to comment on the Notice of Preparation (NOP) of a Draft Supplemental Environmental Impact Report (SEIR) for the Panoche Valley Solar Farm Project (project) proposed by Panoche Valley Solar LLC in San Benito County. As a science-based organization and one that is deeply engaged in the statewide discussion of renewable energy facility siting and natural resource conservation, The Nature Conservancy carefully reviewed the NOP for the SEIR with particular emphasis on its consideration of biological resources.

**Introduction**

The Nature Conservancy ("Conservancy") is a global, non-profit organization dedicated to the conservation of biodiversity. We seek to achieve our mission through science-based planning and implementation of conservation strategies that provide for the needs of people and nature. The Conservancy has been actively involved in planning for renewable energy within the Western San Joaquin Valley of California. Most recently, the Conservancy has produced the report, *Western San Joaquin Valley Least Conflict Solar Energy Assessment*[1]. The results of this assessment, including a web map, are publicly available on the Conservancy's Science for Conservation website (link).

The Conservancy strongly supports the development of renewable sources of energy to mitigate the increasing threat of climate change. However, if not located, built, and operated responsibly, energy projects can negatively impact biodiversity, harm wildlife and their important habitats, and diminish water resources. The Conservancy supports siting renewable energy facilities in locations where ecological impacts can be minimized, contained, and mitigated. The Conservancy recognizes that even though the NOP of the SEIR indicates that the project size has been reduced from 420 megawatts (and 4,885 acres) to 247 megawatts (and 2,506 acres) the project will have substantial, significant and unmitigable impacts to local populations of federally listed giant kangaroo rat, blunt-nosed leopard lizard, and San Joaquin kit fox populations in the Panoche Valley.

The Panoche Valley is significant as rich habitat for a suite of sensitive San Joaquin Valley species. These species have been in decline throughout their ranges due largely to increased fragmentation and loss of

[1] Butterfield, H.S., D. Cameron, E. Brand, M. Webb, E. Forsburg, M. Kramer, E. O'Donoghue, and L. Crane. 2013. Western San Joaquin Valley least conflict solar assessment. Unpublished report. The Nature Conservancy, San Francisco, California. 27 pages. http://scienceforconservation.org/downloads/WSJV_Solar_Assessment

habitat, including from recent solar energy development. The Panoche Valley is designated by the United States Fish and Wildlife Service (USFWS) as one of the three core population areas, in addition to Carrizo Plain and the natural areas of Western Kern County, essential to recovery of these San Joaquin Valley species. The results of The Conservancy's 2013 *Western San Joaquin Valley Least-Conflict Solar Energy Assessment* have identified the Panoche Valley as high conservation value. Impacts from the Panoche Valley Solar Farm Project will have cumulative impacts far beyond the Panoche Valley that could prevent recovery of these species and will threaten large conservation investments that have been made to support recovery of these species over the last 30+ years.

**Biological Resources**

According to the NOP of the SEIR, Panoche Valley Solar LLC plans to construct a 247 megawatt solar photovoltaic power plant on 2,506 acres on the floor of Panoche Valley. The openness and flatness of the Panoche Valley are qualities that are indispensable for the survival of a suite of San Joaquin Valley species. Among those species dependent on valley floor habitat are federally endangered San Joaquin kit fox, giant kangaroo rat and blunt-nosed leopard lizard; state threatened San Joaquin antelope squirrel; candidate for federal threatened listing mountain plover; and state species of concern Western burrowing owl.

The Nature Conservancy recommends that San Benito County include the results of all field surveys, in the SEIR and use them as a biological baseline in the SEIR when analyzing project-specific and cumulative impacts, including impacts to population connectivity and movement, for species with the potential to be impacted through implementation of the project including, but not limited to: San Joaquin kit fox, giant kangaroo rat, and blunt-nosed leopard lizard.

**New Biological Resources Data**

In addition to the data collected by the project applicant's contractors (e.g., field surveys), the SEIR should include recent species-specific biological resource data, in the biological baseline when analyzing project-specific and cumulative impacts. Specifically, the SEIR should incorporate biological resource monitoring and current research data from: giant kangaroo rats at the Carrizo Plain (research leads: Laura Prugh, University of Alaska-Fairbanks, and Justin Brashares, UC-Berkeley) and Panoche Valley (research lead: Tim Bean, Humboldt State University), San Joaquin kit fox at the Carrizo Plain (research lead: Bob Stafford, California Department of Fish and Wildlife), and blunt-nosed leopard lizards across its full species range (research leads: Barry Sinervo and Joseph Stewart, UC-Santa Cruz, and Mike Westphal, Bureau of Land Management).

The most recent monitoring and research data for all of these species suggests that the current drought has pushed populations to their lowest levels in the past 30+ years. Recent climate change extinction modeling for blunt-nosed leopard lizards[2] suggests that areas like the Panoche Valley will likely serve even more important recovery roles, as areas previously suitable become unsuitable during extended drought. Given the current stress these species are experiencing, further reducing habitat and fragmenting core recovery areas could be a tipping point that could prevent species recovery. For these reasons, the impact analysis should:

[2] Research leads: Barry Sinervo and Joseph Stewart, UC-Santa Cruz, and Mike Westphal, Bureau of Land Management

- Assess the viability of populations of giant kangaroo rats, San Joaquin kit fox, and blunt-nosed leopard lizards, considering population size, range, existing and proposed land uses (cumulative effects), drought-induced effects, and the project's direct and indirect habitat impacts.
- Evaluate the cumulative impacts to long-term genetic viability and recovery of species whose populations may be cut off from other core populations as a result of the project.
- Assess the ability to achieve recovery actions[3] for the blunt-nosed leopard lizard in the Panoche Valley, given the results of recent climate change modeling for the species.

**Cumulative Impacts**

In the intervening years since the EIR was certified by San Benito County, conditions have changed, and a number of solar photovoltaic power plants have been proposed, approved, or developed within the region. The SEIR prepared for the project must comprehensively address and quantify cumulative impacts to special-status species, including from other projects along the western edge of the San Joaquin Valley, such as the Wright Solar Project, Quinto Solar Project, California Valley Solar Ranch, Topaz Solar Farm, and the California Flats Solar Project.

**Biological Mitigation Measures**

With over 720 staff scientists and a long history of conservation science leadership, the Conservancy applies its analysis of project mitigation scenarios the same systematic and analytical approach we have used to plan and assess our conservation strategies, recommendations, and actions. Bringing to bear our expertise, visits to the site, a thorough review of Panoche Valley Solar LLC's biological studies, and additional modeling of kit fox habitat, it is clear to the Conservancy that no project with a footprint in the Panoche Valley can be sufficiently mitigated and result in no net loss to endangered species populations.

The NOP does not provide sufficient detail on the proposed changes to the biological mitigation measures for meaningful public comment. The SEIR should clearly articulate the proposed changes to the biological mitigation measures and should demonstrate how the mitigation measures address the direct, indirect, and cumulative impacts of the project.

**Alternatives**

The California renewable energy market has matured considerably since the EIR was certified by San Benito County. Therefore, the SEIR should evaluate at least two new alternatives:

- A distributed generation alternative: In the four years since the EIR was certified, distributed generation has made considerable advancements in deployment: over 1,000MW of capacity has been added through the California Solar Initiative[4] and contracts representing 739MW of capacity have been executed through the Renewable Auction Mechanism (a simplified market-based procurement mechanism for renewable distributed generation (DG) projects greater than 3 MW and up to 20 MW)[5].
- A utility-scale alternative on lands of low biodiversity conservation value: In 2013, the Conservancy's *Western San Joaquin Valley Least-Conflict Solar Energy Assessment* identified 435,601

[3] Recovery Plan for Upland Species of the San Joaquin Valley, California, USFWS 1998.
[4] http://www.californiasolarstatistics.ca.gov/
[5] http://www.cpuc.ca.gov/PUC/energy/Renewables/hot/Renewable+Auction+Mechanism.htm

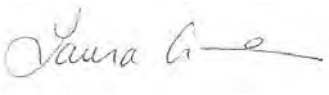
acres of Low Biodiversity Conservation Value / Salt-affected lands where solar could be sited where neither biodiversity nor agricultural values are unnecessarily impacted.

**Conclusion**

In closing, the Conservancy remains supportive of the development of renewable energy in places that meet renewable energy development needs and also ensure that regional conservation values are retained and enhanced. In order to meet these two goals, it is necessary to avoid siting facilities in places of critical ecological importance. Regrettably, the Panoche Valley Solar Project is proposed for an area that is rich habitat for a suite of sensitive species, many of which are listed as threatened or endangered, and the mitigation strategy does not compensate for the impacts to the species. We remain very concerned with the impact that this project will have on the suite of species – including the impact that it may have range-wide for bellweather species such as the kit fox. Therefore, we urge San Benito County to take actions that will contribute to the recovery of the suite of sensitive San Joaquin Valley species represented in the species-rich Panoche Valley, rather than lead to the further decline of the species. We urge the County to carefully consider the impacts to the irreplaceable biological resources, to thoroughly analyze the considerations raised in this letter, and to clearly articulate the findings in the SEIR.

Thank you again for the opportunity to provide comments on the NOP of the SEIR.

Sincerely,



Laura Crane
Director, California Renewable Energy Initiative
The Nature Conservancy
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(415) 418-6513

CC:
Dave Hacker, CDFW (via email)
Julie Vance, CDFW (via email)
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Steve Henry, USFWS (via email)
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November 18, 2014

SBt-25-39.53
SCH# 2010031008

Michael Krausie
San Benito County Planning
2301 Technology Parkway
Hollister, CA 95023

Dear Mr. Krausie:

COMMENTS TO PANOCHE VALLEY SOLAR FARM PROJECT NOTICE OF PREPARATION

The California Department of Transportation (Caltrans), District 5, Development Review, has reviewed the above referenced project and offers the following comments in response to your summary of impacts.

1. Caltrans supports local planning efforts that are consistent with State planning priorities intended to promote equity, strengthen the economy, protect the environment, and promote public health and safety. We accomplish this by working with local jurisdictions to achieve a shared vision of how the transportation system should and can accommodate interregional and local travel.

2. To ensure the traffic study in the Draft EIR includes the information needed to analyze the impacts (both cumulative and project-specific) of this effort, it is recommended that the analysis be prepared in accordance with the Department's *"Guide for the Preparation of Traffic Impact Studies."* An alternative methodology that produces technically comparable results can also be used.

3. Because we are responsible for the safety, operations, and maintenance of the State transportation system, our Level of Service (LOS) standards should be used to determine the significance of the project's impact. We endeavor to maintain a target LOS at the transition between LOS C and LOS D on all State transportation facilities.

4. Our future comments to this, and any subsequent EIR for the project, will stress the importance of using the Association of Monterey Bay Area Governments Model for traffic analysis, and to include all impacted transportation agencies early and often in the discussions.

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5. The traffic study should include information on existing traffic volumes within the study area, including the State transportation system, and should be based on recent traffic volumes less than two years old. Counts older than two years cannot be used as a baseline. Feel free to contact us for assistance in acquiring the most recent data available.

6. The methodologies used to calculate the LOS should be consistent with the methods in the current version of the Highway Capacity Manual. All LOS calculations should also be included in the Draft EIR as an appendix made available for review.

7. At any time during the environmental review and approval process, Caltrans retains the statutory right to request a formal scoping meeting to resolve any issues of concern. Such formal scoping meeting requests are allowed per the provisions of the California Public Resources Code Section 21083.9 [a] [1].

8. Lastly, since there could potentially be impacts to the transportation system in Fresno County, we will be coordinating this review with our Caltrans District 6 counterparts.

If you have any questions, or need further clarification on items discussed above, please don't hesitate to call me at (805) 542-4751.

Sincerely,

JOHN J. OLEJNIK
Associate Transportation Planner
District 5 Development Review Coordinator
john.olejnik@dot.ca.gov

cc: Dave Padilla (D6 IGR)

# Appendix 2

## Panoche Solar Farm Traffic Study

November 2014

12129

HEXAGON TRANSPORTATION CONSULTANTS, INC.

# Panoche Solar Farm Traffic Study

Prepared for:

**Aspen Environmental Group**

**November 13, 2014**

Hexagon Office: 8070 Santa Teresa Boulevard, Suite 230
Gilroy, CA 95020
Hexagon Job Number: 14RD20
Phone: 408.846.7410

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# 1. Introduction

Hexagon Transportation Consultants, Inc. has completed this traffic study for a proposed solar farm in the Panoche Valley of San Benito County. The study was completed in response to concerns regarding safety and effects of construction traffic, primarily truck activity, at intersections and roadways serving the project site. The purpose of the traffic study is to identify potential safety and operational issues on the roadways and to explore improvement options to address those issues.

The study focuses on Panoche Road, between SR 25 and Interstate 5, and Little Panoche Road between Panoche Road and Interstate 5. The study included an evaluation of roadway geometrics, pavement conditions, vehicular speeds, vehicle composition, sight distance, and existing signage along each of the roadways. Intersection levels of service analysis and signal warrant checks also were completed at the intersections of SR 25 and Panoche Road and Panoche Road and Little Panoche Road.

## Proposed Solar Farm Operations and Access

The project as proposed will consist of a 247-megawatt solar energy generation facility on a 2,506-acre site located along Little Panoche Road as shown in Figure 1.

The workforce at the project site will vary based on the work activities conducted and time of year. However a peak of approximately 550 employees per day, that includes supervisors and office staff, is expected on site at any one time during the construction of the solar farm. During the construction period, employees will work a 12-hour daytime shift with a maximum of 50 employees on site at night. Nighttime work hours would occur between 9:00 PM and 5:00 AM. Nighttime activities would be restricted to minimize impacts to biological resources, sensitive receptors, and land use and recreationalists. These activities would be limited to the following:

- minor non-ground-disturbing activities such as commissioning and maintenance activities to be performed when PV arrays are not energized
- interior use of the operations and maintenance facility
- unanticipated emergencies (defined as an imminent threat to life or a significant property interest), including non-routine maintenance that requires immediate attention
- special status species impact avoidance and minimization activities and research (e.g., giant kangaroo rat trapping and San Joaquin kit fox radio telemetry), and
- security patrols.

No ground disturbing activities (including but not limited to grading, pile driving, trenching) would take place at night.

Employees would originate from the primary workforce areas of Hollister/San Benito County and Fresno County which are located between 10-60 miles from the site. It is expected that the employees would

carpool at a rate equivalent to 1.2 employees per vehicle. It is anticipated that approximately 100 large trucks would access the site on a daily basis to deliver material and equipment to the site. A few trucks containing oversized loads also will access the site, but will be infrequent when compared to daily truck traffic. Delivery of material and equipment are anticipated to be delivered from within a 100-mile radius (occasionally from a greater distance) but on the average of less than 100 miles away. The types and estimated daily trips anticipated to be generated by the project during construction of project is presented in Table 1.

Access to the site will be provided exclusively from Little Panoche Road. Staff will utilize Panoche Road to and from SR 25 and Little Panoche Road to and from Interstate 5. Truck traffic will be restricted to the use of Little Panoche Road to and from Interstate 5.

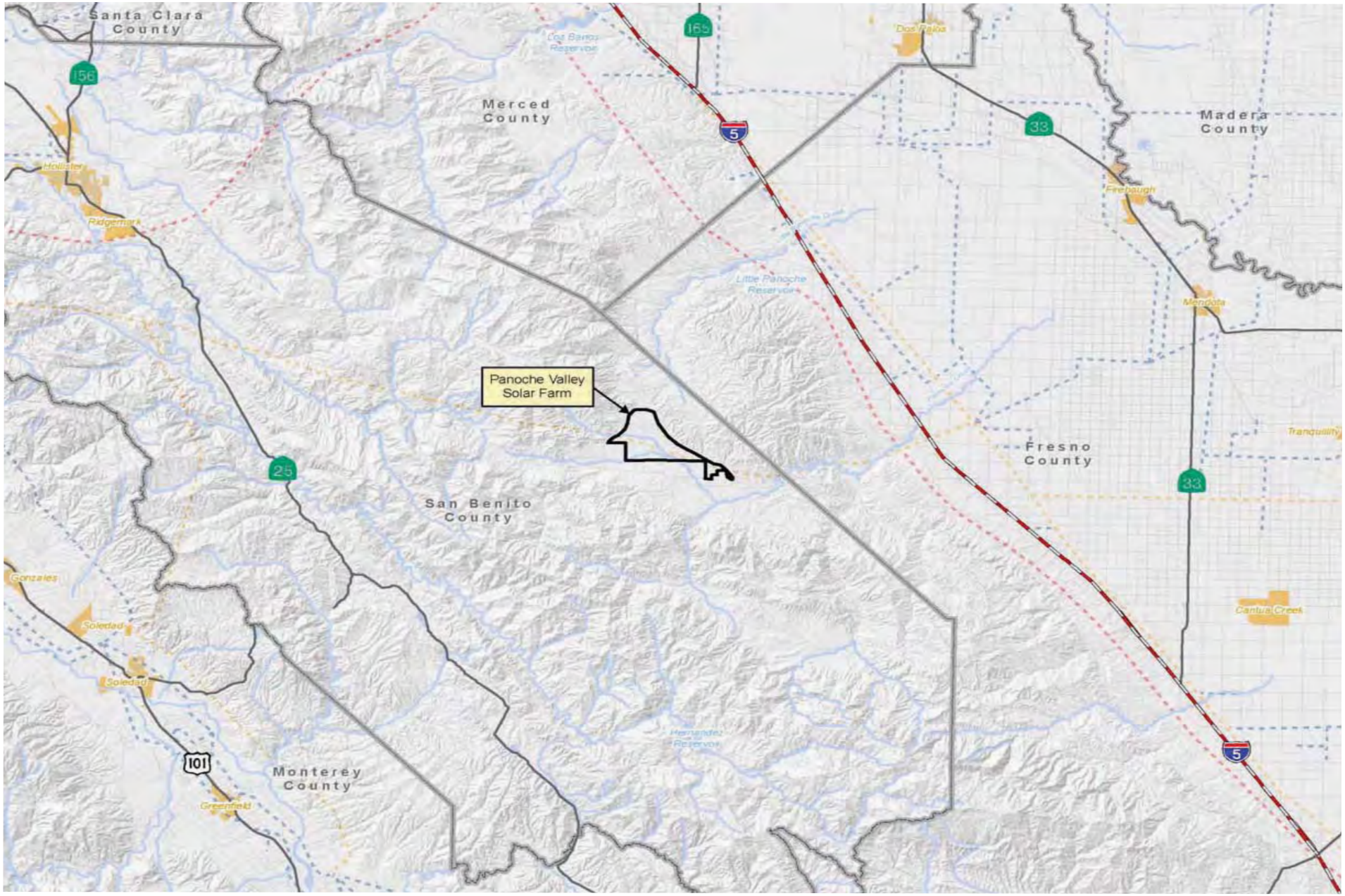


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Figure 1

# Site Location

Panoche Valley Solar Farm

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**Table 1**
**Project Trips and Origins**

| | Approximate Distance[1] | Daily Trips |
|---|---|---|
| Employees | ~10-60 miles | 550 |
| Employee Daily Trips[2] | | 950 |
| Daily Material Delivery | ~40-100 miles | 200 |
| **Total Daily Trips** | | **1150** |

Source: Workforce, work shift, and material delivery information provided by project applicant and includes; Peak workforce of 550 employees and 100 truck material deliveries per day.

Notes:

[1] Distances assumed from a city of residence, port of entry, or manufacturing site to the project.

[2] Assumes carpool rate of 1.2 employees per vehicle.

# 2. Existing Conditions

The existing geometrics and traffic patterns of the study roadways were measured and observed in the field. Traffic volume, vehicle composition and speed data also were collected on each of the roadways along with peak hour counts at critical intersections. The existing geometry and traffic characteristics of each roadway are discussed in this chapter.

## Roadway Geometrics and Field Observations

### *Panoche Road*

Panoche Road is a two-lane county roadway that generally runs in an east-west direction and extends from SR 25 in Paicines to Interstate 5 in Fresno County. Pavement ends along Panoche Road approximately 6 miles east of Little Panoche Road and the roadway changes designation to Jackass Grade. The unpaved grade traverses mountainous terrain for approximately 10 to 15 miles east towards Interstate 5. Pavement once again begins approximately 1.25 miles west of Interstate 5.

Though the roadway connects SR 25 and Interstate 5, the roadway is not intended to serve as a link between the highways. The primary purpose of Panoche Road is to provide access to adjacent properties of the roadway. The pavement width of Panoche Road at approximately 1,000 ft. east of SR 25 was measured to be 23 feet with centerline striping and no shoulders. The pavement on Panoche Road narrows to generally 20 feet in width as it traverses east with some sections as narrow as 18 feet with no centerline striping through its mountainous sections. The pavement width was measured to be 20 feet wide with one foot shoulders 1,000 feet west of Little Panoche Road. Though shoulders are not provided along the extent of Panoche Road some sections do have clear zones of dirt. At some points through the mountainous section of the roadway, slopes, rocks and trees are located immediately adjacent to the roadway.

Approximately 15 miles east of SR 25, Panoche Road traverses mountainous terrain. The horizontal alignment of much of the roadway through the mountain results in sharp curves with poor sight distance due to slopes and vegetation obstructing the view of both travel ways. There are several narrow bridges along Panoche Road that provide as little as 14 feet of travel way that does not provide adequate width for two-way travel. Portions of the roadway are also traversed by water (streams/creeks); therefore the roadway may be impassible during seasonal rain. The pavement conditions along Panoche Road vary with some sections in poor condition and deteriorating.

### *Little Panoche Road*

Little Panoche Road is also a two-lane county roadway that extends northeast from Panoche Road to Interstate 5. A full access interchange is provided at its junction with Interstate 5. Little Panoche Road was measured to be 20 feet in width with one foot shoulders approximately 1,000 feet north of Panoche

Road. Approximately four miles north of Panoche Road, Little Panoche Road traverses mountainous terrain and pavement width narrows to as little as 16 feet with no shoulders. Though shoulders are not provided along the majority of Little Panoche Road, there is clear zone provided throughout.

Sight distance along Little Panoche Road is adequate since its horizontal alignment is generally straight with very little vegetation. Though sharp curves are located along the roadway views from both lanes are unobstructed. Pavement along Little Panoche Road is generally in fair condition, but a five mile segment beginning four miles north of Panoche Road and traversing the mountainous terrain is in very poor condition. There is temporary signage in place warning of the poor pavement conditions.

## *Existing Signage*

The location of posted speed and safety signs along the roadways were noted. Both roadways are adequately signed with warning and advisory curve speed signs in advance of sharp curves.

## *Traffic Volumes and Vehicle Composition*

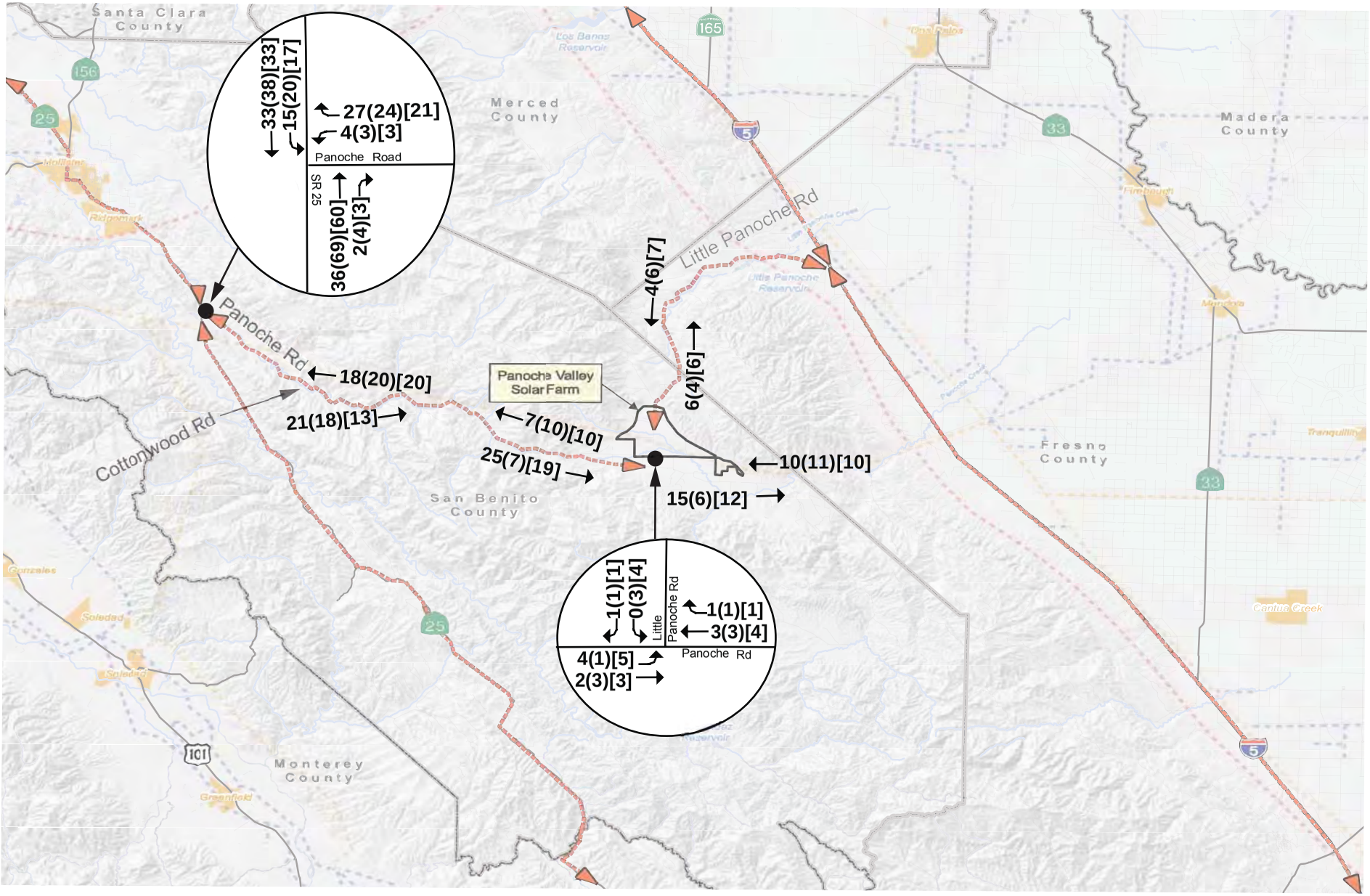
Traffic counts were collected in March 2010 when this traffic analysis was begun. The traffic study is now being completed after being placed on hold for several years. New 2014 counts were not collected at the study facilities since there has been no development in the area that would result in a significant change in traffic conditions on study facilities. The study facilities also do not provide access to major developed areas.

Twenty-four-hour traffic volume data was collected at four locations along Panoche and Little Panoche Roads: (A) Little Panoche Road, north of Panoche Road, (B) Panoche Road, east of Little Panoche Road, (C) Panoche Road, west of Little Panoche Road, and (D) Panoche Road, east of Cottonwood Road. The collected data indicate daily volumes ranging between 66 and 322 vehicles per day and peak bi-directional volumes ranging from 7-38 vehicles during the AM, PM and Mid-day peak hours. Table 2 and Figure 2 present the peak hour volumes along Panoche and Little Panoche Roads. Since traffic signals and other control devices are not located along either roadway, the roadways have the capacity to serve 600-1,200 vehicles per hour. Therefore, the existing peak hour volumes along the roadways are well within the service capacities of the roadways.

In addition, twenty-four-hour vehicle composition data was also collected along Panoche and Little Panoche Roads at the same locations that volume data was collected. Table 3 shows a summary of vehicle composition traveling along each of the roadways. Based on the collected data, 10 (15.2%) daily vehicles traveling along Little Panoche Road are classified as trucks (heavy vehicles) with 3 or more axles. The composition of heavy trucks along Panoche Road ranges between 59 (17.5%) and 66 (43.1%) daily vehicles. Though the composition of truck traffic along each of the roadways is large compared to typical percentages on local roadways of 2-5%, the heavy trucks have a negligible effect on roadway operations due to the very low auto volumes along each of the roadways.

## *Vehicle Speed*

Twenty-four-hour vehicle speed data was collected at the same four locations identified above. There is no posted speed limit along either of the roadways, thus the speed limit for each roadway is 55 mph. The 85$^{th}$ percentile is considered to be the prevailing speed, the speed at which vehicles generally travel under optimum pavement, weather, visibility and traffic volume. Table 4 summarizes vehicular speed along Panoche and Little Panoche Roads. Based on the collected data, the 85$^{th}$ percentile speed of vehicles traveling along Panoche Road at the three count locations ranges between 57 mph and 66 mph. The average 85$^{th}$ percentile speed along Panoche Road is 61 mph. The 85$^{th}$ percentile speed of vehicle traveling along Little Panoche Road is 55 mph. Thus, data indicates that the majority of vehicles traveling along each of the roadways are traveling faster than the 55 mph speed limit. Guidelines require that the posted speed limit be established at the nearest 5 mph increment to the measured 85$^{th}$ percentile speed. Thus, the posted speed limit would need to be 60 mph based on the calculated 85$^{th}$ percentile speed. However, the guidelines do allow for a reduction in speed of 5 mph based upon safety concerns and roadway conditions. Therefore, the existing 55 mph speed limit along the corridor is adequate.




## LEGEND

XX(XX)[XX] = AM(PM)[Midday] Peak-Hour Volumes

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Figure 2

# Existing Traffic Volume Data

Panoche Valley Solar Farm

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**Table 2**
**Existing Average Daily Traffic**

| Location | Direction[1] | Existing Conditions ADT[2] | AM Peak[3] | PM Peak[4] | Mid-Day Peak[5] |
|---|---|---|---|---|---|
| (A) Little Panoche Road, North of Panoche Road | NB | 32 | 6 | 4 | 6 |
| | SB | 34 | 1 | 6 | 5 |
| | ***Total*** | ***66*** | ***7*** | ***10*** | ***11*** |
| (B) Panoche Road, East of Little Panoche Road | EB | 76 | 15 | 5 | 12 |
| | WB | 76 | 10 | 11 | 10 |
| | ***Total*** | ***152*** | ***25*** | ***16*** | ***22*** |
| (C) Panoche Road, West of Little Panoche Road | EB | 95 | 25 | 6 | 19 |
| | WB | 81 | 7 | 10 | 10 |
| | ***Total*** | ***176*** | ***32*** | ***16*** | ***29*** |
| (D) Panoche Road, East of Cottonwood Road | EB | 159 | 21 | 18 | 13 |
| | WB | 163 | 17 | 20 | 20 |
| | ***Total*** | ***322*** | ***38*** | ***38*** | ***33*** |

Notes:
[1] Direction of travel along Panoche Road and Little Panoche Road
[2] ADT = Daily Volume
[3] Highest AM peak-hour volume of the two surveyed dates (6:00 AM - 9:00 AM)
[4] Highest PM peak-hour volume of the two surveyed dates (3:00 PM - 6:00 PM)
[5] Highest mid-day peak-hour volume of the two surveyed dates (11:00 AM - 2:00 PM)

**Table 3**
**Existing Vehicular Composition**

| Location | Class | Both Directions Existing Conditions Volume[1] | Ratio |
|---|---|---|---|
| (A) Little Panoche Road, North of Panoche Road | A | 33 | 50.0% |
| | B | 23 | 34.8% |
| | C | 10 | 15.2% |
| | ***Total*** | ***66*** | ***100.0%*** |
| (B) Panoche Road, East of Little Panoche Road | A | 45 | 29.6% |
| | B | 41 | 27.0% |
| | C | 66 | 43.4% |
| | ***Total*** | ***152*** | ***100.0%*** |
| (C) Panoche Road, West of Little Panoche Road | A | 54 | 30.7% |
| | B | 57 | 32.4% |
| | C | 65 | 36.9% |
| | ***Total*** | ***176*** | ***100.0%*** |
| (D) Panoche Road, East of Cottonwood Road | A | 134 | 41.6% |
| | B | 129 | 40.1% |
| | C | 59 | 18.3% |
| | ***Total*** | ***322*** | ***100.0%*** |

Notes:
[1] 24-hour total volume, both directions.

| Class | Types |
|---|---|
| A | Motorcycles and Passenger Cars |
| B | 2-Axle Bus and Medium Sized Trucks |
| C | 3-Axle and Larger Trucks |

**Table 4**
**Existing Vehicular Speed Data**

| Location | Speed | Both Directions Volume[1] | Ratio | |
|---|---|---|---|---|
| (A) Little Panoche Road, North of Panoche Road | 0 - 25 mph | 1 | 1.5% | |
| | 25 - 45 mph | 21 | 31.8% | |
| | >45 mph | 44 | 66.7% | |
| | Total | 66 | 100% | |
| | 85th Percentile Speed = | | 55 | MPH |
| (B) Panoche Road, East of Little Panoche Road | 0 - 25 mph | 2 | 1.3% | |
| | 25 - 45 mph | 56 | 36.8% | |
| | >45 mph | 94 | 61.8% | |
| | Total | 152 | 100% | |
| | 85th Percentile Speed = | | 61 | MPH |
| (C) Panoche Road, West of Little Panoche Road | 0 - 25 mph | 9 | 5.1% | |
| | 25 - 45 mph | 79 | 44.9% | |
| | >45 mph | 88 | 50.0% | |
| | Total | 176 | 100% | |
| | 85th Percentile Speed = | | 57 | MPH |
| (D) Panoche Road, East of Cottonwood Road | 0 - 25 mph | 6 | 1.9% | |
| | 25 - 45 mph | 24 | 7.5% | |
| | >45 mph | 292 | 90.7% | |
| | Total | 322 | 100% | |
| | 85th Percentile Speed = | | 66 | MPH |

Note:
[1] 24-hour total volume

# 3.
# Project Conditions

## Proposed Solar Farm Operations and Access

The project as proposed will consist of a 247-megawatt solar energy generation facility on a 2,506-acre site located along Little Panoche Road.

The workforce at the project site will vary based on the work activities conducted and time of year. However a peak of approximately 550 employees per day, that includes supervisors and office staff, is expected on site at any one time during the construction of the solar farm. During the construction period, employees will work a 12-hour daytime shift with a maximum of 50 employees on site at night. Nighttime work hours would occur between 9:00 PM and 5:00 AM. Nighttime activities would be restricted to minimize impacts to biological resources, sensitive receptors, and land use and recreationalists. These activities would be limited to the following:

- minor non-ground-disturbing activities such as commissioning and maintenance activities to be performed when PV arrays are not energized
- interior use of the operations and maintenance facility
- unanticipated emergencies (defined as an imminent threat to life or a significant property interest), including non-routine maintenance that requires immediate attention
- special status species impact avoidance and minimization activities and research (e.g., giant kangaroo rat trapping and San Joaquin kit fox radio telemetry), and
- security patrols.

No ground disturbing activities (including but not limited to grading, pile driving, trenching) would take place at night.

Employees would originate from the primary workforce areas of Hollister/San Benito County and Fresno County which are located between 10-60 miles from the site. It is expected that the employees would carpool at a rate equivalent to 1.2 employees per vehicle. It is anticipated that approximately 100 large trucks would access the site on a daily basis to deliver material and equipment to the site. A few trucks containing oversized loads also will access the site, but will be infrequent when compared to daily truck traffic. Delivery of material and equipment are anticipated to be delivered from within a 100-mile radius (occasionally from a greater distance) but on the average of less than 100 miles away. The types and estimated daily trips anticipated to be generated by the project during construction of project is presented in Table 1.

Access to the site will be provided exclusively from Little Panoche Road. Staff will utilize Panoche Road to and from SR 25 and Little Panoche Road to and from Interstate 5. Truck traffic will be restricted to the use of Little Panoche Road to and from Interstate 5.

Traffic associated with the project after completion of the construction period is expected to be minimal. Therefore, the analysis presented within this chapter evaluates the effects of project traffic under a worst-case peak construction period during its approximately 18-month construction period.

# Project Traffic

The magnitude of traffic produced by a new development is typically estimated by applying the size of the project to the applicable trip generation rate contained in the Institute of Transportation Engineers (ITE) Trip Generation Manual. However, the ITE manual does not include trip generation rates for solar farm facilities. Therefore, the amount of traffic generated by the proposed project was estimated based on information obtained from the applicant, which includes number of employees, employee shift times, and anticipated daily truck activity at the site. The vehicular trips associated with the proposed project were separated into two components: 1) auto trips and 2) truck trips.

## *Auto Trips*

Auto trips simply refer to all passenger vehicle trips that would be generated by the proposed project. These trips would mainly represent employee trips to and from the site throughout their work shifts. It is anticipated that the proposed project would employ a peak total of 550 employees that will work a 12-hour daytime shift (generally between 7:00 AM to 7:00 PM) with a maximum of 50 employees on site at night. Nighttime work hours would occur between 9:00 PM and 5:00 AM. Nighttime activities would be restricted to minimize impacts to biological resources, sensitive receptors, and land use and recreationalists.

The daily traffic generated by the project's employees was estimated based on work shift information and the assumption that employees would carpool at a rate equivalent to 1.2 employees per vehicle. Based on the provided information and assumptions, it is estimated that the proposed project would generate a total of 950 daily auto trips. Based on the proposed start and end times of the daytime work shift, the project would not generate auto trips during the standard AM and PM peak hours. The project would generate the greatest amount of auto traffic, 448 trips, from 6:00 – 7:00 AM during the arrival of employees for the daytime work shift and 7:00 – 8:00 PM during the departure of employees of the daytime work shift. Based upon existing count data, the identified peak of project traffic would not coincide with the peak of existing traffic along surrounding roadways.

## Truck Trips

The expected truck traffic generated by the proposed project would mainly be composed of trucks delivering materials and equipment to the site. It is anticipated that approximately 100 large trucks would access the site on a daily basis to deliver materials and equipment. It was assumed that the trucks would arrive to the site evenly distributed between the hours of 6:00 AM -6:00 PM. Thus, it is estimated that the proposed project would generate a total of 200 daily truck trips, with a maximum of 18 truck trips occurring during any one hour between 6:00 AM -6:00 PM.

Overall, the project is estimated to generate a total of 1,150 daily trips, with 16 (8 inbound and 8 outbound) trips occurring during the typical AM and PM peak hours. The project would generate the greatest amount of traffic, 448 trips, between 6:00 – 7:00 AM which falls outside of the typical AM commute period. The daily project vehicular activity and trip generation estimates are presented in Table 5.

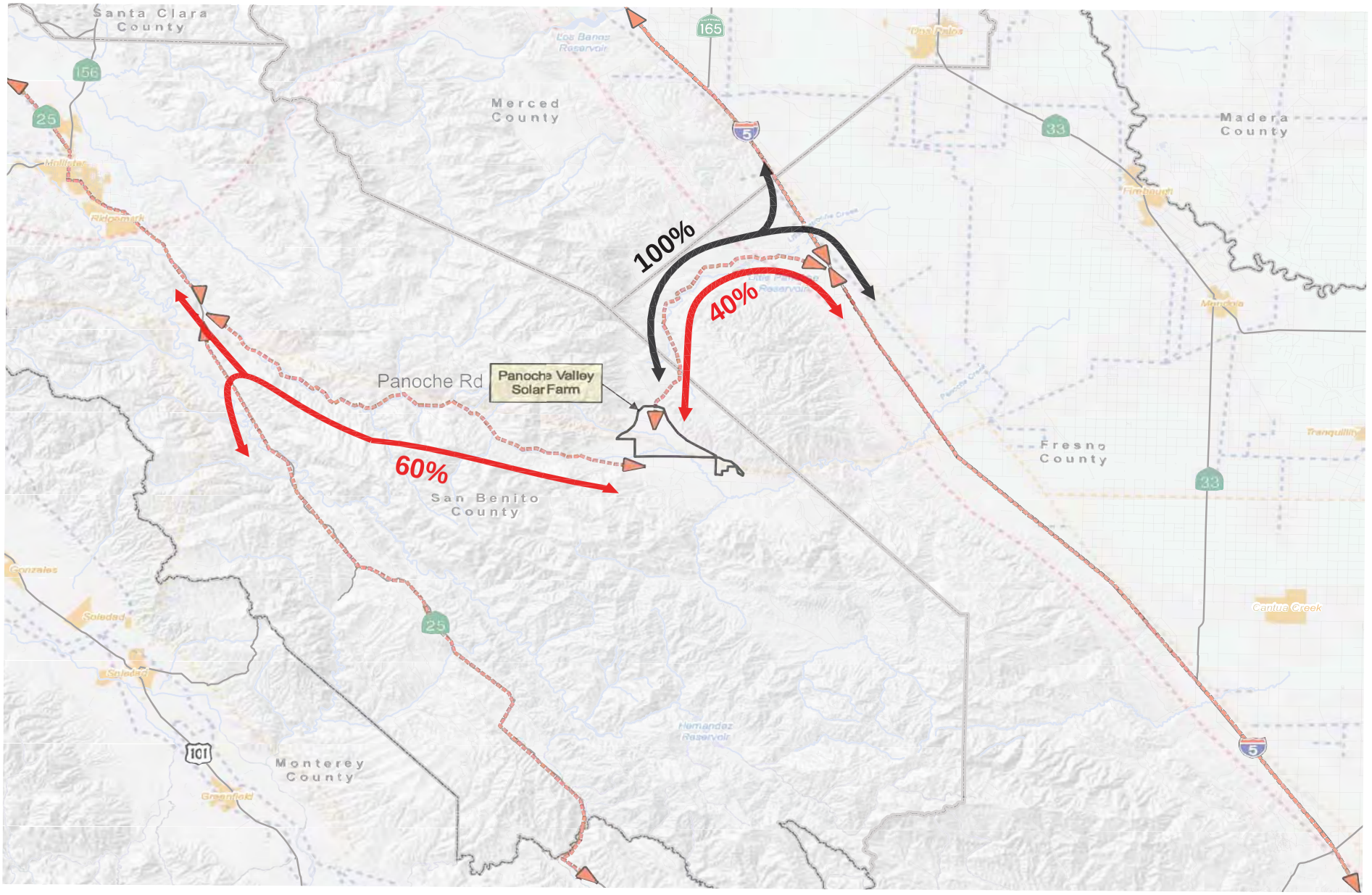
## *Trip Distribution and Assignment*

All project traffic would access the project site via either Panoche Road or Little Panoche Road. It was assumed that 60 percent of the employees would originate from San Benito County and utilize Panoche Road from SR 25, the remaining 40 percent were assumed to utilize Little Panoche Road from Interstate 5. All heavy truck traffic will be restricted to the use of Little Panoche Road from Interstate 5. No truck traffic was assumed to use Panoche Road from SR 25 due to its existing geometrics as explained in more detail in the following section. No project traffic was assumed to utilize the unpaved section of Panoche Road/Jackass Grade. The assumed distribution of project traffic is presented in Figure 3. Project traffic on the roadway system is presented in Figure 4.

**Table 5**
**Estimated Project Vehicular Activity**

| Hours of Operation | Solar Farm Auto Trips | Solar Farm Delivery Trucks | Auto Trips In | Auto Trips out | Truck Trips In | Truck Trips out | Total Trips In | Total Trips Out | Total Trips Total |
|---|---|---|---|---|---|---|---|---|---|
| 12:00 AM to 1:00 AM | 7 departures | | 0 | 7 | 0 | 0 | 0 | 7 | 7 |
| 1:00 AM to 2:00 AM | 7 departures | | 0 | 7 | 0 | 0 | 0 | 7 | 7 |
| 2:00 AM to 3:00 AM | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3:00 AM to 4:00 AM | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:00 AM to 5:00 AM | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:00 AM to 6:00 AM | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6:00 AM to 7:00 AM | 432 arrivals | 8 arrivals<br>8 departures | 432 | 0 | 8 | 8 | 440 | 8 | 448 |
| **7:00 AM to 8:00 AM** | | **8 arrivals<br>8 departures** | **0** | **0** | **8** | **8** | **8** | **8** | **16** |
| 8:00 AM to 9:00 AM | | 8 arrivals<br>8 departures | 0 | 0 | 8 | 8 | 8 | 8 | 16 |
| 9:00 AM to 10:00 AM | | 8 arrivals<br>8 departures | 0 | 0 | 8 | 8 | 8 | 8 | 16 |
| 10:00 AM to 11:00 AM | | 9 arrivals<br>9 departures | 0 | 0 | 9 | 9 | 9 | 9 | 18 |
| 11:00 AM to 12:00 PM | | 9 arrivals<br>9 departures | 0 | 0 | 9 | 9 | 9 | 9 | 18 |
| 12:00 PM to 1:00 PM | | 9 arrivals<br>9 departures | 0 | 0 | 9 | 9 | 9 | 9 | 18 |
| **1:00 PM to 2:00 PM** | | **9 arrivals<br>9 departures** | **0** | **0** | **9** | **9** | **9** | **9** | **18** |
| 2:00 PM to 3:00 PM | | 8 arrivals<br>8 departures | 0 | 0 | 8 | 8 | 8 | 8 | 16 |
| 3:00 PM to 4:00 PM | | 8 arrivals<br>8 departures | 0 | 0 | 8 | 8 | 8 | 8 | 16 |
| 4:00 PM to 5:00 PM | | 8 arrivals<br>8 departures | 0 | 0 | 8 | 8 | 8 | 8 | 16 |
| **5:00 PM to 6:00 PM** | | **8 arrivals<br>8 departures** | **0** | **0** | **8** | **8** | **8** | **8** | **16** |
| 6:00 PM to 7:00 PM | 8 arrivals | | 8 | 0 | 0 | 0 | 8 | 0 | 8 |
| 7:00 PM to 8:00 PM | 7 arrivals<br>432 departures | | 7 | 432 | 0 | 0 | 7 | 432 | 439 |
| 8:00 PM to 9:00 PM | 7 arrivals<br>8 departures | | 7 | 8 | 0 | 0 | 7 | 8 | 15 |
| 9:00 PM to 10:00 PM | 7 arrivals<br>7 departures | | 7 | 7 | 0 | 0 | 7 | 7 | 14 |
| 10:00 PM to 11:00 PM | 7 arrivals<br>7 departures | | 7 | 7 | 0 | 0 | 7 | 7 | 14 |
| 11:00 PM to 12:00 AM | 7 arrivals<br>7 departures | | 7 | 7 | 0 | 0 | 7 | 7 | 14 |
| **TOTAL DAILY TRIPS:** | **950** | **200** | **475** | **475** | **100** | **100** | **575** | **575** | **1150** |

Source: Based on information from applicant.




LEGEND

= Employee/Shuttle Routes = Truck Routes

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Figure 3

# Assumed Trip Distribution

Panoche Valley Solar Farm

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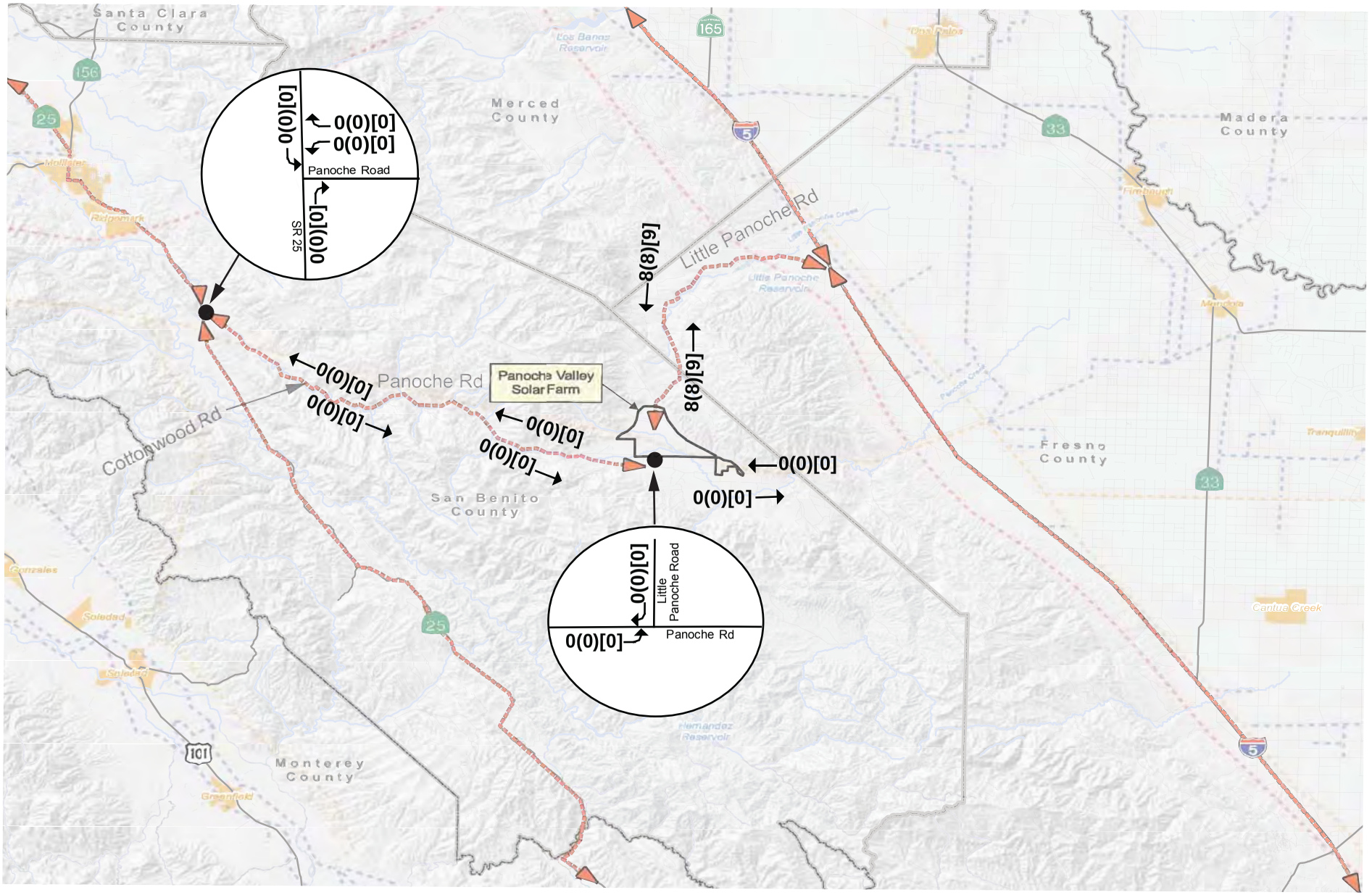


## LEGEND

XX(XX)[XX] = AM(PM)[Midday] Peak-Hour Volumes

Hexagon
Transportation Consultants, Inc.

Figure 4

# Project Trips

Panoche Valley Solar Farm

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# Project Conditions Roadway System Analysis and Evaluation

The effects of project traffic on the study roadways and critical intersections were evaluated based on projected roadway volume increases, intersection levels of service analysis and signal warrant checks. Since truck trips do not have the same effect on the transportation network as auto trips, the estimated project truck traffic was factored up using a heavy vehicle adjustment factor of 1.5 to yield passenger-vehicle equivalent trips (a truck trip is considered to represent 1.5 passenger-vehicle trips) for the analysis of project conditions. An assessment of the adequacy of the existing roadways to serve project traffic was also completed. Each of the components of the analysis is described in the following sections.

## *Roadway Traffic Operations*

The volume data collected along Panoche and Little Panoche Roads showed volumes that were well below capacities of each of the roadways. The project is projected to add between 570 to 580 daily trips to the roadways and result in daily traffic volumes along the roadways ranging from 152 to 892 daily vehicles. Though the project traffic will result in an increase in traffic along each of the roadways, the increase will have little effect on roadway operations and will still be well within the roadway capacities. The project traffic on each of the study roadways and intersections is presented in Table 6.

The increase in truck traffic associated with the project will result in seven times as many heavy vehicles utilizing Little Panoche Road. The pavement along Little Panoche Road on a five-mile segment beginning four miles north of Panoche Road is deteriorating and the addition of large trucks associated with the project will have a negligible effect on roadway operations, but will worsen the pavement conditions. Heavy trucks bound for the project site were not assumed to use Panoche Road due to its physical characteristics and safety concerns as explained in the following section. Table 7 presents projected vehicle composition along each of the studied roadways.

## *Intersection Level of Service Analysis*

Level of service calculations were performed for those intersections identified to be of critical importance. The key intersections analyzed are:

1 SR 25 and Panoche Road
2 Little Panoche Road and Panoche Road

*Level of Service* is a qualitative description of operating conditions ranging from LOS A, or free-flow conditions with little or no delay, to LOS F, or jammed conditions with excessive delays. The intersections were analyzed using TRAFFIX software, which is based on the *Highway Capacity Manual* (HCM) 2000 method for computing level of service at intersections. TRAFFIX is a commonly used software program to calculate intersection delay and is available to the public. Both intersections are two-way stop controlled unsignalized intersections. Unsignalized intersection levels of service are evaluated on the basis of worst-case delay for each stop-controlled approach at the intersection. All intersections within the County are required to meet the County's LOS standard of LOS C.

Results of the level of service analysis indicate that both study intersections currently operate at LOS A conditions during the AM, PM, and Mid-day peak hours (See Table 8). Based on the proposed start and end times of the daytime work shift, the project would not generate auto trips during the standard AM and PM peak hours. Thus, the project will have no significant impact on intersections levels of service.

## *Signal Warrant Analysis*

An assessment was made of the need for signalization of each of the intersections. This assessment was made on the basis of the Peak-hour Volume Signal Warrant (Warrant #3 – Part B) described in the California *Manual on Uniform Traffic Control Devices* (MUTCD), adopted in September 2010. This method makes no evaluation of intersection level of service, but simply provides an indication whether peak-hour traffic volumes would be sufficient to justify installation of a traffic signal. The signal warrants were checked using the existing and project traffic volumes.

**Table 6**
**Project Conditions Roadway Traffic Volume Summary**

| Location | Direction[1] | Existing Conditions | | | | Project Trips | | | | Project Conditions | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | ADT | AM | PM | Mid-Day | ADT[2] | AM | PM | Mid-Day | ADT[2] | AM | PM | Mid-Day |
| (A) Little Panoche Road, North of Panoche Road | NB | 32 | 6 | 4 | 6 | 290 | 8 | 8 | 9 | 322 | 14 | 12 | 15 |
| | SB | 34 | 1 | 6 | 5 | 290 | 8 | 8 | 9 | 324 | 9 | 14 | 14 |
| | ***Total*** | ***66*** | ***7*** | ***10*** | ***11*** | ***580*** | ***16*** | ***16*** | ***18*** | ***646*** | ***23*** | ***26*** | ***29*** |
| (B) Panoche Road, East of Little Panoche Road | EB | 76 | 15 | 5 | 12 | 0 | 0 | 0 | 0 | 76 | 15 | 5 | 12 |
| | WB | 76 | 10 | 11 | 10 | 0 | 0 | 0 | 0 | 76 | 10 | 11 | 10 |
| | ***Total*** | ***152*** | ***25*** | ***16*** | ***22*** | ***0*** | ***0*** | ***0*** | ***0*** | ***152*** | ***25*** | ***16*** | ***22*** |
| (C) Panoche Road, West of Little Panoche Road | EB | 95 | 25 | 6 | 19 | 285 | 0 | 0 | 0 | 380 | 25 | 6 | 19 |
| | WB | 81 | 7 | 10 | 10 | 285 | 0 | 0 | 0 | 366 | 7 | 10 | 10 |
| | ***Total*** | ***176*** | ***32*** | ***16*** | ***29*** | ***570*** | ***0*** | ***0*** | ***0*** | ***746*** | ***32*** | ***16*** | ***29*** |
| (D) Panoche Road, East of Cottonwood Road | EB | 159 | 21 | 18 | 13 | 285 | 0 | 0 | 0 | 444 | 21 | 18 | 13 |
| | WB | 163 | 17 | 20 | 20 | 285 | 0 | 0 | 0 | 448 | 17 | 20 | 20 |
| | ***Total*** | ***322*** | ***38*** | ***38*** | ***33*** | ***570*** | ***0*** | ***0*** | ***0*** | ***892*** | ***38*** | ***38*** | ***33*** |

Notes:
[1] Direction of travel along Panoche Road and Little Panoche Road
[2] ADT = Daily Volume

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**Table 7**
**Project Conditions Vehicle Composition Summary**

| Location | Class | Both Directions | | | | |
|---|---|---|---|---|---|---|
| | | Existing Conditions | | Project | Project Conditions | |
| | | Volume[1] | Ratio | Trips[1] | Volume[1] | Ratio |
| (A) Little Panoche Road, North of Panoche Roac | A | 33 | 50.0% | 380 | 413 | 63.9% |
| | B | 23 | 34.8% | 0 | 23 | 3.6% |
| | C | 10 | 15.2% | 200 | 210 | 32.5% |
| | ***Total*** | ***66*** | ***100.0%*** | ***580*** | ***646*** | ***100.0%*** |
| (B) Panoche Road, East of Little Panoche Road | A | 45 | 29.6% | 0 | 45 | 29.6% |
| | B | 41 | 27.0% | 0 | 41 | 27.0% |
| | C | 66 | 43.4% | 0 | 66 | 43.4% |
| | ***Total*** | ***152*** | ***100.0%*** | ***0*** | ***152*** | ***100.0%*** |
| (C) Panoche Road, West of Little Panoche Roac | A | 54 | 30.7% | 570 | 624 | 83.6% |
| | B | 57 | 32.4% | 0 | 57 | 7.6% |
| | C | 65 | 36.9% | 0 | 65 | 8.7% |
| | ***Total*** | ***176*** | ***100.0%*** | ***570*** | ***746*** | ***100.0%*** |
| (D) Panoche Road, East of Cottonwood Road | A | 134 | 41.6% | 570 | 704 | 78.9% |
| | B | 129 | 40.1% | 0 | 129 | 14.5% |
| | C | 59 | 18.3% | 0 | 59 | 6.6% |
| | ***Total*** | ***322*** | ***100.0%*** | ***570*** | ***892*** | ***100.0%*** |

Notes:
[1] 24-hour total volume, both directions.

| Class | Types |
|---|---|
| A | Motorcycles and Passenger Cars |
| B | 2-Axle Bus and Medium Sized Trucks |
| C | 3-Axle and Larger Trucks |

**Table 8**
**Project Conditions Intersection Operations Summary**

| Study Number | Intersection Name | Existing Control | Peak Hour | Count Date | Existing Conditions Worst Delay | Existing Conditions LOS | Existing Conditions Warrant Met? | Project Conditions Worst Delay | Project Conditions LOS | Project Conditions Warrant Met? |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Little Panoche Road and Panoche Road | TWSC | AM | 03/30/10 | 8.5 | A | No | 8.5 | A | No |
| | | | PM | 03/30/10 | 8.3 | A | No | 8.3 | A | No |
| | | | Mid | 03/30/10 | 8.6 | A | No | 8.6 | A | No |
| 2 | SR 25 and Panoche Road | TWSC | AM | 03/30/10 | 8.6 | A | No | 8.6 | A | No |
| | | | PM | 03/30/10 | 8.8 | A | No | 8.8 | A | No |
| | | | Mid | 03/30/10 | 8.7 | A | No | 8.7 | A | No |

Notes: 1. Intersection Control based on existing conditions
- TWSC = two-way stopped controlled intersection
2. Reported delay and corresponding level of service for TWSC intersections are based on the stop-controlled approach with the highest delay.

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The analysis showed that, based on the existing and projected traffic volumes, the peak-hour volume warrants would not be met at either intersection during the AM, Midday, nor PM peak hours (it should be noted that the warrant used for the analysis is only one potential check out of eleven possible warrants). Hexagon concludes that the existing stop control at each intersection is appropriate. The signal warrant analysis sheets are included in the Appendix.

## Roadway Dimensions and Use Recommendations

The adequacy of the geometric design of Panoche and Little Panoche Roads to serve project traffic was evaluated based on roadway functionality and design standards presented in American Association of State Highway and Transportation Officials (AASHTO) Geometric Design Manual. Both Panoche and Little Panoche Roads are county designated roadways that serve very low volumes and primary purpose is to provide access to properties adjacent to the roadways. Therefore, the direct application of design standards intended for urban roads that serve through traffic are not solely appropriate for either roadway. AASHTO provides supplemental design guidelines in their *Geometric Design of Very Low-Volume Local Roads (ADT<400)* publication that provides guidance in the evaluation of roadway geometrics for roadways similar to Panoche and Little Panoche Roads. The roadways meet the criteria outlined in the supplemental guidelines in that they currently serve less than 400 vehicles per day and their primary purpose is to provide access to residences and farms rather than through traffic.

The guidelines provide design standards for both new roadway construction and improvement of existing roads, but the guidelines discourage implementation of unnecessary geometric improvements to existing roadways. Factors including field data and observations, speeds, and volumes in addition to crash data should be considered when determining the need for improvement. Since neither of the roadways is anticipated to serve a significant increase in traffic volumes due to future development, other than the temporary construction traffic from the proposed project, it is not practical to implement costly permanent geometric roadway improvements. Improvement of the roadways to serve a temporary 18-month condition during the construction of the project is not feasible. Additionally, the improvement of Panoche and Little Panoche Roads would likely encourage the use of the roadways as thoroughfares and may result in the creation of operational and safety problems due to increased volumes and speeds. Therefore, the recommendations outlined below to serve project traffic focus on avoidance of areas with operational and safety problems and implementation of temporary improvement measures. The geometric characteristic of each of the roadways and recommendations to serve project traffic is discussed below.

### *Panoche Road*

Based on the supplemental guidelines, Panoche Road between SR 25 and Little Panoche Road is classified as rural major access road since it serves very low volumes, encounters between vehicles that pose opportunities for crashes are rare, and most motorists are familiar with the roadways and there features. The segment of Panoche Road east of Little Panoche Road that is unpaved would be classified as either a rural industrial/agricultural road or rural resource recovery road. The industrial/agricultural and rural resource recovery road classification is intended for use by traffic associated with farming, logging, mining, etc. activities. The vehicles are typically large tractors and trucks whose drivers are familiar with the roadway and in some cases use radios to communicate with each other to negotiate through the sub-standard roadway.

The guidelines specify a minimum roadway width of 18-20 feet for rural major access roadways with design speeds of 35-45 mph. As stated previously Panoche Road is generally 18 – 20 feet wide, but there are bridges that narrow to as little as 14 feet wide. The minimum widths also do not account for maneuverability and off-tracking of large trucks. There are several sharp curves through the mountainous sections of Panoche Road in which sight distance is restricted by mountain slopes and vegetation. The maneuverability of trucks through the mountainous sections of Panoche Road will pose operational and safety issues that will require extensive traffic control and possible costly improvement of the roadway itself at and near bridge crossings. The use of the unpaved section of Panoche Road by employees should be restricted and appears to be inadequate for use by large trucks bound for the project site due to the length of travel (approximately 10-15 miles) required along a sub-standard road.

**Recommendation:** The use of Panoche Road from SR 25 will be restricted to employees utilizing private autos. The use of the unpaved section of Panoche Road east of Little Panoche Road will not be used by either employees or large trucks bound for the project site.

### *Little Panoche Road*

Similar to Panoche Road, Little Panoche Road is classified as a rural major access road. Field measurements indicated sections of the roadway that were as narrow as 16 feet. As stated above, guidelines recommend a minimum roadway width of 18 feet. Typical width of large trucks is 8.5 feet. Thus, the sections of roadway are narrower than the recommended 18 feet would not be adequate to accommodate two-way travel of large trucks. It will be necessary to implement signage and flaggers along each segment that is narrower than 18 feet. Since there does not appear to be evidence of curve related crashes and operating speeds are within 20 mph of the design speed, as recommended by guidelines, along the roadway there is no need to make permanent geometric improvements to Little Panoche Road to serve project traffic. With the operational and safety issues along Panoche Road that were described above, Little Panoche Road will be the sole route utilized by large trucks to access the project site. Temporary construction traffic control should be implemented to improve safety along the roadway during construction of the proposed project.

**Recommendation:** Little Panoche Road will be utilized as the only route for large trucks and employees traveling via auto from Interstate 5. Traffic control (flaggers, signage, and use of lead vehicles) should be implemented along each of the segments that have sub-standard roadway width (less than 18 feet). Roadway striping should also be rehabilitated at a minimum through each curve, but preferably along the entire length of Little Panoche Road between Interstate 5 and Panoche Road.

### *Intersection Truck Turning*

The intersections of SR 25/Panoche Road and Little Panoche Road/Panoche Road were checked to determine whether large trucks could complete turning maneuvers through the intersections. Turning templates were checked for both typical delivery trucks: SU-30 (single unit trucks with a wheelbase of 30 feet) and large tractor-trailers: WB-50 (wheelbase of 50 feet). The truck turning templates show that the intersections would be adequate to accommodate the turning movements of semi-trailer trucks, emergency vehicles, garbage trucks, and delivery vehicles.

## Adequacy of Pavement Structure

Heavy trucks, such as eighteen wheel semi-trailers, produce disproportionate wear and tear on the roadway system. As described above, the construction of the project is expected to result in additional truck trips on at least Little Panoche Road. A traffic index assessment was conducted to determine the required pavement structure for the additional truck trips. The traffic index is a measure of the number of Equivalent Single Axle Loads (ESAL) expected in a design lane over the design period. Standard Caltrans methodology was used to calculate the traffic index. Since the additional truck traffic will only occur over an approximately 18-month construction period, the 10-year design period recommended by Caltrans was utilized for the analysis.

The collected daily volumes and vehicle composition data were used for the traffic index analysis. The truck counts were categorized as 2-axle, 3-axle, 4-axle, and 5 and 6-axle vehicles. For purposes of calculating adequate pavement standards, buses were included as 2-axle vehicles.

The traffic index assessment shown in Table 9 indicates that Little Panoche Road currently requires a traffic index of 6.0 to handle the existing traffic volumes. The additional truck trips associated with the project will require a traffic index of 8.5, for a design life of 10 years. A pavement engineer will need to conduct field tests to determine the existing traffic index along Little Panoche Road. Based upon, the results of the field testing, additional asphalt overlay may be required to provide the necessary 8.5 traffic

index to accommodate project traffic. The addition of project traffic to the remaining roadways was shown to result in no change to the required traffic index since passenger cars and smaller trucks have a negligible effect on pavement service life.

The traffic index is just one tool to evaluate the structural adequacy of the roadway to serve project traffic loads. A stated earlier, a five mile segment of Little Panoche Road beginning four miles north of Panoche Road and traversing the mountainous terrain is in very poor condition. There is temporary signage in place warning of the poor pavement conditions. The addition of project traffic will worsen the deterioration of the roadway; therefore the pavement along the 5-mile section should be improved. The improvement may consist of rehabilitation or full reconstruction. The rehabilitation of the roadway will require the removal and replacement of surface course, while reconstruction would require the complete removal of and replacement of the sub-base and surface course. Should rehabilitation be deemed adequate, the roadways should be monitored and preventive maintenance be implemented during the construction of the proposed project.

**Recommendation:** It is recommended that Little Panoche Road between Interstate 5 and Panoche Road be tested to determine current traffic index and be improved, if necessary, to achieve a traffic index of 8.5. The improvements may require additional asphalt overlay. As with all pavement overlays, the improvement will require temporary closure of the roadway segment. Additionally, portions of pavement along Little Panoche Road are currently deteriorating. The addition of large trucks will worsen conditions. Rehabilitation of those pavement sections in poor condition should be investigated. The adequacy of the pavement on Little Panoche Road will need to be evaluated by a pavement engineer to ensure that the roadway with recommended improvement can accommodate the projected traffic load.

**Table 9**
**Traffic Index Analysis**

| Location | Existing Conditions: Total Daily Trips /a/ | Existing Conditions: ESAL - 10 Year Constant /b/ | Existing Conditions: Total 10 Year ESAL /b/ | Total Daily Project Trips | Project Conditions: Total Daily Trips /a/ | Project Conditions: ESAL - 10 Year Constant /b/ | Project Conditions: Total 10 Year ESAL /b/ |
|---|---|---|---|---|---|---|---|
| (A) Little Panoche Road, North of Panoche Road | | | | | | | |
| 2-Axle Trucks | 8 | 690 | 5,520 | 0 | 8 | 690 | 5,520 |
| 3-Axle Trucks | 1 | 1,840 | 1,840 | 0 | 1 | 1,840 | 1,840 |
| 4-Axle Trucks | 0 | 2,940 | 0 | 100 | 100 | 2,940 | 294,000 |
| 5&6-Axle Trucks | 9 | 6,890 | 62,010 | 100 | 109 | 6,890 | 751,010 |
| Gross Total - 2 Ways | 18 | | 69,370 | 200 | 218 | | 1,052,370 |
| Total Per Lane | 9 | | 34,685 | 100 | 109 | | 526,185 |
| **Recommended Traffic Index /c/** | | | **6.0** | | | | **8.5** |
| (B) Panoche Road, East of Little Panoche Road | | | | | | | |
| 2-Axle Trucks | 20 | 690 | 13,800 | 0 | 20 | 690 | 13,800 |
| 3-Axle Trucks | 3 | 1,840 | 5,520 | 0 | 3 | 1,840 | 5,520 |
| 4-Axle Trucks | 0 | 2,940 | 0 | 0 | 0 | 2,940 | 0 |
| 5&6-Axle Trucks | 63 | 6,890 | 434,070 | 0 | 63 | 6,890 | 434,070 |
| Gross Total - 2 Ways | 86 | | 453,390 | 0 | 86 | | 453,390 |
| Total Per Lane | 43 | | 226,695 | 0 | 43 | | 226,695 |
| **Recommended Traffic Index /c/** | | | **7.5** | | | | **7.5** |
| (C) Panoche Road, West of Little Panoche Road | | | | | | | |
| 2-Axle Trucks | 24 | 690 | 16,560 | 0 | 24 | 690 | 16,560 |
| 3-Axle Trucks | 2 | 1,840 | 3,680 | 0 | 2 | 1,840 | 3,680 |
| 4-Axle Trucks | 0 | 2,940 | 0 | 0 | 0 | 2,940 | 0 |
| 5&6-Axle Trucks | 63 | 6,890 | 434,070 | 0 | 63 | 6,890 | 434,070 |
| Gross Total - 2 Ways | 89 | | 454,310 | 0 | 89 | | 454,310 |
| Total Per Lane | 45 | | 227,155 | 0 | 45 | | 227,155 |
| **Recommended Traffic Index /c/** | | | **7.5** | | | | **7.5** |
| (D) Panoche Road, East of Cottonwood Road | | | | | | | |
| 2-Axle Trucks | 47 | 690 | 32,430 | 0 | 47 | 690 | 32,430 |
| 3-Axle Trucks | 2 | 1,840 | 3,680 | 0 | 2 | 1,840 | 3,680 |
| 4-Axle Trucks | 0 | 2,940 | 0 | 0 | 0 | 2,940 | 0 |
| 5&6-Axle Trucks | 57 | 6,890 | 392,730 | 0 | 57 | 6,890 | 392,730 |
| Gross Total - 2 Ways | 106 | | 428,840 | 0 | 106 | | 428,840 |
| Total Per Lane | 53 | | 214,420 | 0 | 53 | | 214,420 |
| **Recommended Traffic Index /c/** | | | **7.5** | | | | **7.5** |

/a/ Include buses
/b/ Equivalent Single Axle Loads
/c/ Recommended Traffic Index is calculated by taking the total 10 year ESAL's per lane and comparing the output to the *Caltrans Highway Design Manual, 2006* Table 613.3C Conversion of ESAL to Traffic Index.

# 4. Cumulative Conditions

This chapter presents a summary of the traffic conditions that would occur under cumulative conditions. It includes descriptions of nearby pending developments. The analysis of cumulative growth conditions was conducted at the request of San Benito County staff and is in conformance with the California Environmental Quality Act CEQA.

## Cumulative Development

Foreseeable (cumulative) future development projects in the vicinity of the project site were assessed in order to identify potential cumulative impacts as a result of the additional traffic added to the roadway network by the proposed project in conjunction with other cumulative projects. A list of cumulative projects in the general proposed project area is included in Table 10.

The cumulative projects identified in Table 10 include three oil wells and three power plants. All of these projects, with the exception of the Panoche Ranch Solar Farm, are currently under review by the lead agency. The status of the Panoche Ranch Solar Farm, project proposed by the same applicant as the proposed project, is uncertain. The three oil wells would be located within 10 miles south of the proposed project site. The Panoche Ranch Solar Farm power plant would be located 10 miles northeast of the project site, while the other two power plants would be located approximately 100 miles southeast of the project site.

Construction and operations of oil wells require relatively low volumes of traffic. Therefore traffic generated by the ptotential oil wells would not be negligible.Construction of power plants, however, usually require up to several hundred workers and up to 50 or more truck deliveries per day. Of the three power plants identified, two would be located east of I-5, approximately 100 miles southeast of the project site. Although the construction schedules of the cumulative projects are unknown, these two power plants, which are anticipated to generate a significant amount of traffic during their construction phase, are generally located a great distance from the project site and are not expected to add traffic to the roadway network in the vicinity of the project site. The third power plant, the Panoche Ranch Solar Farm, would be located in Fresno County, approximately 10 miles north of the proposed project site. The only roadways to which both the proposed project and the Panoche Ranch Solar Farm project (Fresno County) could potentially add traffic to would be I-5 and the portion of Little Panoche Road located within Fresno County. However, traffic added to these facilities by both the proposed and cumulative project would be minimal, and is not expected to create any significant impact on the study roadway network.

**Table 10**
**Cumulative Projects List**

| Project | Location | Type | Distance from Proposed Project | Status |
|---|---|---|---|---|
| Use Permit 1030-10A | Off New Idria Road, south of Griswold Hills | Oil Well | Approx. 6.5 miles south | Use permit under review by San Benito County |
| Use Permit 1030-10B | Off New Idria Road, south of Griswold Hills | Oil Well | Approx. 7.5 miles south | Use permit under review by San Benito County |
| Use Permit 1030-10C | Off New Idria Road, south of Griswold Hills | Oil Well | Approx. 8 miles south | Use permit under review by San Benito County |
| Panoche Ranch Solar Farm Solar Energy, Inc. | 2,600 acres at Township 13S, Range 11E Sections 20,21,28,29, and 30 (Fresno County) | Solar PV (250 MW) | Approx. 10 miles northeast | Uncertain |
| California Valley Solar Ranch (SunPower) | 100 miles south of the project within the California Valley; on 4,365 acres | Solar PV (250 MW) | Approx. 100 miles southeast | Under environmental review by San Luis Obispo County. Construction estimated to take approx 3 years. |
| Topaz Solar Project (First Solar) | Approx. 4.85 miles west of the proposed project; up to 8,000 acres | Solar PV (550 MW) | Approx. 100 miles southeast | Under environmental review by the County. Construction estimated to take 3 years. |

Source: Fresno County, 2010; County, 2010.

## Cumulative Traffic Conditions

As decribed above, each of the identified potential developments are projected to generate only a minimal amount of trips. The addition of traffic generated by each of the potential developments as well as the proposed project to roadways surrounding the proposed project would not result in significant cumulative impacts.

# 5. Conclusions

Hexagon Transportation Consultants, Inc. has completed this traffic study for a proposed solar farm in the Panoche Valley of San Benito County. The study was completed in response to concerns regarding safety and effects of construction traffic, primarily truck activity, at intersections and roadways serving the project site. The study focused on Panoche Road, between SR 25 and Interstate 5, and Little Panoche Road between Panoche Road and Interstate 5. The study included an evaluation of roadway geometrics, pavement conditions, vehicular speeds, vehicle composition, sight distance, and existing signage along each of the roadways. Intersection levels of service analysis and signal warrant checks also were completed at the intersections of SR 25 and Panoche Road and Panoche Road and Little Panoche Road.

The analysis results indicated that though the project traffic will result in an increase in traffic along each of the studied roadways and intersections, the increase will have little effect on roadway and intersection operations and will still be well within the roadway and intersection capacities. Therefore, no permanent physical geometric changes to the roadways or intersections are recommended.

A review of the routes to and from the project site and potential haul routes for the delivery of materials and equipment by large trucks to the project site indicated several operational/safety concerns. The use of the roadways will require traffic control along roadway segments that are sub-standard. Also, the increase in truck traffic associated with the project will result in an increase in heavy vehicles utilizing Little Panoche Road. The pavement along Little Panoche Road on a five-mile segment beginning four miles north of Panoche Road is deteriorating and the addition of large trucks associated with the project will worsen the pavement conditions. To accommodate the auto and truck traffic associated with the project, the following recommendations are made.

**Recommendation:** The use of Panoche Road from SR 25 will be restricted to employees utilizing private autos. The use of the unpaved section of Panoche Road east of Little Panoche Road will not be used by either employees or large trucks bound for the project site.

**Recommendation:** Little Panoche Road will be utilized as the only route for large trucks and employees traveling via auto from Interstate 5. Traffic control (flaggers and use of lead vehicles) should be implemented along each of the segments that have sub-standard roadway width (less than 18 feet). Roadway striping should also be rehabilitated at a minimum through each curve, but preferably along the entire length of Little Panoche Road between Interstate 5 and Panoche Road.

**Recommendation:** It is recommended that Little Panoche Road between Interstate 5 and Panoche Road be tested to determine current traffic index and be improved, if necessary, to achieve a traffic index of 8.5. The improvements may require additional asphalt overlay. As with all pavement overlays, the improvement will require temporary closure of the roadway segment. Additionally, portions of pavement

along Little Panoche Road are currently deteriorating. The addition of large trucks will worsen conditions. Rehabilitation of those pavement sections in poor condition should be investigated. The adequacy of the pavement on Little Panoche Road will need to be evaluated by a pavement engineer to ensure that the roadway with recommended improvement can accommodate the projected traffic load.

# Appendix 3

## Mitigation Measures and Applicant Proposed Measures Unchanged from 2010 Final EIR

# Appendix 3: Mitigation Measures and Applicant-Proposed Measures Unchanged from 2010 Final EIR

These measures are unchanged from the measures that were presented in the 2010 Final EIR and are not available for comment. Mitigation measures that have not changed are presented below in Section 3.1. Applicant Proposed Measures (APMs) that have not changed are presented in Section 3.2.

## 3.1 Mitigation Measures Unchanged

### 3.1.1 Introduction to Environmental Analysis

**EM-1** **Provide funding for environmental monitoring.** Prior to issuance of building or grading permits, whichever occurs first, the Applicant shall provide funding for the County of San Benito to ensure monitoring for all measures requiring environmental mitigation. The goal of the mitigation monitoring program is to ensure compliance with County Conditions of Approval and EIR mitigation measures. Monitoring will be carried out during all applicable construction, operational, and decommissioning stages of the project.

A mitigation monitoring plan shall be developed that includes the County-approved environmental mitigation measures and any other conditions of approval. This plan shall include (1) goals, responsibilities, authorities, and procedures for verifying compliance with environmental mitigations; (2) lines of communication and reporting methods; (3) daily and weekly reporting of compliance; (4) construction crew training regarding environmental sensitivities; (5) authority to stop work; and (6) action to be taken in the event of noncompliance. The mitigation monitoring plan shall also include a post-construction program to monitor construction measures that extend beyond the construction period and mitigation measures required during the operational phase. The plan shall also include the decommissioning phase of the project.

The Applicant shall also be responsible for funding work necessitated by mitigation measures that requires use of individuals with special expertise (e.g., botanist, wildlife biologist).

### 3.1.2 Aesthetics

**MM AE-1.1** **Reduce night lighting impacts.** The Applicant shall design and install all temporary construction and decommissioning lighting and permanent exterior lighting according to the following conditions:

- Lamps and reflectors are not visible from beyond the proposed project site, including any off-site security buffer areas.
- Lighting does not cause excessive reflected glare.
- Direct lighting does not illuminate the nighttime sky.
- Illumination of the proposed project and its immediate vicinity is minimized.
- The proposed project lighting mitigation plan complies with local policies and ordinances (for Class 2 in Zone 3 see County Ordinance 19.31.006 and 19.31.009).

The Applicant shall submit to San Benito County for review and approval a lighting mitigation plan that includes the following requirements:

- Location and direction of light fixtures that take the lighting mitigation requirements into account.
- Lighting design that considers setbacks of proposed project features from the proposed project site boundary to aid in satisfying the lighting mitigation requirements.
- Lighting that incorporates fixture hoods/shielding, with light directed downward or toward the area to be illuminated.
- Light fixtures that have cutoff angles sufficient to prevent lamps and reflectors from being visible beyond the proposed project boundary, except where necessary for security.
- Lights not occupied on a continuous basis that have (in addition to hoods) switches, timer switches, or motion detectors so that the lights operate only when the area is occupied.

At least 60 days prior to installation of any permanent exterior lighting or temporary construction/decommissioning lighting, the Applicant shall contact San Benito County to discuss the documentation required in the lighting mitigation plan. At least 30 days prior to installation of any permanent exterior lighting, the Applicant shall submit to San Benito County for review and approval the lighting mitigation plan. If the County determines that the plan requires revision, the proposed project owner shall provide to San Benito County a revised plan for review and approval. The proposed project owner shall not order any exterior lighting until receiving County approval of the lighting mitigation plan.

Prior to commercial operation, the Applicant shall notify San Benito County when the operational lighting installation has been completed and is ready for inspection. If, after inspection, the County notifies the Applicant that modifications to the lighting are needed, within 30 days of receiving that notification the Applicant shall implement the modifications and notify the County that they have been completed and are ready for inspection.

Within 48 hours of receiving a lighting complaint, the Applicant shall provide San Benito County with either (1) a complaint resolution proposal to resolve the complaint and a schedule for its implementation, or (2) written confirmation that lighting is in compliance with the lighting plan and the building permit. The proposed project owner shall notify the County within 48 hours of implementing a resolution. A complaint resolution report shall be submitted to County within 30 days thereafter.

**MM AE-3.1** **Treat surfaces of project structures and buildings.** The Applicant shall treat the surfaces of all project structures and buildings visible to the public such that (1) their colors minimize visual intrusion and contrast by blending with the existing colors of the surrounding landscape, (2) their colors and finishes do not create excessive glare, and (3) their colors and finishes are consistent with local policies and ordinances.

Following in-field consultation with San Benito County Planning & Building staff and other representatives as deemed necessary, the proposed project owner shall submit

for County review and approval, a specific Surface Treatment Plan that will satisfy these requirements. The treatment plan shall include the following:

- A description of the overall rationale for the proposed surface treatment, including the selection of the proposed color(s) and finish(es).
- A list of each major project structure, building, tank, pipe, wall, and fencing, specifying the color(s) and finish(es) proposed for each. Colors must be identified by vendor, name, and number, or according to a universal designation system.
- One set of color brochures or color chips showing each proposed color and finish.
- A specific schedule for completion of the treatment.
- A procedure to ensure proper treatment maintenance for the life of the project.

**Develop Treatment Plan.** At least 60 days prior to physical construction specifying to the vendor the colors and finishes of the first structures or buildings that are surface treated during manufacture, the Applicant shall submit the proposed treatment plan to the County for review and approval. If the County determines that the plan requires revision, the proposed project owner shall provide to the County a plan with the specified revision(s) for review and approval before any treatment is applied. Any modifications to the treatment plan must be submitted the County for review and approval.

The Applicant shall not specify to the vendors the treatment of any buildings or structures to be treated during manufacturing and shall not perform the final treatment on any buildings or structures in the field until the Applicant receives notification of approval of the treatment plan by the County. Subsequent modifications to the approved treatment plan shall be prohibited without the County's approval.

**Report to the County**. Prior to the start of commercial operation, the Applicant shall notify the County that surface treatment of all listed structures and buildings has been completed, and that they are ready for inspection. The Applicant shall submit to the County one set of electronic color photographs from the same KVPs used for project analysis. The Applicant shall provide a status report regarding surface treatment maintenance in the Annual Compliance Report. The report shall specify (1) the condition of the surfaces of all structures and buildings at the end of the reporting year, (2) maintenance activities that occurred during the reporting year, and (3) the schedule of maintenance activities for the next year.

## 3.1.3 Agriculture

**MM AG-2.1** **Create agricultural conservation easement(s).** Prior to the issuance of building permits, the Applicant shall pay for the creation of either (a) 4,563-acre conservation easement(s) on grazing land, or (b) 285-acre conservation easement(s) on high quality cropland in the San Juan Valley. The 285 acres in (b) shall be classified as Prime Farmland by the Department of Conservation's Farmland Mapping and Monitoring Program. Conservation easement(s) or adequate funds to create them shall be given to a qualified agricultural land trust, as determined by the Department of Planning and Building. The qualified agricultural land trust must: (1) Have adopted the Land Trust Alliance's *Standards and Practices*; (2) Have substantial experience creating and stewarding agricultural conservation easements; (3) Have a stewardship endowment to help pay for its perpetual

stewardship obligations. Preference shall be given to a local agricultural land trust if it meets these standards.

Fees shall also be provided to cover (1) administrative costs incurred in the creation of the conservation easement(s) and (2) a contribution to the land trust's stewardship endowment to pay for the long-term cost of monitoring and enforcing the terms of the conservation easement(s) in perpetuity. The total amount of these fees shall be determined by the qualified land trust in consultation with the County.

Either notice that conservation easement(s) have been recorded or proof that funds to acquire them have been received by the agricultural land trust shall be filed with the Department of Planning Building prior to the issuance of building permits. When conservation easement(s) are recorded, a "notice of conservation easement" shall also be filed with the County Recorder. Annual monitoring reports for the conservation easement(s) created shall also be provided to the County by the land trust.

## 3.1.4 Air Quality

No mitigation measures remain unchanged from the 2010 Final EIR.

## 3.1.5 Climate Change/Greenhouse Gas

No mitigation measures remain unchanged from the 2010 Final EIR.

## 3.1.6 Biological Resources

**MM BR-G.1** **Implement a Worker Environmental Education Program.** Prior to any project activities on the site (i.e., surveying, mobilization, fencing, grading, or construction), a Worker Environmental Education Program (WEEP) shall be implemented by a qualified biologist or qualified biologists. Both the biologist(s) and the WEEP shall be subject to County approval. The WEEP shall be put into action prior to the beginning of any project activities and implemented throughout the duration of project construction. The WEEP shall include, at a minimum, the following items:

- Training materials and briefings shall include but not be limited to: a discussion of the Federal and State Endangered Species Acts, Bald and Golden Eagle Protection Act, and the Migratory Bird Treaty Act; the consequences of non-compliance with these acts; identification and values of plant and wildlife species and significant natural plant community habitats; a contact person and phone number in the event of the discovery of dead or injured wildlife; and a review of mitigation requirements.
- A discussion of hazardous substance spill prevention and containment measures.
- A discussion of measures to be implemented for avoidance of the sensitive resources discussed above and the identification of an on-site contact on in the event of the discovery of sensitive species on the site. This will include a discussion on microtrash and its potential harmful effects on California condors.
- Protocols to be followed when road kill is encountered in the work area or along access roads to minimize potential for additional mortality of scavengers and the identification of an on-site representative to whom the road kill will be reported. Road kill shall be reported to the appropriate local animal control agency within 24 hours.

- Maps showing the known locations of special-status wildlife, populations of rare plants and sensitive vegetative communities, seasonal depressions and known waterbodies, wetland habitat, exclusion areas, and other construction limitations (e.g., limited operating periods). These features shall be included on the projects plans and specifications drawings.
- Literature and photographs or illustrations of potentially occurring special-status plant and/or wildlife species will be provided to all project contractors and heavy equipment operators.
- The Applicant shall provide to the County of San Benito evidence that all on-site construction and security personnel have completed the WEEP prior to the start of site mobilization. A special hardhat sticker or wallet size card shall be issued to all personnel completing the training which shall be carried with the trained personnel at all times while on the project site. All new personnel shall receive this training and may work in the field for no more than five days without participating in the WEEP. A log of all personnel who have completed the WEEP training shall be kept on site.
- A weather protected bulletin board or binder shall be centrally placed or kept on site (e.g., in the break room, construction foreman's vehicle, construction trailer) for the duration of the construction. This board or binder will provide key provisions of regulations or project conditions as they relate to biological resources or as they apply to grading activities. This information shall be easily accessible for personnel in all active work areas.
- Develop a stand-alone version of the WEEP, that covers all previously discussed items above, and that can be used as a reference for maintenance personnel during project operations.

**Milestones:** WEEP will be prepared prior to the issuance of a building permit or site mobilization whichever occurs first. The WEEP will be approved by the County and implemented for the duration of construction activities.

**Monitoring:** An environmental monitor will be retained during construction of the project and will be directly involved with the implementation and enforcement of the WEEP. A log of all personnel who have completed the WEEP training shall be kept on site.

**MM BR-G.4** **Implement biological monitoring of construction activities.** Prior to the commencement of ground disturbance or site mobilization activities, the Applicant shall retain County-approved, qualified biologist(s) with demonstrated expertise with listed and/or special-status plants, terrestrial mammals and reptiles to monitor all construction activities on a daily basis. The qualified biologist(s) shall be present at all times during ground-disturbing activities immediately adjacent to, or within, habitat that supports populations of the listed or special-status species identified in Section C.6 of this EIR. Any listed or special-status plants shall be flagged for avoidance. Any special-status terrestrial species found within a project impact area shall be relocated by the authorized biologist and relocated to suitable habitat outside the impact area. If the installation of exclusion fencing is deemed necessary by the authorized biologist, the authorized biologist shall direct the installation of the fence. Fencing shall be long-lasting and UV-stable and shall be maintained and repaired as directed by biological monitor(s). Clearance surveys for

special-status species shall be conducted by the authorized biologist prior to the initiation of construction each day.

If, during construction, the biological monitor observes a dead or injured threatened or endangered wildlife species on the construction site, the monitor shall contact the USFWS, CDFW and County by the end of the day, or at the beginning of the next working day if the agency office is closed and, a written report shall be sent to the County of San Benito, CDFW and/or USFWS within five calendar days. The report will include the date, time of the finding or incident (if known), and location of the carcass and circumstances of its death (if known). The biological monitor shall, immediately upon finding the remains, coordinate with the on-site construction foreman to discuss the events that caused the mortality, if known, and implement measures to prevent future incidents. Details of these measures shall be included with the report. Species remains shall be collected and frozen as soon as possible, and CDFW and/or USFWS shall be contacted regarding ultimate disposal of the remains.

**Milestones:** Monitoring shall occur from the first day of work through the duration of construction activities.

**Monitoring:** Environmental monitor will assist on-site biological monitor(s).

**MM BR-1.2** **Develop and implement a Grazing Plan for the project site.** Managed livestock grazing has been proposed for the project site. Prior to the issuance of a construction permit the Applicant shall retain a County-approved qualified restoration ecologist or biologist to prepare a Grazing Plan to be administered during the construction and operation of the project. The Grazing Plan shall be submitted to the County of San Benito for review and approval. The Grazing Plan shall include, but not be limited to, the following:

1. Timing and duration of grazing.
2. Discussion of the ecological impacts of replacing cattle grazing with sheep grazing.
3. Detailed measures to ensure the persistence and prevent the extirpation of annual grassland species, including listed and rare plant species.
4. The requirement that interior fencing for grazing management be constructed of three strand wire and posts and shall include detailed maps of fencing locations.
5. Analysis of the potential for sheep grazing to contribute to the spread of invasive weed seed.
6. Development of a detailed monitoring component to examine the effects of sheep grazing on wildlife on the project site and the effects of changes in vegetation related to shading from solar panels on grazing.

The Grazing Plan will be an adaptive management tool. Grazing management strategies will be evaluated over time. Modifications to the strategies used or to the techniques used to accomplish each strategy will be implemented based on results, experience, and the latest research. Proposed alterations to the plan would require the review and approval of the County.

**Milestones:** Prior to the issuance of a construction permit the County must approve the Grazing Plan.

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

**MM BR-7a.1** **Impacts to all potential breeding habitat for western spadefoot toad shall be avoided to the extent feasible.** If work within this habitat cannot be avoided, work shall be conducted outside the breeding season of adult western spadefoot toads and the subsequent developmental period of larvae. Therefore, when possible, no work within this habitat will be conducted between January 31 and April 1 or until the habitat is completely dry. If vehicles are required to drive over these areas mats or pads that prevent compaction shall be used. If avoidance is not feasible and work must occur during the wet season, the Applicant shall implement pre-construction surveys for western spadefoot toad. If adult toads or larvae/tadpoles are found a 200-foot buffer shall be placed around these areas and shall remain in place until the larva/tadpoles complete metamorphosis and retreat to upland areas.

The biologist shall document all suitable occupied and unoccupied western spadefoot toad habitat. Prior to final County inspection or occupancy, whichever comes first, the biologist shall prepare a written report detailing the survey results, when necessary, and compliance with avoidance measures for County review and approval. Copies of this report shall also be provided to the CDFW.

**Milestones:** Prior to the commencement of construction activities implement avoidance and minimization measures.

**Monitoring:** Environmental monitor shall ensure implementation of avoidance measures and, when necessary, that buffer delineations are kept in good working order.

**MM BR-7a.2** **Conduct pre-construction surveys for San Joaquin coachwhip and coast horned lizard and implement avoidance measures.** The Applicant shall retain a County-approved, qualified biologist to conduct pre-construction surveys immediately prior to (i.e., the morning of the commencement of) ground disturbance. If San Joaquin coachwhips or coast horned lizards are found within the area of disturbance and can be captured, the biologist will relocate the animals to a pre-approved location outside the project area. The candidate locations for species relocation will be identified prior to construction and based on the size and type of habitat present, the potential for negative interactions with resident species, and species range. A final report identifying the number of animals moved, any mortality identified during the relocation event, and the general health of the species shall be completed and submitted to the County on a monthly basis.

Habitat suitability and occupancy data will be used to determine whether proposed mitigation lands for biological resources meet the requirements for CSSC species mitigation as outlined in Mitigation Measure BR-G.5.

**Milestones:** Prior to the disturbance of habitat conduct pre-construction surveys for San Joaquin coachwhip and coast horned lizards. Re-locate when identified.

**Monitoring:** Environmental monitor shall monitor for occurrences of these species when construction activities occur in suitable habitat.

**MM BR-7b.1** **Conduct pre-construction surveys for non-breeding birds designated as California Species of Special Concern.** The Applicant shall retain a qualified, County-approved biologist to conduct pre-construction surveys for birds designated as California Species of Special

Concern (CSSC) in areas proposed for ground disturbance prior to ground-disturbing activities. The timing of surveys shall be determined in consultation with California Department of Fish and ~~Game~~**Wildlife**. Habitat suitability and occupancy data will be used to determine whether proposed mitigation lands for biological resources meet the requirements for CSSC species mitigation as outlined in Mitigation Measure BR-G.5.

**MM BR-7c.1** **Conduct pre-construction surveys for short-nosed kangaroo rat, San Joaquin pocket mouse, and Tulare grasshopper mouse and implementation of avoidance measures.** 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 occupied habitat for Short-nosed kangaroo rat, San Joaquin pocket mouse, and/or Tulare grasshopper mouse is found it shall be flagged. Impacts to occupied habitat shall be avoided to the extent feasible. If individuals are found within an area proposed for disturbance and can be captured, the biologist will relocate them to a pre-approved area outside the project area. The candidate locations for species relocation will be identified prior to construction and based on the size and type of habitat present, the potential for negative interactions with resident species, and species range. A final report identifying the number of animals moved, any mortality identified during the relocation event, and the general health of the species shall be completed and submitted to the County on a monthly basis.

Habitat suitability and occupancy data will be used to determine whether proposed mitigation lands for biological resources meet the requirements for CSSC species mitigation as outlined in Mitigation Measure BR-G.5.

**Milestones:** Prior to the disturbance of habitat conduct pre-construction surveys for Short-nosed kangaroo rat, San Joaquin pocket mouse, Tulare grasshopper mouse. Flag occupied areas and re-locate when identified.

**Monitoring:** Environmental monitor shall monitor for occurrences of these species when construction activities occur in suitable habitat.

**MM 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.** For ephemeral pools occupied by vernal pool fairy shrimp as determined by the protocol surveys described above, the Applicant shall avoid filling or disturbing such pools to the maximum extent practicable. This includes avoiding any ground disturbance within 100 feet of the edges of such pools.

To the extent that the fill or disturbance of ephemeral pools occupied by vernal pool fairy shrimp cannot be avoided, each acre, or fraction thereof, of occupied vernal pool habitat which is filled or disturbed shall be compensated by the preservation and management of 2 acres of occupied vernal pool fairy shrimp habitat (2:1 preservation ratio) and the creation, management, and preservation of 1 acre of vernal pool habitat (1:1 creation ratio) at a location approved and pursuant to authorization received from the USFWS. The Applicant may also satisfy this mitigation requirement through the purchase of credits at a USFWS-approved mitigation bank.

**MM BR-8.3** **Avoid seasonal depressions and known waterbodies.** All known seasonal depressions and water bodies that have been verified to be occupied by listed fairy shrimp shall be shown on all applicable construction plans and submitted with the construction permit

application. The Applicant shall avoid seasonal depressions known to support listed fairy shrimp (see Impact BR-20). A 100-foot buffer shall be placed around these seasonal depressions and known waterbodies to prevent equipment from entering these areas. This buffer shall be shown on all applicable construction plans (with a highly visible method easily identifiable by construction workers in the field). On-site delineation of this buffer shall be in place prior to the commencement of construction activities. The method used for delineating the buffer shall be kept in good working order for the duration of the construction period, and removed prior to final County inspection.

If avoidance of known populations of listed fairy shrimp is not possible, consultation with the USFWS regarding the potential impacts to the species will be necessary.

**Milestone:** Seasonal depressions and known waterbodies to be shown on construction plans. An on-site delineation of the buffer will be installed prior to commencement of construction activities and maintained throughout the construction period

**Monitoring:** The environmental monitor will periodically check to ensure that the on-site delineation method is in good working order and that construction activities have remained outside of these areas.

**MM BR-12.2** **Avoid and report California condors.** Should a condor land within the project area all work shall be stopped within 500 feet of the condor until the bird has left the area on its own. If the bird fails to leave the area because of injury or other factors the Applicant shall contact the USFWS /CDFW and County for direction. All California condor sightings in the project area shall be reported directly to the USFWS/CDFW and County within 24 hours.

**MM BR-13.1** **Focused pre-construction burrowing owl surveys and implementation of avoidance measures.** No more than 30 days prior to the commencement of initial ground disturbing activities, the Applicant shall implement focused pre-construction reconnaissance level surveys for burrowing owls. Surveys shall be conducted prior to the initiation of ground disturbance and be conducted by County-approved, qualified biologist(s) with experience surveying for burrowing owls. Surveys for burrowing owls shall be conducted in conformance with the California Burrowing Owl Consortium's 1995 protocols, which consist of a minimum of three site visits. Surveys shall be completed within all areas proposed for ground disturbance and shall include the following avoidance measures:

1. Occupied burrows shall not be disturbed during the nesting season (1 February through 31 August) unless a qualified County-approved biologist verifies through non-invasive methods that either the birds have not begun egg-laying and incubation or that juveniles from the occupied burrows are foraging independently and are capable of independent survival. Owls present on site after 1 February will be assumed to be nesting unless evidence indicates otherwise. A 250-foot exclusion buffer around any active nest would be erected. This protected buffer area will remain in effect until 31 August, or based upon monitoring evidence, until the young owls are foraging independently or the nest is no longer active.
2. For burrowing owls present during the non-breeding season (generally 1 September to 31 January), a 150-ft buffer zone will be maintained around the occupied burrow(s).
3. If there is any danger that owls will be injured or killed as a result of construction activity, during the non-breeding season, the birds may be evicted during the non-

breeding season. Relocation of owls during the non-breeding season will be performed by a qualified biologist using one-way doors, which should be installed in all burrows within the impact area and left in place for at least two nights. These one-way doors will then be removed and the burrows excavated to ensure no burrowing owl is within the burrow and then backfilled immediately prior to the initiation of grading. To avoid the potential for owls evicted from a burrow to occupy other burrows within the impact area, one-way doors will be placed in all potentially suitable burrows within the impact area when eviction occurs.

**Milestones:** Prior to the commencement of construction activities the required surveys shall be conducted and any required buffers shall be put in place.

**Monitoring:** Biological monitor shall ensure implementation of avoidance measures and that buffer delineations are kept in good working order.

**MM BR-14.1** **Implement Avian Power Line Interaction Committee guidelines (APLIC).** The Applicant will be required to construct all transmission facilities, towers, poles and lines in accordance with and comply with all policies set forth in the *Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 2006* (APLIC, 2006) and *Reducing Avian Collisions with Power Lines: State of the Art in 2012* (APLIC, 2012), to minimize avian electrocutions as a result of the construction of the project. Details of design components shall be indicated on all construction plans and measures to comply with APLIC policies and guidelines shall be detailed in a separate attachment, all of which will be submitted with the construction permit application. The Applicant shall be required to monitor for new versions of the APLIC guidelines and update designs or implement new measures as needed during project construction provided these actions do not require the purchase of previously ordered transmission line structures.

**Milestones:** Designs and documentation of compliance with the APLIC guidelines to be submitted with the construction permit application. A review of compliance with submitted materials will be conducted prior to the final County inspection.

**Monitoring:** None required.

**MM BR-15.1** **Survey pre-construction maternity colony or hibernaculum for sensitive bats.** No more than 15 days prior to grading near or the removal of towers, trees or other structures the Applicant shall retain a County-qualified biologist, holding a CDFW collection permit and a Memorandum of Understanding with CDFW allowing the biologist to handle bats, to conduct pre-construction surveys for sensitive bats. Surveys shall also be conducted during the maternity season (1 March to 31 July) within 300 feet of project activities.

If active maternity roosts or hibernacula are found, the structure, tree or tower occupied by the roost shall be avoided (i.e., not removed), if feasible. If avoidance of the maternity roost is not feasible, the biologist shall survey (through the use of radio telemetry or other CDFW methods) for nearby alternative maternity colony sites. If the biologist determines in consultation with and with the approval of the CDFW and the County that there are alternative roost sites used by the maternity colony and young are not present then no further action is required, and it will not be necessary to provide alternate roosting habitat. If no active roosts are found, then no further action is required. If active maternity roosts are absent, but a hibernaculum (i.e., a non-maternity roost) is present, then MM BR-15.2 is not necessary, but MM BR-15.3 is required.

**Milestones:** Prior to the commencement of construction activities that will involve grading near or the removal of towers, trees or other structures surveys will be conducted and prior to final County inspection the County will conduct a review of compliance with the above avoidance measures.

**Monitoring:** Biological monitor shall routinely inspect known maternity roots or hibernacula.

**MM BR-15.2** **Provide substitute roosting habitat.** If a maternity roost will be impacted by the Project, and no alternative maternity roosts are in use near the site, substitute roosting habitat for the maternity colony shall be provided on, or in close proximity to, the Project site no less than three months prior to the eviction of the colony. Alternative roost sites will be constructed in accordance with the specific bats requirements in coordination with the County. By making the roosting habitat available prior to eviction (MM BR-15.3), the colony will have a better chance of finding and using the roost. Alternative roost sites must be of comparable size and proximal in location to the impacted colony. The CDFW shall also be notified of any hibernacula or active nurseries within the construction zone.

If construction of alternative roost sites is required, the biologist shall provide a written report, documenting the required coordination with CDFW as well as the location of roost sites. This report shall be provided to the County.

**Milestones:** Construction of alternative roost sites as required for the duration of construction activities and submission of a written report detailing activities and submitted to the County prior to final County inspection.

**Monitoring:** None required.

**MM BR-15.3** **Exclude bats prior to eviction from roosts.** If non-breeding bat hibernacula are found in structures, towers or trees scheduled to be removed, the individuals shall be safely evicted, under the direction of a qualified biologist, by opening the roosting area to allow airflow through the cavity or other means determined appropriate by the bat biologist (e.g., installation of one-way doors). In situations requiring one-way doors, a minimum of one week shall pass after doors are installed and temperatures should be sufficiently warm for bats to exit the roost because bats do not typically leave their roost daily during winter months in southern coastal California. This action should allow all bats to leave during the course of one week. Roosts that need to be removed in situations where the use of one-way doors is not necessary in the judgment of the qualified biologist shall first be disturbed by various means at the direction of the bat biologist at dusk to allow bats to escape during the darker hours, and the roost tree shall be removed or the grading shall occur the next day (i.e., there shall be no less or more than one night between initial disturbance and the grading or tree removal).

If an active maternity roost is located in an area to be impacted by the Project, and alternative roosting habitat is available, the demolition of the roost site must commence before maternity colonies form (i.e., prior to 1 March) or after young are flying (i.e., after 31 July) using the exclusion techniques described above.

**Milestones:** Exclusion of non-breeding bat hibernacula found in structures, towers or trees scheduled to be removed as needed for the duration of construction activities.

**Monitoring:** None required.

**MM BR-16.2** **Minimize impacts of foundation support installations.** The Applicant shall evaluate and implement feasible foundation installation systems to minimize noise and vibration that would affect ground-dwelling wildlife.

**MM BR-18.1** **Conduct focused pre-construction surveys for American badger surveys and implementation of avoidance measures.** No more than 30 days prior to the commencement of construction activities, the Applicant shall retain a County-qualified biologist to conduct pre-construction surveys for American badger within suitable habitat on the project site. If 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. The extent of buffers shall be flagged in the field utilizing a method highly visible by construction crews. Buffers may be modified with the concurrence of the CDFW. Maternity dens shall be flagged for avoidance, identified on construction maps, and a biological monitor shall be present during construction to monitor for adequate protection of all identified dens and to ensure that all flagging is kept in good working order.

If avoidance of a non-maternity den (impacts to maternity dens is not allowed) is not feasible, badgers shall be relocated by slowly excavating the burrow (either by hand or mechanized equipment under the direct supervision of the biologist, removing no more than 4 inches at a time) before or after the rearing season (15 February through 1 July). Any passive relocation of badgers shall occur only after consultation with the CDFW and the biological monitor.

Prior to the final County inspection or occupancy, whichever comes first, a written report documenting all badger related activities (e.g., den flagging, monitoring, badger removal) shall be provided to the County of San Benito. A copy of the report will also be provided to the CDFW.

**Milestones:** Prior to the commencement of construction activities pre-construction surveys will be conducted and prior to final County inspection, the County will conduct a review of compliance with the above avoidance measures.

**Monitoring:** Biological monitor shall routinely inspect protected dens and ensure that delineation methods are in good working order.

**MM BR-23.1** **Create conservation easement on all project areas retired from the development footprint.** Prior to the start of construction, the Applicant shall record a permanent biological conservation easement on the entire footprint of the approved project that requires preservation in perpetuity of project areas retired from the development footprint at the time they are retired. 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 Mitigation and Monitoring Plan for mitigation lands).

In addition to recordation of a conservation easement, the following requirement related to project repowering shall be met: if the approved project is repowered at a future time, the repowered project footprint shall be no greater than that of the approved project.

**Milestones:** Conservation easement on approved project footprint shall be recorded prior to commencement of construction.

**Monitoring:** Documentation of recorded conservation easement shall be submitted to the San Benito County Department of Planning and Building.

## 3.1.7 Cultural and Paleontological Resources

**MM CR-2.2** **Treat previously unidentified archaeological resources discovered during construction.** If archaeological remains are discovered during construction, the Applicant shall immediately cease all work activities within 100 feet of the discovery and notify the County

within 24 hours. Work shall not resume in the affected area until a Registered Professional Archaeologist familiar with the resources of the region inspects the discovery and determines whether further investigation is required to evaluate the significance and CRHR eligibility of the site, including performing additional test excavation or other studies, as necessary, to fully evaluate the significance of the discovered resource. If the site meets California Register of Historic Resources significance criteria and further damage cannot be avoided, then a data recovery plan shall be developed and implemented prior to resuming ground disturbance in the affected area. The data recovery plan shall make provisions for data collection, laboratory processing and technical analyses, final reporting, and curation of archaeological remains, and shall be reviewed and approved by the County Department of Planning and Building prior to implementation. All such work shall be fully funded by the Applicant.

**MM CR-2.3** **Inadvertent discovery of human remains**. If human remains are uncovered, or in any other case when human remains are discovered during construction, the San Benito County Coroner is to be notified immediately to arrange their proper treatment and disposition and the Applicant shall immediately cease all work activities within 300 feet of the discovery. If the remains are identified — on the basis of archaeological context, age, cultural associations, or biological traits — as those of a Native American, California Health and Safety Code 7050.5 and Public Resource Code 5097.98 require that the coroner notify the NAHC within 24 hours of discovery. The NAHC will then identify the Most Likely Descendent, who will determine the manner in which the remains are treated.

**MM CR-2.4** **Implement workers environmental awareness program**. All construction personnel shall be trained regarding the recognition of possible buried cultural remains and protection of all cultural resources, including prehistoric and historic resources during construction, prior to the initiation of construction or ground-disturbing activities. Training shall inform all construction personnel of the procedures to be followed upon the discovery of archaeological materials, including Native American burials. All personnel shall be instructed that unauthorized collection or disturbance of artifacts or other cultural materials within or outside the project area by the Applicant, their representatives, their contractors, or their employees will not be allowed. Violators will be subject to prosecution under the appropriate State and federal laws, and violations will be grounds for removal from the project. Unauthorized resource collection or disturbance may constitute grounds for the issuance of a stop work order. The following issues shall be addressed in training or in preparation for construction:

- All construction contracts shall include clauses that require construction personnel to attend training so they are aware of the potential for inadvertently exposing buried archaeological deposits, their responsibility to avoid and protect all cultural resources, and the penalties for collection, vandalism, or inadvertent destruction of cultural resources.
- Upon discovery of potential buried cultural materials by archaeologists or construction personnel, work in the immediate area of the find shall be diverted and the Applicant's archaeologist notified. Once the find has been inspected and a preliminary assessment made, Solargen's archaeologist shall consult with the County, as appropriate, to make the necessary plans for evaluation and treatment of the find(s).

The Applicant shall provide to the County a list of construction personnel who have completed the cultural resources identification training prior to start of construction,

and this list shall be updated as required when new personnel start work. No construction worker may work in the field without first participating in the training program.

**MM PA-1.1** **Implement site-specific paleontological recovery**. The Applicant shall identify and implement procedures to recover and preserve unknown and accidentally discovered significant fossils within the paleontologically sensitive areas on site. Recovery shall include: salvage of significant fossils; washing of representative samples of sediments that are likely to contain the remains of small fossil invertebrates and vertebrates; preparation of recovered specimens to a point of identification and permanent preservation; identification, curation, and accession of specimens into a museum repository with permanent retrievable storage; preparation of a report of findings with an appended itemized inventory of specimens. The report, inventory, and record of accession shall be submitted to the County and the curation facility. This mitigation shall be implemented pursuant to a Paleontologic Monitoring and Recovery Plan prepared prior to construction by a qualified Principal Paleontologist, following the guidelines of the Society for Vertebrate Paleontology (1995) and submitted to the County for review and approval prior to ground disturbance.

**MM PA-1.2** **Monitor grading and excavation for unknown and accidentally discovered paleontological resources.** A qualified paleontological monitor under the supervision of a Registered Professional Geologist shall monitor grading, trenching, and other earth disturbance that may affect the Pleistocene Older Alluvium (Qoa), mapped in a small segment within the western portion of the project area. If fossils are encountered, then paleontological recovery shall be carried out. All work shall be consistent with the Paleontologic Monitoring and Recovery Plan prepared pursuant to MM PA-1.1 and shall be fully funded by the Applicant. Recovery shall include: salvage of significant fossils; washing of representative samples of sediments that are likely to contain the remains of small fossil invertebrates and vertebrates; preparation of recovered specimens to a point of identification and permanent preservation; identification, curation, and accession of specimens into a museum repository with permanent retrievable storage; preparation of a report of findings with an appended itemized inventory of specimens. The report, inventory, and record of accession shall be submitted to the County and the curation facility, and its submission shall signify completion of the program to mitigate impacts to paleontological resources.

## 3.1.8 Geology, Mineral Resources, and Soils

No mitigation measures remain unchanged from the 2010 Final EIR.

## 3.1.9 Hazards and Hazardous Materials

**MM HZ-5.1** **Cease work during Red Flag Warning.** During a Red Flag Warning issued for the zone encompassing the proposed project, all grading, welding, soldering, and smoking shall cease at the project site. In addition, vehicles shall remain on designated access roads or laydown areas cleared of vegetation.

## 3.1.10 Land Use and Recreation

**MM LU-1.1** **Establish construction liaison.** The Applicant shall provide a toll-free general phone number and the name and contact information for a local public liaison to all property owners

within a one-mile radius of the project's boundaries. The toll-free access number and the identified local public liaison shall act as points of contact between property owners and construction crews. The local public liaison shall be available both in person and by phone, as necessary, for at least 30 days prior to the start of any construction-related activities and for up to one year following construction. During construction, the local public liaison shall respond to all construction-related questions and concerns within 72-hours. Post-construction responses shall be made within 1 week.

The Applicant shall provide summary documentation of all comments and concerns communicated to the liaison monthly for the duration of construction and for one year following the completion of construction. The compliance documentation shall include the name and address of the person (if known) contacting the local public liaison, the date of contact, and what actions were taken to rectify and/or address the comments or concerns expressed. The compliance documentation shall be submitted to the County of San Benito Planning and Building Department on a quarterly basis throughout the duration of construction and for one year following construction.

**MM LU-1.2** **Provide advance notice of construction.** Prior to and during construction, the Applicant shall give at least 30 days advance notice of the start of any construction-related activities for each phase (Phases 1 through 5) to all residences located within 5 miles of the project phase boundary, the Principal of the Panoche Elementary School, and the Bureau of Land Management Hollister Field Office. The notification shall include the toll-free general phone number and contact information for the local public liaison (Mitigation Measure LU-1.1, Establish construction liaison). Notification shall be provided by: (1) mailing notices to all property within a five-mile radius of the project site's boundaries; (2) placing notices in local newspapers; (3) mailing to the Principal of the Panoche Elementary School; (4) website posting with a link from the County website, and (4) signs shall be posted at the project site in areas accessible to the public. The announcement shall state where and when construction would occur; provide tips on reducing noise intrusion (e.g., closing windows facing the planned construction); and provide a point of contact for any noise complaints. The Applicant shall provide to the Department of Planning and Building within 72 hours of any complaints received a report that documents the complaints and the strategy for resolution of any noise complaints.

**MM LU-1.3** **Provide quarterly construction updates.** Following publication/transmittal of the advance notification of construction (Mitigation Measure LU-1.2, Provide advance notification of construction), the Applicant shall provide all property owners within a one-mile radius of the project site's boundaries with updates and changes to all of the information provided in the pre-construction notification. The updates shall be provided every quarter for the duration of all construction-related activities. The updates shall continue to provide the toll-free number and the name and phone number of the local public liaison to respond to all construction-related questions and concerns. The local public liaison shall continue to respond to all questions and complaints within a 72-hour period during construction and within one week for post-construction activities (Mitigation Measure LU-1.1, Establish construction liaison).

## 3.1.11 Noise

**MM NS-1.1** **Shield construction staging areas.** Prior to using noisy equipment during construction and decommissioning activities, the Applicant shall install adequate temporary noise

barriers around the construction staging areas to reduce noise levels associated with deliveries to these areas and construction equipment staging to meet County noise level standards (45 dBA hourly Leq daytime; 35 dBA hourly Leq nighttime at the project's property line). Temporary noise barriers include noise-attenuating shields, shrouds, or portable barriers or enclosures that block the line of sight between the activity and the sensitive use, which would include schools, churches, hospitals, nursing homes, parks, and campgrounds. Temporary noise barriers may include wood fencing, hay bales, or noise curtains. Noise control shields shall be made of a durable, flexible composite material featuring a noise barrier layer bonded to a weather-protected, sound-absorptive material on the construction-activity side of the noise shield. Noise levels shall be monitored during construction at the project's property line closest to the construction staging areas. Should hourly noise level standards be exceeded as a result of work occurring at a staging area, all noise-related work at that staging area shall stop until adequate noise attenuation measures are installed to meet these standards. Any measure installed shall remain in good working order during the duration of the noise-making activity.

**MM NS-1.2** **Implement noise-reducing features and practices for construction noise.** Prior to work commencing, the Applicant shall employ and clearly specify in its contractors' specifications the following noise-suppression techniques to minimize the impact of temporary noise associated with construction and decommissioning activities:

- Trucks and other engine-powered equipment shall be equipped with noise reduction features, such as intake and exhaust mufflers and engine shrouds, which are no less effective than those originally installed by the manufacturer. Engine shrouds shall be closed during equipment operations.
- Trucks and other engine-powered equipment shall be operated in accordance with posted speed limits (see Air Quality Mitigation Measure AQ-1.1) and limited engine idling requirements (see Air Quality APM AQ-2).
- Truck engine exhaust ("jake") brake use shall be limited to emergencies.
- Back-up beepers for all construction equipment and vehicles shall be adjusted to the lowest noise levels possible, provided that OSHA and Cal OSHA's safety requirements are not violated. These settings shall be retained for the life of the project.
- Vehicle horns shall be used only when absolutely necessary, as specified in the contractors' specifications.
- Radios and other "personal equipment" shall be kept at low volume.

**MM NS-1.4** **Limit pile driving activities.** The Applicant shall employ the following limitations on pile driving activities to reduce noise levels:

- Complete pile driving activities in as short a period as feasible.
- Use and operate sonic or vibratory pile drivers at reduced driving force where feasible soil conditions occur instead of impact pile drivers.
- If several pile drivers are to be used, the pile driving activities shall be arranged so that no two pile driving are driving simultaneously within 160 feet of each other.

**MM NS-2.1** **Limit decommissioning activities to daytime.** During decommissioning, construction-related activities shall be limited to the hours of 7:00 a.m. and 7:00 p.m. such that these activities are exempted from Section 25.37.035(E)(2) of the San Benito County Code.

**MM NS-5.1** **Limit panel washing activities.** Panel washing activities shall be restricted to Monday through Saturday 7:00 a.m. to 7:00 p.m. excluding federal holidays, when occurring within 1,900 feet of the project's property line, such that these activities would be exempt from the County's noise level standards when the potential exists to exceed the standards. At greater distances from the project's property line, the County's noise level standards would be met and panel washing activities may occur any time during daylight hours. If noise complaints are received during panel washing activities occurring outside of the exempted times, the County shall monitor noise levels at the project's property line. Should the hourly daytime noise level standard of 45 dBA Leq be exceeded, all noise-related work shall stop in that area and be resumed during the exempted time period.

## 3.1.12 Population and Housing

There were no adopted mitigation measures in the 2010 Final EIR. There are no new proposed mitigation measures for the Revised Project.

## 3.1.13 Public Services, Utilities, and Service Systems

No mitigation measures remain unchanged from the 2010 Final EIR.

## 3.1.14 Transportation and Circulation

**MM TR-1.1** **Prepare and implement Traffic Control Plan.** Prior to the start of construction and decommissioning, the Applicant shall submit a Traffic Control Plan (TCP) to San Benito County for its review and approval and to Caltrans. The TCP shall include the following components and requirements that the Applicant shall implement:

- Define the locations of project access points and location and timing of any temporary lane closures;
- Identify and make provision for circumstances requiring the use of flag persons, warning signs, lights, barricades, cones, and etcetera to provide safe work areas in the vicinity of the project site and to warn, control, protect, and expedite vehicular and pedestrian traffic;
- Implement traffic control (flag persons, signage, barricades, cones, etc.) along all roadway segments that have substandard width (less than 18 feet);
- Include signage placed along all proposed construction haul routes and alternate haul routes at appropriate intervals notifying drivers of the presence of construction traffic on those roadways;
- Restrict use of Panoche Road from SR-25 to private automobiles, shuttle buses (of length less than 40 feet), and trucks with no more than two axles, only;
- Address the potential for construction related traffic to impede emergency response vehicles (in conjunction with Mitigation Measure PS-1.1 [Develop and implement service agreement with San Benito County Fire Department]) and present a specific training and information program for construction workers to ensure awareness of emergency procedures from project-related accidents or wildfires;

- Preclude all construction traffic (personal vehicles, shuttles buses, and all trucks) from using the unpaved portion of Panoche Road from Interstate 5 to the project site.

The TCP shall include a Truck and Bus Safety Plan that ensures:

- Shuttle buses are two-axle buses of length no greater than 36 feet.
- Construction deliveries (including heavy/combination trucks with more than two axles and single-unit trucks with two axles) would be restricted to traveling to and from the project site via Interstate 5 and Little Panoche Road only and would be precluded from using Panoche Road or SR-25;
- That construction material and equipment deliveries requiring pilot cars are limited to traveling along Little Panoche Road during daylight hours;
- All construction truck and bus drivers are informed of and required to adhere to the designated traffic haul routes.

The measures included in the TCP shall be consistent with any applicable guidelines outlined in the Standard Specifications for Public Works Construction, the U.S. Department of Transportation's Manual on Uniform Traffic Control Devices, and the Work Area Traffic Control Handbook.

**MM TR-1.2** **Rehabilitate, protect and monitor roadway pavement, bridges and culverts.** Prior to the start of construction and decommissioning, the Applicant shall:

- Implement pavement repairs required to achieve a traffic index of 7.0 on Panoche Road between Interstate 5 and Panoche Road;
- Rehabilitate roadway striping along Little Panoche Road between Interstate 5 and Panoche Road.
- Repair sections of deteriorated pavement along Little Panoche Road between Interstate 5 and Panoche Road, including the 4.1 through 5.5 mile segment of Little Panoche Road, in accordance with applicable loading standards and to the satisfaction of the County of San Benito Department of Public Works;

During construction the project shall require its contractor to:

- Coordinate with the affected jurisdictions (Caltrans, San Benito and Fresno), and implement appropriate wheel load weight distribution to ensure bridge and culvert crossing are adequately protected.
- Monitor the two culverts along Little Panoche Road that are not located at sufficient depths weekly throughout construction activities for damage to the culverts themselves or dips in the pavement. In the event of any damage that impairs culvert function or presents safety hazards to vehicle travel, project deliveries shall be postponed until the damage is repaired. Any repairs shall be the responsibility of the Applicant.
- In addition to any other local and State requirements relating to oversized loads, the hauling contractor shall place a ¾-inch-thick section of steel plate over the pavement above the culverts prior to hauling the transformers to the project site.
- Conduct ongoing monitoring and evaluation of pavement conditions on Little Panoche Road between Interstate 5 and Panoche Road at appropriate intervals (as determined by the County of San Benito Department of Public Works) throughout the five-year

construction period and undertake roadway repairs as necessary to ensure it safely accommodates the projected construction traffic load.

**MM TR-1.3** **Repair roadway damage**. The Applicant shall restore all public roads, easements, rights-of-way and infrastructure (such as signs, utility poles, and cattle guards) within the public road rights-of-way (including Interstate 5 access ramps on Little Panoche Road, Little Panoche Road between Interstate 5 and Panoche Road, Panoche Road between State Route 25 and Little Panoche Road, and State Route 25 between Hollister and Panoche Road) that have been damaged due to project-related construction or decommissioning activities or traffic. Restoration shall be to roadway conditions that existed prior to commencement of construction or decommissioning and shall be undertaken in a timely manner, in consultation with the County of San Benito and Caltrans and Fresno (if applicable), as appropriate.

At least 30 days prior to construction or decommissioning, the Applicant shall photograph or video record all construction route public roads, easements, and right-of-way segment(s), intersections, and shall provide the County of San Benito, the County of Fresno if applicable), and Caltrans (if applicable) with a copy of these images.

Within 60 days of completion of construction or decommissioning, the project owner shall meet with the County of San Benito, the County of Fresno (if applicable), and Caltrans (if applicable) to identify sections of public right-of-way to be repaired. At that time, the project owner shall establish a schedule to complete the repairs and to receive approval for the action(s). Following completion of any public right-of-way repairs, the project owner shall provide a letter signed by the County of San Benito, the County of Fresno, and Caltrans stating their satisfaction with the repairs.

## 3.1.15 Water Resources

**MM WR-6.1** **Accidental spill control and environmental training.** The Construction Stormwater Pollution Prevention Plan (SWPPP) to be prepared for the proposed project shall include procedures for quick and safe cleanup of accidental spills. The Construction SWPPP shall prescribe hazardous materials handling procedures for reducing the potential for a spill during construction, and shall include an emergency response program to ensure quick and safe cleanup of accidental spills. Additionally, an environmental training program shall be established to communicate environmental concerns and appropriate work practices, including spill prevention and response measures, and SWPPP measures, to all field personnel. A monitoring program shall be implemented to ensure that the plans are followed during all construction, operations, and maintenance activities.

**MM WR-6.2** **Store fuels and hazardous materials away from sensitive water resources.** Storage of fuels and hazardous materials will be prohibited within 200 feet of groundwater supply wells. If community or municipal wells are present on the project site or immediate vicinity, storage of fuels and hazardous materials will be prohibited within 400 feet.

**MM WR-6.3** **Maintain vehicles and equipment.** All vehicles and equipment, including all hydraulic hoses, shall be maintained in good working order so that they are free of any and all leaks that could escape the vehicle or contact the ground. A vehicle and equipment maintenance log shall be updated and provided by the Applicant to the County of San Benito on a monthly basis for the duration of project construction.

## 3.2 Applicant Proposed Measures Unchanged

Table Ap.3-1 presents the Applicant Proposed Measures that were included in the Project Description of the 2010 Final EIR and incorporated into the Approved Project based on the County approval in 2010, and that have not been modified in this SEIR. APMs that are proposed to be modified are presented in Table B-9 in Section B.10 of this Supplemental EIR, and analyzed in Section C.

**Table Ap.3-1. Applicant Proposed Measures (APMs) Unchanged Since 2010 Approval**

| APM Number | Measure by Issue Area |
|---|---|
| **Aesthetics** | |
| APM AES-2 | Construction Lighting: During construction, localized and portable lighting will be used where the work is occurring. Lighting will be powered by generators and have switches to cut power when lighting is not required during construction. |
| **Agriculture** | |
| APM AG-2 | **Allow grazing on lands covered by conservation easement created for biological resource mitigation.** Cattle grazing would be used as appropriate to increase biodiversity and maintain the suitability of mitigation lands for protected species habitat. The grazing program would be developed in accordance with grazing BMPs outlined by the Bureau of Land Management and protected species habitat requirements as determined by the California Department of Fish and Wildlife (CDFW) and the United States Fish and Wildlife Service (USFWS). The grazing management plan would be developed, implemented, and monitored by the land trust or public conservation agency that holds the habitat conservation easement in consultation with CDFW and USFWS. |
| **Air Quality** | |
| APM AQ-1 | All requirements of those entities having jurisdiction over air quality matters would be adhered to and any necessary permits for construction activities would be obtained. Open burning of construction trash would not be allowed. |
| **Biological Resources** | |
| APM BIO-1 | All construction vehicle movement outside the project area would normally be restricted to pre-designated access, contractor acquired access, or public roads. |
| APM BIO-2 | The areal limits of construction activities would normally be predetermined, with activity restricted to and confined within those limits. No paint or permanent discoloring agents would be applied to rocks or vegetation to indicate survey or construction activity limits. |
| APM BIO-3 | In construction areas where recontouring is not required, vegetation would be left in place wherever possible and original contour would be maintained to avoid excessive root damage and allow for regrowth. |
| APM BIO-4 | Prior to construction, all supervisory construction personnel would be instructed on the protection of cultural and ecological resources. To assist in this effort, the construction contract would address:<br>▪ Federal and state laws regarding antiquities and plants and wildlife, including collection and removal.<br>▪ The importance of these resources and the purpose and necessity of protecting them. |
| APM BIO-5 | Mitigation measures that will be developed during the consultation period under Section 7 of the Endangered Species Act will be adhered to as specified in the Biological Opinion of the U.S. Fish and Wildlife Service. |

**Table Ap.3-1. Applicant Proposed Measures (APMs) Unchanged Since 2010 Approval**

| APM Number | Measure by Issue Area |
|---|---|
| APM BIO-17 | **On-site Conservation Measures for San Joaquin Kit Fox**<br>▪ 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 the extent practicable impacts to individuals (e.g., preconstruction surveys, translocation efforts, education program of workers, site restrictions on access and operations, etc.).<br>▪ Restoration measures (soil stockpiling and revegetation efforts) will restore temporarily disturbed areas so they provide suitable areas for the species.<br>▪ On-going monitoring based on the occupancy sampling will be used to determine changes in use of the site.<br>This monitoring will inform an adaptive management approach to site management such as modifications of the grazing regime |
| APM BIO-18<br><br>[duplicate measure) | On-site Conservation Measures for SJKF<br>▪ 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 the extent practicable impacts to individuals (e.g., preconstruction surveys, translocation efforts, education program of workers, site restrictions on access and operations, etc.).<br>▪ Restoration measures (soil stockpiling and revegetation efforts) will restore temporarily disturbed areas so they provide suitable areas for the species<br>▪ On-going monitoring based on the occupancy sampling will be used to determine changes in use of the site.<br>This monitoring will inform an adaptive management approach to site management such as modifications of the grazing regime |
| APM BIO-30 | i) All spills of hazardous materials shall be cleaned up immediately in accordance with the Spill Prevention Plan. |
| APM BIO-31 | j) Pets are prohibited at the PVSF. |
| APM BIO-32 | k) Firearms are prohibited at the PVSF. |
| APM BIO-33 | l) All food-related trash, such as wrappers, cans, bottles, bags, and food scraps shall be disposed of daily in containers with secure covers and regularly removed from PVSF. |
| APM BIO-34 | m) Use of rodenticides and herbicides in project areas is prohibited with the exception of those applied near buildings/critical facilities. Only agency approved compounds will be applied (if necessary) by licensed applicators in accordance with label directions and other restrictions mandated by 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. |
| APM BIO-35 | n) All project-related vehicles shall observe a speed limit of 15 mph or less on all except as posted on State and County highway/roads. |
| APM BIO-37 | p) Appropriate measures shall be undertaken to prevent unauthorized vehicle entry to off-road survey routes in sensitive habitat areas. Signing will be the preferred method to discourage use. |
| APM BIO-38 | q) Project vehicles shall be confined to existing access routes or to specifically delineated areas (i.e., areas that have been surveyed). Otherwise, off-road vehicle travel is not permitted. |
| **Cultural Resources** | |
| APM CR-1 | Prior to construction, all supervisory construction personnel would be instructed on the protection of any known or unknown cultural and paleontological resources. To assist in this effort, the construction contract would address:<br>▪ Federal and state laws that protect such resources and required procedures that must be follow for the collection and removal, including notification of the appropriate public agencies.<br>▪ The importance of these resources and the purpose and necessity of protecting them. |

**Table Ap.3-1. Applicant Proposed Measures (APMs) Unchanged Since 2010 Approval**

| APM Number | Measure by Issue Area |
|---|---|
| **Noise** | |
| APM N-1 | To comply with the County's noise standards, the Applicant shall prohibit the use of fuel operated generators running at 100 percent load within 350 feet of the property boundary between 7:00 p.m. and 7:00 a.m. Battery-operated generators, generators that tie into a temporary or permanent electrical power source, or fuel-operated generators dampened to a noise level measured at less than 40 dBA Ldn at the property line shall be permitted within 350 feet of the property boundary. No fuel-operated generators, dampened or otherwise, shall be permitted within 200 feet of the property boundary. The Applicant shall also prohibit pile driving and grading of the site during these hours. The Applicant will incorporate these restrictions into construction contracts and/or construction specifications. |
| **Hazards and Hazardous Materials** | |
| APM HAZ-1 | Hazardous materials shall not be drained onto the ground or into streams or drainage areas. Totally enclosed containment shall be provided for all trash, as well as recyclable materials. All construction waste, including trash and litter, garbage, other solid waste, petroleum products, and other potentially hazardous materials, shall be removed to a disposal facility authorized to accept such materials. |
| APM HAZ-2 | Prior to construction and mounting of the PV panels, each panel will be checked for cracks or other defects to avoid the possible exposure of toxic metals on the surface. The panels will be properly cleaned, if necessary, to prevent any potential contaminated water from contacting the ground or native vegetation. |
| APM HAZ-4 | The applicant shall ensure that any animals grazing on the site during construction activity pursuant to a lease or other agreement shall be properly vaccinated in accordance with local custom and practice for San Benito County and Panoche Valley. |
| APM HAZ-7 | As documented in Section B.9 of the Project Description, the applicant proposes to decommission the site at the end of the useful life of the project. To address the situation where the applicant becomes insolvent or is otherwise unable to perform the decommissioning and to ensure that the County has sufficient resources to undertake or contract to undertake the decommissioning, the applicant will enter into an agreement with County prior to issuance of the first building or grading permit that provides sufficient financial security to ensure that funds will be available to cover the anticipated cost of recycling and disposal of panels and other infrastructure at the end of the project's useful life. |
| **Public Services and Facilities** | |
| APM PSU-1 | If damaged or destroyed by construction activities, fences and gates would be repaired or replaced to their original pre-disturbed condition as required by the applicable landowner or the land management agency. |