

5.18 CUMULATIVE

The purpose of this section of the AFC is to identify past, present, and reasonably foreseeable actions in the Project area that could affect the same resources as the proposed Project, and provide the following analysis:

- Determine if the impacts of the Project and the other actions would overlap in time or geographic extent;
- Determine if the impacts the Project would interact with, or intensify, the impacts of the other actions; and
- Identify any potentially significant cumulative impacts.

No potentially significant impacts have been identified. An assessment of cumulative impacts is provided in the respective resource section(s) of this AFC.

The project consists of several components, including two 53.4 MW solar/biomass hybrid power plants, an electrical transmission line extending east to the Gates Substation, and other on-site ancillary facilities. The construction laydown area will be on the Project site and will contain support facilities including restrooms, storage areas, administration buildings, a fueling station, staging area, assembly area, and parking.

5.18.1 Affected Environment

The proposed Project, will be located in an unincorporated area of southwestern Fresno County, east of City of Coalinga and northwest of Huron, California. The Project is approximately 8 miles north of Kings County. The Project will consist of two hybrid design solar thermal electric generating plants, comprising a solar field and biomass facility for each plant, and an offsite transmission interconnection. The Project site will encompass approximately 640 acres. Roadway access to the site will be from West Jayne Ave, which borders the northern edge of the Project site. According to the Fresno County Planning Department, the site and surrounding land uses within a 5-mile radius are primarily designated as agricultural.

Other projects that will potentially contribute to cumulative impacts are those located in the same general geographic area of influence as SJS 1&2. For this cumulative assessment, the area of influence is defined as the area within a 5-mile radius of the Plants. Projects or proposed projects of potential regional significance are also considered in the cumulative analysis.

5.18.2 Significance Criteria

The cumulative impacts assessment for the proposed Project is based on the CEQA California Public Resources Code (PRC) Section 21083 and the CEQA Guidelines (CCR Section 15130), which requires that the discussion of cumulative impacts be “guided by the standards of practicality and reasonableness” (PRC Section 21083 (b)), and that “the discussion include a list of past, present, and reasonably anticipated future projects producing related or cumulative impacts” (CCR Section 15130 (b) (1) (A)). The CEQA guidelines require that cumulative impacts be discussed when they are significant, and that the discussions of cumulative impacts reflect the severity of the impacts and their likelihood of occurrence;

however, the CEQA Guidelines state that the discussion need not provide the impacts discussion in as much detail as is provided for the project's impacts.

In analyzing the cumulative impacts of the Project, this analysis used a two step process: first evaluating the potential for cumulative impacts from SJS 1&2 and then analyzing if the Project's incremental effects are cumulatively considerable. Where the Project's incremental effects are cumulatively considerable, this analysis addresses the level of contribution to any cumulative effect by the Project and considers the appropriate response to implement or fund its fair share of a mitigation measure or measures designed to alleviate any potential cumulative impact deemed significant.

This analysis distinguishes between the direct and indirect impacts attributable to the Project, and the potential for cumulative effects of the Project in combination with past, present and potential future projects. For the purposes of this analysis, it will be necessary to define the terms used to describe effects caused by a project (direct, indirect, and/or cumulative effects). Additionally it is necessary to establish the definitional difference between the potential direct and indirect impacts caused by a specific project and a potential for cumulative impacts (additive and/or interactive) associated with a specific project in combination with past, present or future projects.

The CEQA Guidelines define Direct, Indirect, and Cumulative Effects as follows:

Direct Effects: Primary effects that are caused by a project and occur at the same time and place (14 CCR Section 15358[a][1]).

Indirect Effects: Secondary effects that are reasonably foreseeable and caused by a project, but occur at a different time or place (14 CCR Section 15358[a][2]). An indirect physical change in the environment is a physical change...which is not immediately related to the project, but which is caused indirectly by the project. If a direct physical change in the environment in turn causes another change in the environment, then the other change is an indirect change in the environment (14 CCR Section 15064 [d][2]). Indirect or secondary effects may include growth-inducing effects 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 (14 CCR Section 15358[a][2]).

Cumulative Effects: Cumulative effects refer to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts. The individual effects may be changes resulting from a single project or a number of separate projects. The cumulative impact from several projects is the change in the environment that results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable future projects. Cumulative impacts can result from individually minor, but collectively significant projects taking place over a period of time (14 CCR Section 15355). A cumulative impact consists of an impact that is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts (14 CCR 15130[a][1]). *“An EIR should not discuss impacts which do not result in part from the project evaluated in the EIR.”*

The discussion of cumulative impacts shall focus on the cumulative impact to which the identified other projects contribute rather than the attributes of other projects that do not contribute to the cumulative impact (14 CCR 15130 [b]).

The cumulative impacts analysis evaluates additive or interactive effects resulting from the incremental effect of the project when added to other past, present, and reasonably foreseeable future actions regardless of which agency or person undertakes such actions. *Additive Effects* are the incremental addition to prior effects by subsequent effects, amounting to the sum total of all effects. *Interactive effects* may be either countervailing (the net cumulative effect is less than the sum of individual effects) or synergistic (the net cumulative effect is greater than the sum of individual effects).

In conducting a cumulative impacts analysis, a lead agency generally undertakes a two-step analysis to determine whether the project's cumulative impact is significant. First, the lead agency must determine whether the combined effects from both the proposed project and other projects will be cumulatively significant. Second, if the combined effect is cumulatively significant, then the lead agency must determine whether the proposed project's incremental effects are cumulatively considerable (*Communities for a Better Environment v. California Resources Agency* [2002] 103 Cal. App. 4th 98, 120).

For the purposes of this analysis, an effect is a cumulatively considerable effect of the Project only if the effect results in part from the Project. This is based on CEQA Guidelines (14 CCR 15130[a][1]) definitions stated above. If the effect does not result in part from the Project, but arises in consideration of some other project, then that effect is not considered a cumulative effect of the Project and should be considered in the cumulative impacts analysis of the other project.

Section 15130(a)3 of the Guidelines for the California Environmental Quality Act (CEQA) provides guidance on the determination of Cumulative Effects and to address "fair share" of any mitigation of a significant Cumulative Effect. According to the CEQA Guidelines a lead agency may determine that a project's incremental contribution is not cumulatively considerable if the project will comply with the requirements in a previously approved plan or mitigation program which provides specific requirements that will avoid or substantially lessen the cumulative problem (14 C.C.R. 15064 [h][3]). Alternatively, Section 15130 (a)(3) of the CEQA Guidelines states: "*An EIR may determine that a project's contribution to a significant cumulative impact will be rendered less than cumulatively considerable and thus is not significant. A project's contribution is less than cumulatively considerable if the project is required to implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact. The lead agency shall identify facts and analysis supporting its conclusion that the contribution will be rendered less than cumulatively considerable.*"

Where the analysis addresses the level of contribution to any cumulative effect by the Project and considers the appropriate response to implement or fund its fair share of a mitigation measure or measures designed to alleviate any potential cumulative impact deemed significant, it is determined that the effect of the Project will be considered less than cumulatively considerable per CEQA regulations.

Conforming to the CEQA guidelines, this analysis concludes that cumulative impacts attributable in part to the Project could be considered significant after mitigation:

- If a past, present or potential future project's impacts would contribute to the unmitigated impacts of the Project in some way, or incrementally increase unmitigated impacts associated with the Project; or
- If the approval of the Project would remove some barrier to the approval of other Solar Energy Generating Projects, and
- If the Project does not comply with a previously approved plan or mitigation, or the Project is not conditioned upon implementing or funding the Project's fair share of a mitigation measure or measures designed to alleviate the cumulative impact.

5.18.3 Environmental Consequences

The County of Fresno, Public Works and Planning Department, has identified 19 projects with permits or permit applications within a 5-mile radius of the Project area. Table 5.18-1 lists each permit application submitted to Fresno County and outlines specific project details including parcel number, site address, proposed project, and application date. The map numbers listed in Table 5.18-1 corresponds to the map numbers shown on Figure 5.18-1 at each project location. No projects were identified within the Project boundary. The Project site is located on the southwestern side of Fresno County, and is predominantly surrounded by agricultural and rural residential land uses. The 5-mile radius is located entirely within Fresno County, although some portions are within the City of Coalinga jurisdictional boundary. The nearest cities to the Project are City of Coalinga, located approximately 2 miles west, and Huron, located approximately six miles north east. The County of Fresno indicates that no major residential or commercial projects have been constructed, or are in the process of being constructed, in the nearby vicinity of the Project site.

Potential cumulative impacts were identified if the Project impacts would contribute to the impacts of reasonably anticipated future projects under construction at the same time. The magnitude of temporary construction related cumulative impacts depends, in part, on the extent of construction overlap in time and geographic area. For the purposes of this cumulative impact assessment, it is anticipated that the construction phase for the Project will begin in the first quarter of 2010.

This assessment also considers potential cumulative impacts that could occur during the operational phase of the Project. Operations related impacts would occur if some impact related to operations and maintenance of the Project would create an impact that would be incrementally increased by other past, present or future projects.

**Table 5.18-1
Potential Cumulative Projects Considered**

Map Number	CUP Number	Location	Approval Date	Project Description
1	1904	085-320-31s	5/27/82	Exploratory oil/gas well and production facilities

Map Number	CUP Number	Location	Approval Date	Project Description
2	1927	085-100-27s	8/26/82	Exploratory oil/gas well and production facilities
3	2033	085-330-04s, 05s, 06s, 07s, 08s, 11s, 12s	3/15/84	I-5/Jayne Ave. community master plan
4	2044	085-040-41s 085-060-57s	3/15/84	I-5/Jayne Ave. community master plan
5	2129	090-020-07s, 08s, 11s, 24s, 26s, 29s, 30s	3/28/85	Rock, sand, gravel plant
6	2201	085-100-17s	12/19/85	Exploratory gas/oil well
7	2217	085-330-04s, 05s, 06s, 07s, 08s, 11s, 12s (Same as #3)	6/12/86	Modify community development
8	2218	085-030-54s	9/09/86	106 unit PUD w/ golf course
9	2290	085-070-11s	6/25/87	Exploratory gas/oil well
10	2405	075-040-49s	9/21/89	Tomato processing plant
11	2461	085-110-26s	12/03/98 (rev)	Expand rock, sand, gravel plant
12	2464	2 mi E of Coalinga SW to Monterey county line	10/18/90	Natural gas pipeline
13	2726	083-050-52s	4/18/96	Expand oil/gas well & production facility
14	2728	085-060-14	2/08/98	Expand oil/gas well & production facility
15	2784	Jayne Ave./I-5	3/10/98	Re-designate interchange from minor to major
16	2889	075-040-49s	2/18/99	Expand tomato processing plant
17	2970	075-060-12s	3/22/02	Electric power generating plant
18	3022	070-050-38s 070-070-02s, 03s	4/10/03	Expand oil/gas well and production facility
19	3207	085-020-08s	8/09/07	Cell tower

5.18.4 Cumulative Impacts

SJS 1&2 and other projects listed in Table 5.18-1 are not expected to result in significant cumulative impacts to air quality, land use, cultural resources, water resources or traffic during the construction or operation phases. As shown in Figure 5.18-1, all existing and proposed projects considered in this analysis can be characterized primarily as commercial development. Of the 19 projects with permit applications submitted, 7 are exploratory oil and gas well facilities and one natural gas pipeline. Of the remaining 11 projects, 4 include minor infrastructure projects related to the I-5/Jayne Avenue interchange, and one is a cell tower. The remaining six projects include a tomato processing plant, a sand and gravel operation, and an electrical generation facility.

Some of the listed projects have permits that have since expired since their issuance and thus, can be dismissed from this cumulative impact analysis. The electrical generation facility (map number 17) has not yet been developed.

The closest permitted projects shown on Figure 5.18-1 are located approximately 0.5-mile to the south of the Project site and includes exploratory oil and gas well and production facility sites. In addition, no permitted projects within 2.0 miles of the Project site include features that are likely to contribute to any direct and or indirect impacts caused by the Project. The tomato processing facilities projects, gravel and sand operation, and electrical generation facility are located at least 5 miles from the Project site. Thus, as mentioned above, no significant cumulative impacts have been identified as a result of the construction, operation, maintenance, or long-term presence of SJS 1&2 and other projects in the area.

5.18.4.1 Air Quality

CEC requirements specify that an analysis is required to determine the cumulative impacts of the Project and other projects within a 6-mile radius that have received construction permits but are not yet operational or that are in the permitting process or can be expected to do so in the near future. Information requests have been made to SJVAPCD to obtain data on new projects planned within six miles from the proposed site. The resulting list of projects will be submitted to CEC for final determination of which new projects need to be evaluated by cumulative modeling.

Additional dispersion modeling will be submitted as an addendum to this AFC at a later date, if needed. Such a cumulative analysis would use the AERMOD model with the same meteorological input data set and receptor grids used for modeling the Project impacts. Decisions regarding which other sources are to be included and the manner in which these sources will be represented for modeling will be made in consultation with CEC and SJVAPCD.

5.18.4.2 Geologic Hazards and Resources

No cumulative impacts to the geologic and mineral resources at the Site have been identified.

5.18.4.3 Soils

From a soils and agricultural lands resources perspective, no cumulative effects have been identified for the Project.

5.18.4.4 Water Resources

It is not expected that the Project will cause a significant cumulative impact to groundwater supply or use. Thus, no significant cumulative impacts have been identified as a result of the construction, operation, maintenance, or long-term presence of the Project and other projects in the area. In relation to water resources, mitigation measures for the Project would be applied in situations where the Project has or would have an unmitigated significant impact. The evaluation of water resources impacts considered both the occurrence and the quality of water in the area. Furthermore, after implementation of the proposed Project features described in Section 5.5.2 related to water resources, the Project will not have a

significant effect on water quality in the area or surface water runoff flow-rates, volumes, or floodplain impacts. Thus, no mitigation is required for water resources.

5.18.4.5 Biological Resources

Potential cumulative impacts to biological resources caused by the construction of the Project in the area will include loss of habitat. Because the surrounding area is either disturbed grassland and disturbed Valley saltbush scrub habitat or existing agricultural use, no disruptions to wildlife movement are expected to occur. In addition, because the proposed SJS 1&2 site is within a large area of disturbed habitat and is near a drainage with riparian habitat that acts as a functional wildlife movement corridor, cumulative impacts to special-status species including SJKF, American badger, golden eagle, and horned lark would not be considered significant.

5.18.4.6 Cultural Resources

The proposed Project, when assessed with other projects, is not anticipated to have any foreseeable cumulative impacts to cultural resources. No significant or unique cultural resources were found in the APEs during the archaeological pedestrian survey and historic architecture survey. Cumulative Project impacts on local and regional cultural resources are limited, because mitigation measures have been provided that would reduce potential impacts to a less than significant level in the event that an archaeological site is identified within the Project boundaries during construction. In the event that a significant buried archaeology site is encountered during construction, data recovery, and/or site avoidance would ensure that the information content of the site is retained. These measures would limit the cumulative Project impacts on cultural resources in the region.

5.18.4.7 Paleontological Resources

If paleontological resources are not encountered during Project construction, there would be no cumulative impact. If significant paleontological resources are encountered in the course of construction, and if adequate mitigation measures were then implemented, the potential cumulative impacts would be low. The mitigation measures proposed in Section 5.8.4 would effectively preserve the value to science of any significant fossils uncovered during Project-related excavations.

5.18.4.8 Land Use

The assessment of cumulative impacts for this Project includes a review of other projects where an application has been filed with Fresno County, as well as projects anticipated by the CEC. This Project area and the surrounding area have not had any major development projects in the past 18 months that would raise cumulative effects issues related to Land Use. Furthermore, there are no projects considered in the foreseeable future that would raise cumulative effects issues respective to Land Use.

A foreseeable future project is the Coalinga WWTF plant that will provide water to the Project. The Coalinga WWTF project is on City of Coalinga property consisting of approximately one half section of land. The lands will be designated for utilities use prior to approval of the project and will not result in

conversion of active farmland to another use. No cumulative land use impacts are expected to arise from the Project in combination with the Coalinga water treatment project.

5.18.4.9 Socioeconomics

The potential for cumulative socioeconomic impacts exists where other projects are proposed in the region, construction schedules overlap, and employment opportunities are created. This Project area and the surrounding area have not had any major development projects in the past 18 months, though some other potential projects may be considered in the foreseeable future. The foreseeable cumulative consequence of the Project in conjunction with other proposed projects could include an increase in available jobs within the affected area (6-mile radius). This would not be considered an adverse impact to socioeconomics since the project proposes to hire most permanent personnel from the local area and will not contribute to significant population increases in the affected area. Some less than significant increases in local population, combined with increases in local populations resulting from other projects may be considered less than significant due to the fact that they are accompanied by job growth primarily benefiting local populations. No cumulative impacts are foreseen as a result of the development of the Project.

5.18.4.10 Traffic and Transportation

Based on available information from City of Coalinga and Fresno County, the Project's construction traffic would not coincide with known potential future projects, so its contribution to cumulative traffic effects during construction would not be cumulatively considerable, and cumulative effects of the Project would therefore be less than significant.

During Project operations, the traffic analysis conservatively included a 1.0 percent annual ambient growth rate as part of the Year 2011 No Project conditions to account for traffic growth in the study area. The result of the traffic analysis showed that the proposed SJS 1 & 2 operational traffic combined with future ambient traffic growth would not be cumulatively considerable, and cumulative effects of the Project on traffic would therefore be less than significant.

5.18.4.11 Waste Management

The Class I and Class III landfills and soil and water recycling facilities in the Project Site area have adequate recycling and disposal capacities for the Project. Therefore, cumulative impacts from the Project Site and other projects in the region are not expected to be significant.

5.18.4.12 Hazardous Materials

Based on land uses in the surrounding area and the limited amount and type of hazardous materials to be used as part of the Project, no significant cumulative impacts due to hazardous material handling are expected from future projects in combination with SJS 1&2.

5.18.4.13 Public Health and Safety

Risks from the proposed project TAC emissions are evaluated on their own and then compared to the applicable significance criteria. The cumulative effects from TAC emissions from sources other than the proposed project are not considered. CEC requirements specify that an analysis must be conducted to determine the cumulative impacts of the project and other projects within a 6-mile radius that have received construction permits but are not yet operational or that are in the permitting process or can be expected to do so in the near future. This analysis will be conducted for criteria pollutants, since there are no significance thresholds for a cumulative HRA to be assessed against. Information requests have been made to SJVAPCD to obtain data on new projects planned within six miles from the proposed site. The resulting list of projects will be submitted to CEC for final determination of which new projects, if any, need to be evaluated by cumulative modeling.

5.18.4.14 Worker Safety

No cumulative impacts related to worker safety are foreseen due to Construction and Operational Health and Safety Programs as discussed previously in Section 5.17. No significant unavoidable adverse impacts to worker safety are anticipated from the Project and any potential impacts are not considered cumulative in nature.

5.18.4.15 Visual Resources

The assessment of cumulative impacts for the Project includes a review of other projects where an application has been filed with Fresno County, as well as projects anticipated by the CEC. The Project area and the surrounding area have not had any major development projects in the past 18 months, though 19 potential projects may be considered in the foreseeable future.

The areas within the VSOI and greater Fresno County are generally characterized by cultivated farmlands of the valley, foothill grasslands, and high mountain peaks supported by small towns and other sparsely populated communities. Accordingly, the number, size, and scale of cumulative projects in the area are substantially less than in other more-urbanized portions of California.

5.18.5 Mitigation Measures

No mitigation measures are proposed at this time.

5.18.6 LORS Compliance

LORS compliance information is provided for each resource in Sections 5.2 through 5.17. This section addresses compliance related to cumulative effects analysis.

5.18.6.1 Federal

As described earlier in this section, the analysis of cumulative effects is guided by NEPA of 1969 and CEQA's implementing regulations.

5.18.6.2 State

At the state level, CEQA (PRC 21083) and associated CEQA Guidelines (CCR 15130) require that the discussion of cumulative effects be “guided by the standards of practicality and reasonableness” (PRC 21083[b]), and that “the discussion include a list of past, present, and reasonably anticipated future projects producing related or cumulative impacts” (CCR 15130[b] [1] [A]).

5.18.6.3 Local

There are currently no local compliance standards for analyzing cumulative effects. Table 5.18-2, Summary of LORS – Cumulative Impacts, provides a list of LORS applicable to the project.

**Table 5.18-2
Summary of LORS**

Jurisdiction	LORS	Requirements	Conformance Section	Administering Agency	Agency Contact
Federal	No Federal LORS apply	N/A	N/A	N/A	N/A
State	No State LORS apply	N/A	N/A	N/A	N/A
Local	No Local LORS apply	N/A	N/A	N/A	N/A

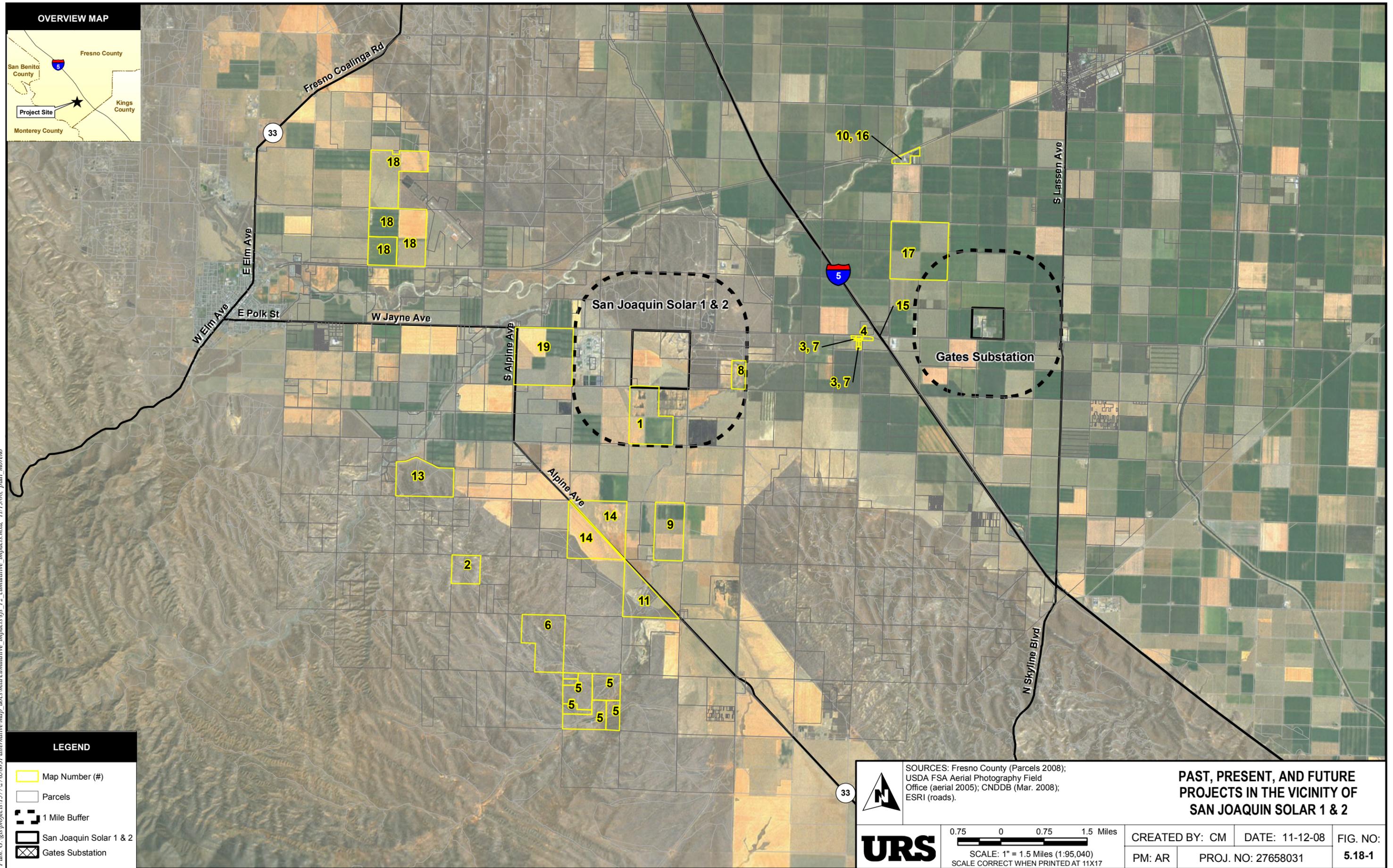
5.18.6.4 Agencies and Agency Contacts

**Table 5.18-3
Agency Contact List for LORS**

	Agency	Contact	Address	Telephone
1	Fresno County, Public Works and Planning	Robin Tani		(559)262-4215
2	Fresno County, Public Works and Planning	Richard Perkins		

5.18.7 References

No other references were used other than those listed in Table 5.18-3 as agency contacts. Personal communication with Fresno County occurred between July 15 and October 1, 2008.



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OVERVIEW MAP

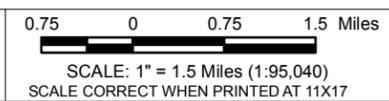


LEGEND

- Map Number (#)
- Parcels
- 1 Mile Buffer
- San Joaquin Solar 1 & 2
- Gates Substation



SOURCES: Fresno County (Parcels 2008);
 USDA FSA Aerial Photography Field
 Office (aerial 2005); CNDDB (Mar. 2008);
 ESRI (roads).



**PAST, PRESENT, AND FUTURE
 PROJECTS IN THE VICINITY OF
 SAN JOAQUIN SOLAR 1 & 2**

CREATED BY: CM	DATE: 11-12-08	FIG. NO:	
PM: AR	PROJ. NO: 27658031	5.18-1	

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