

RECLAMATION

Managing Water in the West

Semitropic Water District: Groundwater Well Operational Data Acquisition, Solar Power and Lateral Canal Lining Project

**Agricultural Water Conservation and Efficiency Grants
Program**

Environmental Assessment 17-27-MP



Mission Statements

The Department of the Interior protects and manages the Nation's natural resources and cultural heritage; provides scientific and other information about those resources; and honors its trust responsibilities or special commitments to American Indians, Alaska Natives, and affiliated island communities.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

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List of Acronyms

APE	Area of Potential Effect
BMPs	Best Management Practices
CAA	Clean Air Act
CDFW	California Department of Fish and Wildlife
CFR	Code of Federal Regulations
District	Semitropic Water Storage District
DOI	Department of the Interior
EA	Environmental Assessment
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FOA	Funding Opportunity Announcement
GHG	Greenhouse gas
ITA	Indian Trust Asset
kV	kilovolt
MW	megawatts
National Register	National Register of Historic Places
NEMA	National Electrical Manufacturers Association
NHPA	National Historic Preservation Act
PCEs	primary constituent elements
PG&E	Pacific Gas and Electric Company
Project	Groundwater Well Operational Data Acquisition, Solar Power Project and Lateral Canal Lining Projects
Proposed Action	Groundwater Well Operational Data Acquisition, Solar Power Project and Lateral Canal Lining Projects
PV	photovoltaic
PVC	polyvinyl chloride
PM	Particulate matter
Reclamation	U.S. Bureau of Reclamation
SJVAPCD	San Joaquin Valley Air Pollution Control District
SCH	California State Clearinghouse
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
Solar Power Project	Pond Road Solar Generating Facility
SWSD	Semitropic Water Storage District
U.S.	United States
USFWS	U.S. Fish and Wildlife Service

1. Introduction

1.1 Background

This Environmental Assessment (EA) examines the potential direct, indirect, and cumulative impacts to the affected environment associated with the United States (U.S.) Bureau of Reclamation (Reclamation) providing Agricultural Water Conservation and Efficiency Grant funding to the Semitropic Water Storage District (SWSD or District) to facilitate the construction of an operational groundwater well data management system and a renewable energy production facility. The SWSD is in the southern end of California's San Joaquin Valley, in Kern County, approximately 20 miles northwest of Bakersfield. The District lies between Interstate 5 on the west, Highway 99 on the east, the city of Delano to the north, and Bakersfield on the south. The District service area comprises approximately 221,400 gross acres of which 137,800 acres are intensely farmed, highly productive agricultural land (Figure 1).

In March of 2014, SWSD applied for an Agricultural Water Conservation and Efficiency Grant, Reclamation's Funding Opportunity Announcement (FOA) No. R15AS00030, for assistance funding the Groundwater Well Operational Data Acquisition and Pond Road Solar Generating Facility (Solar Power Project). In April of 2016, the District applied for a second grant, FOA BOR-MP-16-0003, to help fund the remaining Groundwater Well Operational Data Acquisition sites, and the Lateral Canal Lining associated with the District's Pond-Poso Spreading Grounds.

The Groundwater Well Operational Data Acquisition, Solar Power Project and Lateral Canal Lining Projects (Project or Proposed Action) would equip 390 existing groundwater wells with data systems to provide real-time data on landowner water and power usage for purposes of reconciling costs as part of the District's Water Banking Program and improve on-farm management and implement water conservation practices at the landowner level. The Solar Power Project would provide the District with an energy generation facility up to 5 megawatts (MW) of solar energy to supplement and augment the District's energy supply. The Lateral Canal Lining of the conveyance ditches associated with the Pond-Poso Spreading grounds would reduce seepage losses of groundwater conveyed to the main distribution canal (Figure 1).

This EA has been prepared to examine the potential for impacts on environmental resources as a result of the construction and operation of the facilities identified as the Proposed Action, as well as the No Action Alternate. The following

environmental documents have been prepared to support the actions referenced in this EA, and are hereby incorporated by reference:

- Initial Study and Mitigated Negative Declaration for the Semitropic Water Storage District Pond Road Solar Facility Project (California State Clearinghouse [SCH] #2016041053). GEI Consultants, Inc., May 2016. The Initial Study addressed the environmental impacts associated with the construction of a 5-MW photovoltaic (PV) energy generation facility in Kern County, California. The Project would interconnect to an existing District-owned 12.47-kilovolt (kV) distribution line located immediately north of the Project site, adjacent to the District's Pond Road substation, and across from an existing Pacific Gas and Electric Company (PG&E) substation. The Project would support the District's ongoing efforts

The U.S. Department of the Interior's (DOI) Agricultural Water Conservation and Efficiency Grant Program establishes a framework to provide federal leadership and assistance on the efficient use of water, integrating water and energy policies to support the sustainable use of all natural resources, and coordinating the water conservation activities of various DOI bureaus and offices. Through grants, Reclamation provides cost-shared funding assistance on a competitive basis for projects that seek to conserve and use water more efficiently; increase the use of renewable energy, and improve energy efficiency; benefit endangered and threatened species; facilitate water markets; or carry out other activities to address climate-related impacts on water or prevent any water-related crisis or conflict.

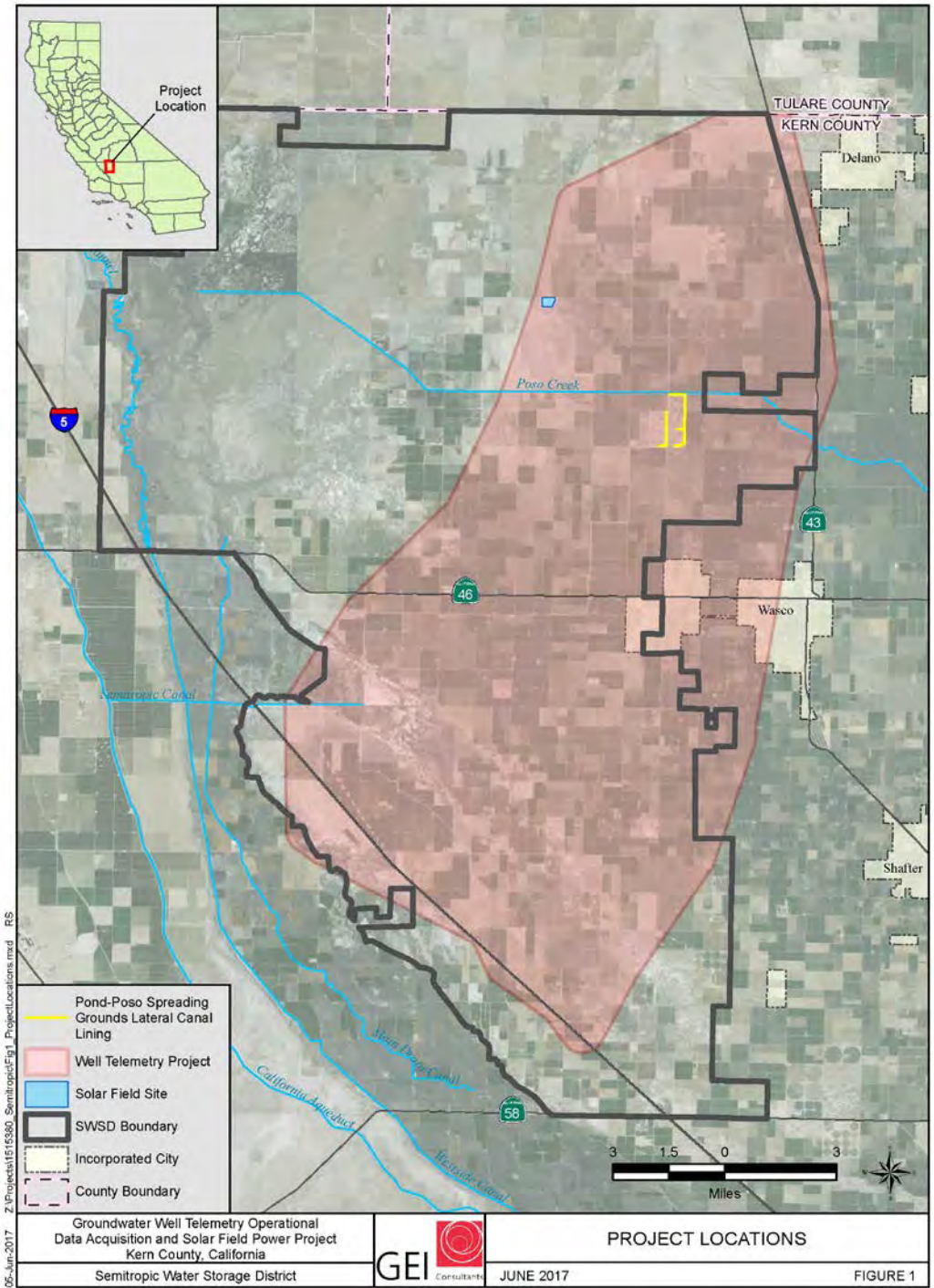


Figure 1: Semitropic Groundwater Well Operational Data Acquisition, Solar Power and Lateral Canal Lining Projects.

1.2 Need for the Proposal

California has experienced two periods of draught since 2002, relying almost exclusively on groundwater to meet irrigation and population needs. Groundwater levels in the San Joaquin Valley have been reduced, approximately 16.5 cubic kilometers between 2007 and 2009, and 40 cubic kilometers between 2012 and 2016 (University of California 2017). Demand for water could increase as California's population and agricultural production increases. With the installation of groundwater monitoring equipment, the District would be able to conserve and manage groundwater supplies more efficiently during times of draught.

With the installation of a solar field, the District would reduce their electrical cost and demand associated with pumping private- and District-owned groundwater wells. The District's energy savings project contributes to California's goal to obtain all the state's power from renewable energy sources by the year 2045 (Marzorati 2017).

1.3 Potential Resource Issues

Due to the potential for impacts, the following resources are analyzed in this EA: Biological, Cultural Resources, and Air Quality.

Impacts on the following resources were considered and found to be minor or non-existing, and thus were eliminated from further discussion. Brief explanations are provided below:

1.3.1 Indian Trust Assets

Indian Trust Assets (ITAs) are legal interests in assets that are held in trust by the U.S. for federally-recognized Indian tribes or individuals. There are no Indian reservations, rancherias, or allotments in the project area. The nearest ITA is the Santa Rose Indian Community of the Santa Rosa Rancheria, a public domain allotment approximately 46.5 miles northwest of the project site. The Proposed Action does not have a potential to affect ITAs. (Appendix A).

1.3.2 Indian Sacred Sites

Sacred sites are defined in Executive Order 13007 (May 24, 1996) as,

...any specific, discrete, narrowly delineated location on federal land that is identified by an Indian tribe, or Indian individual determined to be an appropriately authoritative representative of an Indian religion, as sacred by virtue of its established religious

significance to, or ceremonial use by, an Indian religion; provided that the tribe or appropriately authoritative representative of an Indian religion has informed the agency of the existence of such a site.

The Proposed Action is not on federal land and therefore would not prohibit access to and ceremonial use of Indian sacred sites on federal land.

1.3.3 Environmental Justice

Executive Order 12898 requires each Federal agency to identify and address disproportionately high and adverse human health or environmental effects, including social and economic effects of its program, policies, and activities on minority populations and low-income populations. There are no disadvantaged or minority populations identified within census tracts located in areas that could be affected by the project, therefore there would be no disproportionate effects to these populations.

2. Alternatives Including Proposed Action

This EA considers two possible actions: the “No Action Alternative” and the “Proposed Action”. The No Action Alternative reflects future conditions without the Proposed Action and serves as a basis of comparison for determining potential effects to the environment.

2.1 No Action Alternative

Under the No Action Alternative, Reclamation would not award SWSD with water and energy conservation grants to help fund the Project. The District would continue with current operations

2.2 Proposed Action

Under the Proposed Action, Reclamation would provide \$1,750,000 in Agricultural Water Conservation and Efficiency Grants to SWSD to assist with funding Groundwater Well Operational Data Acquisition, Solar Power and Lateral Canal Lining Projects (collectively one Project or Proposed Action). The objectives of the Project are to 1) improve conveyance of water; 2) prevent erosion; 3) prevent vegetation growth; 4) reduce water seepage; and 5) reduce the District’s energy usage.

2.2.1 Groundwater Well Operational Data Acquisition

The Groundwater Well Operational Data Acquisition project would include the construction of a remote data acquisition system installed on 390 privately-owned and District-owned groundwater wells currently connected to the District’s water conveyance system (Figure 2; Photo 1). The Project construction activities would include the following:

- Retrofit of existing above-ground discharge meters with new mechanical parts
- Erection of National Electrical Manufacturers Association (NEMA)-approved, 3R enclosure, mounted on a stanchion (pole) or outside of existing electrical cabinet
- Installation of meter, data logger, cell modem, and other appurtenances inside the NEMA enclosure, and associated electrical work

- Trenching and below-ground installation of polyvinyl chloride (PVC) conduit and cable extending from telemetry unit to flowmeter
- Installation of a concrete pad

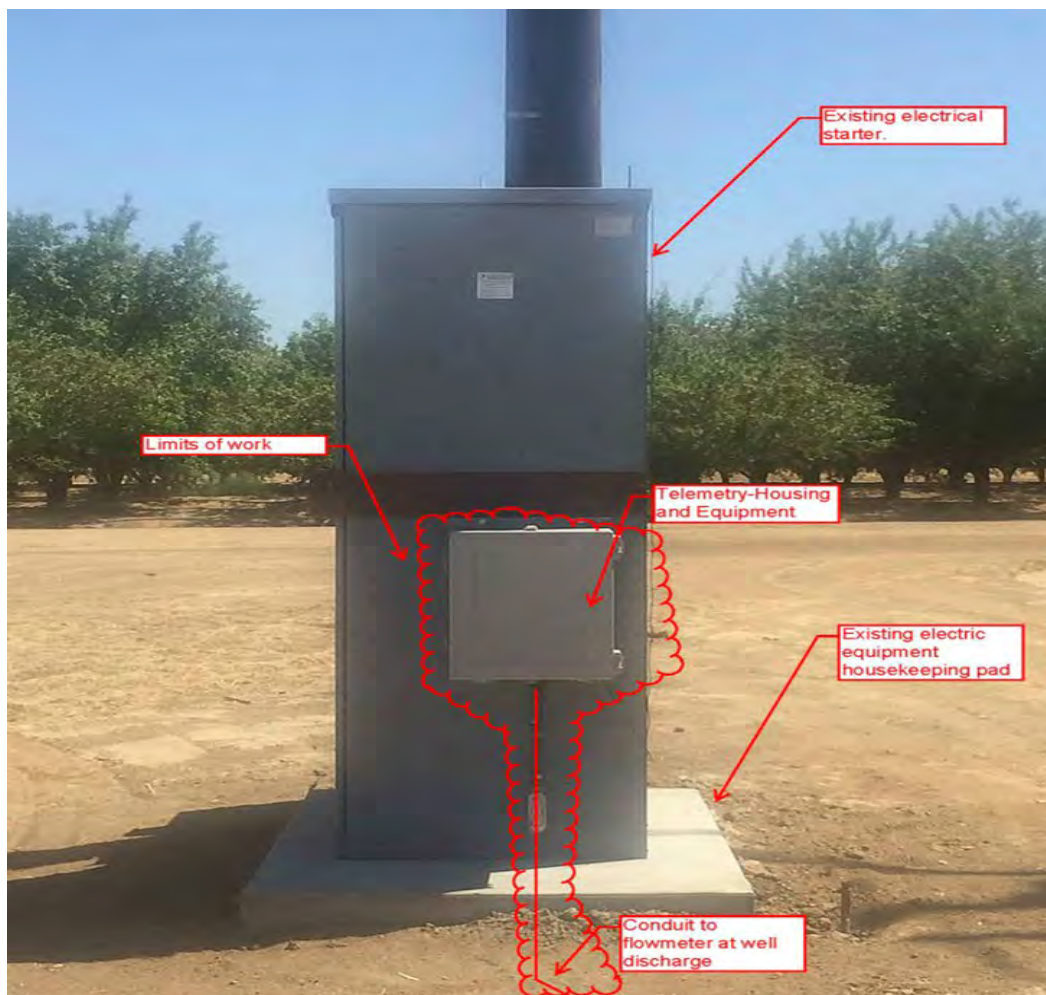


Photo 1: Remote Data Acquisition System with a Diagram Depicting Proposed Additions to Groundwater Well Sites.

The materials for the Groundwater Well Operational Data Acquisition project would be delivered and assembled at SWSD or contractors' offices and taken to the site for installation. Field work is expected to take up to 3 days at each of the 390 locations, require two to three employees, and one to two construction vehicles. The sites are located on actively-farmed agricultural property at existing groundwater wells within the District. Trenches would be created using a small walk-behind backhoe to install the PVC from the well to the data equipment housing. Trench sizes would be approximately 36 inches deep, up to 12 inches in width, and extend up to 30 feet in length. The length of the trench would depend on site configuration at each of the sites, based upon the location of the telemetry

unit relative to the discharge and flowmeter. New disturbance, including disturbance from vehicle traffic would be confined to areas previously disturbed and heavily used. Construction footprint for each well would be a radius of approximately 150 feet within an existing heavily disturbed area (Photo 2). The construction at each well site would take typically 3 days to complete and installation at all 390 wells would be in phases, beginning in the fall of 2017 and continue over the next 3 years.



Photo 2: Representative Photo of Existing Well.

2.2.2 Solar Power Project

The Solar Power Project would provide 5-MW energy through a photovoltaic (PV) system, consisting of solar panels, a racking system, inverters, electrical equipment, and conduit and wiring. The facility, at full buildout would occupy an area that is approximately 40 acres (Figure 3). The solar project would interconnect to an existing District-owned 12.47-kilovolt (kV) distribution line adjacent to the District's Pond Road substation, and across from an existing PG&E substation. The Proposed Action would support the District's ongoing efforts to generate energy to supplement the District's energy supply.

Construction activities include the following:

- Clearing, grubbing, and minor site grading over entire site
- Construction of racking system, including driving piers into the ground and erecting steel support structures
- Construction of electrical equipment pads and installing inverters, switchgear, transformer, and other electrical equipment
- Trenching and installing PVC conduit
- Trenching and installing of water line and appurtenances
- Installation of PV modules
- Erection of chain-link perimeter fence and gates

Site preparation would begin with initial clearing and grubbing of the site to install the racking system and support framing. Pickup trucks with generators, rivet guns, and miscellaneous hand tools would be used to secure modules to steel support frames. Solar panels would be delivered and stored on-site.

The District would follow their existing Operations and Maintenance program that includes the application of approved herbicides and disking for vegetation maintenance. Construction would be confined to areas within the solar site project boundary which is maintained regularly by disking (Photo 2). Construction for all 40 acres would occur in phases, beginning in the fall of 2017, and continuing for 3 years.



Photo 3: Solar Power Project site.

2.2.3 Lateral Canal Lining Project

The District would line approximately 3.75 miles of existing conveyance ditches at their Pond-Poso Spreading and Recovery Facility (Pond-Poso facilities), with a plastic impervious material. The conveyance ditches are approximately 3 feet deep, 4 feet wide with 1:1 side slopes. The Pond-Poso facilities have been in operation since 2007 as a recharge facility for the underlying groundwater basin during wet years. During dry years, groundwater is pumped by District wells located with the facilities, and conveyed through the unlined ditches to the District's Pond-Poso Canal (Photo 3).

Lateral Canal Lining construction activities at the Pond-Poso facilities include preparation of the subsurface of the existing ditches by minor excavation to level the surface. Excavated material would be used onsite to secure the liner. Construction activities would be no different from the District's current maintenance activities except for placement of the plastic liner.

Operation and maintenance of the conveyance ditches will include sediment and debris removal, repairing liner tears, replacement of deteriorated linings, re-anchoring liner edges and/or resealing liner seams.

Construction is expected to begin in the fall of 2017, and be completed within 3 months.



Photo 4: Pond-Poso Spreading and Recovery Facility Conveyance Ditch.

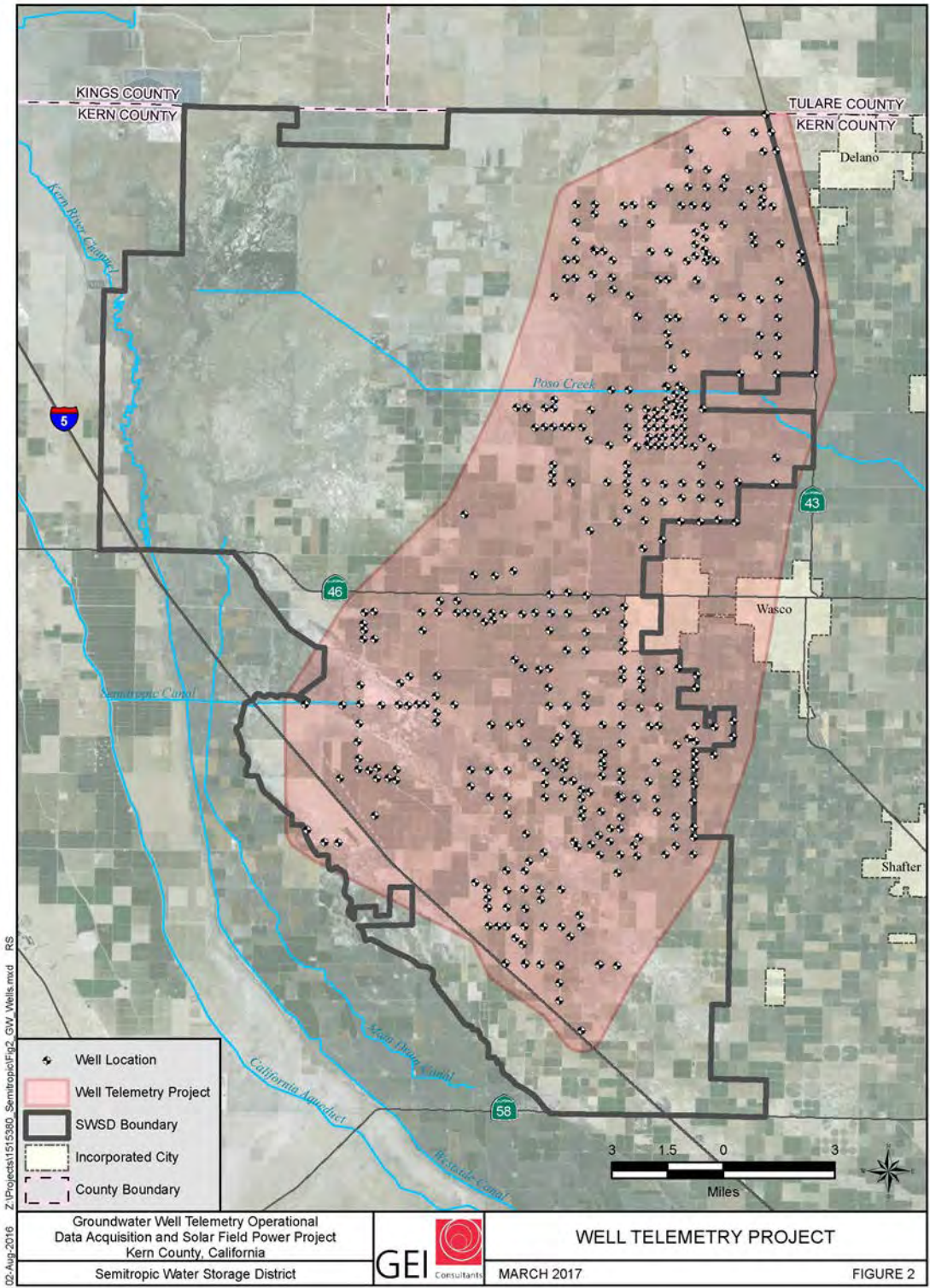


Figure 2: Semitropic Groundwater Well Operational Data Acquisition Project.



Figure 3: Semitropic Solar Power Project.

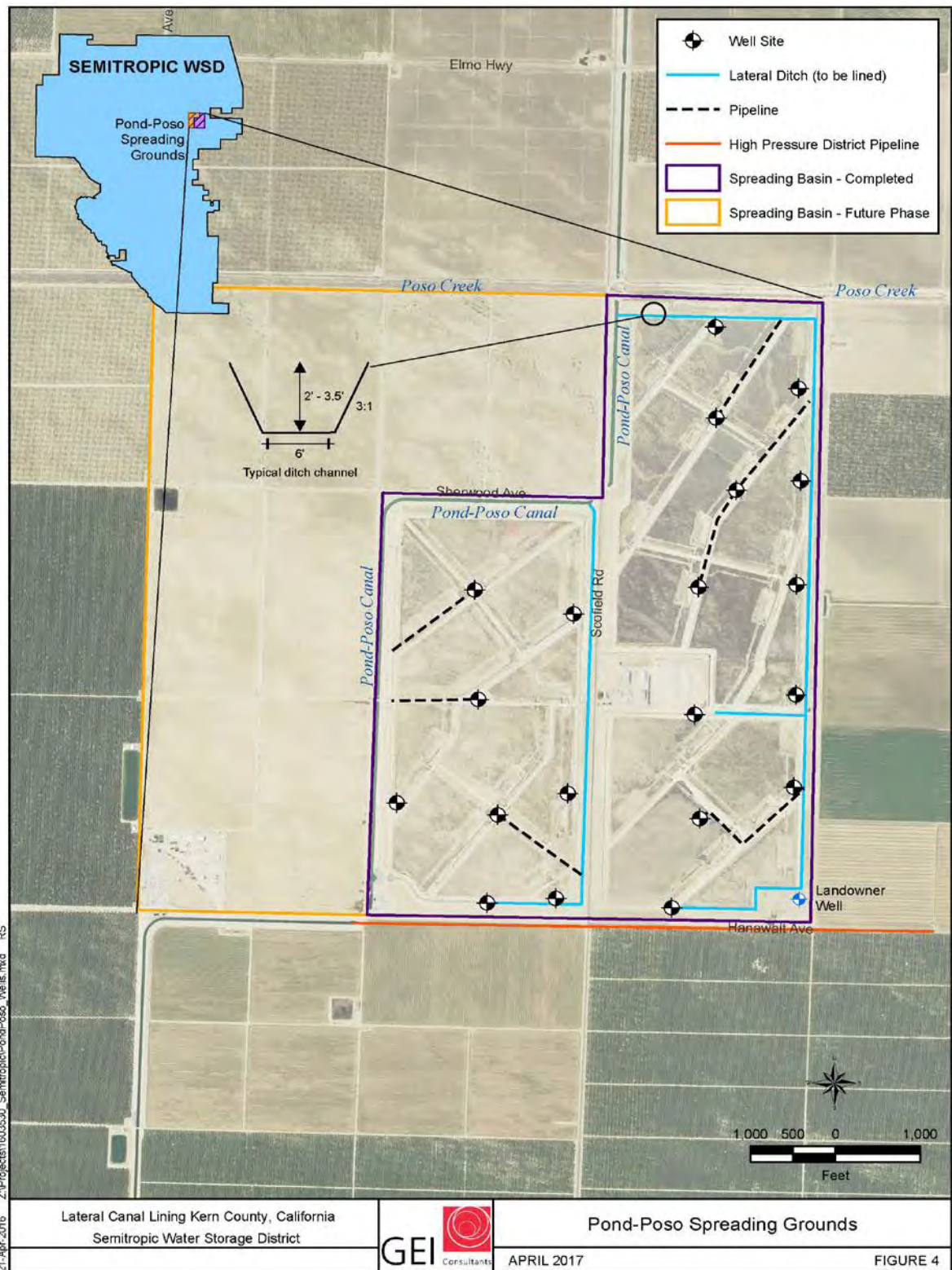


Figure 4: Lateral Canal Lining Project at the Pond-Poso Facilities.

Environmental Commitments

As part of the Proposed Action, SWSD staff and its contractors would implement the following Avoidance and Minimization Measures prior to and during construction activities to avoid and reduce environmental impacts:

Air Quality

The District would develop a Dust Control Plan as prescribed and approved by the San Joaquin Valley Air Pollution Control District (SJVAPCD) to minimize and control fugitive dust during construction.

Biological

Conservation measures are recommended for the Project to avoid, reduce, or eliminate potential adverse effects to the federally-listed San Joaquin kit fox, Tipton kangaroo rat, Blunt-nosed leopard lizard, and Kern mallow.

Specific measures for the Kern mallow only apply to two Groundwater Well Operational Data Acquisition sites, wells PP1031GW and PP1041DGW.

1. An Environmental Awareness Program would be presented to all Project personnel prior to any construction activity. The program would consist of a brief presentation in which biologists knowledgeable of endangered species biology and legislative protection would explain endangered species concerns. The program would address the federally-listed San Joaquin kit fox, Tipton kangaroo rat, blunt-nosed leopard lizard, and Kern mallow. Species biology, habitat needs, status under the Endangered Species Act (ESA), and measures being incorporated for the protection of these species and their habitats would be addressed.
2. No more than 14 days prior to construction, a qualified biologist would conduct a final pre-construction biological survey to determine the potential for listed species to occur in the Project area or immediate vicinity.
 - a. If no burrows, dens, or listed species are identified within the boundaries of the Project sites, then construction activities may proceed.
 - b. If burrows or dens that may potentially be used by listed species are found in a Project site or adjacent habitat during pre-construction surveys, then exclusion zones would be established. All burrows and dens would be avoided by Project activities and a minimum 50-foot no-disturbance area would be maintained.

- c. If a listed animal species or sign of a listed species is found, or if burrow avoidance and exclusion zones cannot be maintained, the U.S. Fish and Wildlife Service (USFWS) would be notified immediately to discuss federal requirements to proceed with the Project.
 - d. If suitable burrows that may serve as potential refugia for blunt-nosed leopard lizard are detected and cannot be avoided, or a 50-foot avoidance buffer cannot be maintained, then additional surveys to detect the species will be completed in accordance with the California Department of Fish and Wildlife's (CDFW) Approved Survey Methodology For The Blunt-Nosed Leopard Lizard, or other current guidance. Protocol level surveys will be completed the year prior to construction, if burrow avoidance is not feasible
3. Surveys will be conducted in the appropriate blooming period (February-May) prior to construction at 2 groundwater well sites, PP1031GW and PP1041DGW, where Kern mallow was observed:
 - a. If no Kern mallow plants or populations are present within the boundaries of the well sites, then project activities may proceed.
 - b. If plants or populations of Kern mallow are present in the project sites or buffer areas, flagging would be used to identify the population(s). Kern mallow plants would be avoided by project activities and no disturbance would be permitted within 50 feet.
 - c. If Kern mallow is found during pre-construction surveys, or if exclusion zones cannot be maintained, the USFWS would be notified immediately to discuss federal requirements to proceed with the project.
4. The District will designate a Project representative as the contact for any employee or contractor who finds a dead, injured, or entrapped San Joaquin kit fox, Tipton kangaroo rat, or blunt-nosed leopard lizard.
5. All vehicle operators will check under vehicles and equipment prior to operation, or if left idle. If wildlife is found under idle vehicles or equipment in the Project site, the individual(s) shall be allowed to leave on their own accord.
6. To prevent entrapment of San Joaquin kit fox or other animals during construction, or operation and maintenance, all excavated steep-walled holes or trenches less than five feet in depth shall be covered at the close of each day by plywood or similar material. For trenches that cannot be

closed daily, one or more escape ramps constructed of earth fill or wooden planks shall be installed and secured at the top for stability. Ramps would be located at no greater than 500-foot intervals and at no less than 45-degree angles.

- i. All covered or uncovered excavations shall be inspected at the beginning, middle, and end of each work day and non-work day.
 - ii. Before such holes or trenches are filled they will be thoroughly inspected for trapped animals.
 - iii. If at any time a trapped or injured animal is discovered, escape ramps or structures should be installed immediately to allow the animal(s) to escape. If any listed species is discovered during Project activities, the USFWS will be contacted immediately.
7. All pipes, culverts, or similar structures stored at the proposed Project site overnight having a diameter of four inches or greater will be inspected thoroughly for wildlife species before being buried, capped, or otherwise used or moved in any way. Pipes laid in trenches overnight will be capped. If during Project implementation a wildlife species is discovered inside a pipe, that section of pipe will not be moved or, if necessary, moved only once to remove it from the path of project activity, until the wildlife species has escaped.
8. All food-related trash items such as wrappers, cans, bottles or food scraps generated during project activities will be disposed of only in closed containers and removed daily from the proposed Project site. No deliberate feeding of wildlife will be allowed.
9. To prevent harassment or mortality of wildlife species via predation, or destruction of their dens or burrows, no domestic pets will be permitted on the Project site.
10. To prevent ingestion by or exposure to non-target species, the use of rodenticides in the Project site is prohibited.
11. The District will implement the following measures adapted from the USFWS Standardized Recommendations For Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance to protect San Joaquin kit fox:

- a. Construction and other project related activities should avoid den(s) that could be used by San Joaquin kit fox.
 - b. If dens are identified during pre-construction surveys that may be used by San Joaquin kit fox, protective exclusion zones will be established prior to Project activities.
 - c. If a natal/pupping den is discovered within the Project site or 500-foot buffer area, the USFWS will be notified. Natal/pupping dens may not be destroyed while occupied.
 - d. Destruction of any known or natal/pupping kit fox den requires take authorization/permit from the USFWS and CDFW.
 - e. To ensure protection of known dens, exclusion zones should be established 100 feet from the den entrance(s) with fencing that does not prevent access to the den by kit foxes. Acceptable fencing includes untreated wood particle-board, silt fencing, or orange construction fencing, installed with 1-foot gaps for every 10 feet of fencing.
 - f. For potential and/or atypical dens, placement of four to five flagged stakes 50 feet from the den entrance(s) will suffice to identify the den location; fencing will not be required, but the exclusion zone must be observed.
 - g. Exclusion zones around kit fox dens will be maintained until all construction related disturbances have been completed. At that time all fencing will be removed to avoid attracting subsequent attention to the dens.
 - h. Only essential vehicle operation on existing roads and foot traffic should be permitted in exclusion zones. Otherwise, all construction, vehicle operation, material storage, or any type of surface-disturbing activity should be prohibited or greatly restricted within the exclusion zones.
12. If potential San Joaquin kit fox dens are identified that cannot be avoided by construction activities, the following measures will be implemented:
- a. Potential dens will be monitored for three consecutive nights with tracking medium or an infra-red camera beam to determine the current use. If no kit fox activity is observed during this period, the den(s) will be destroyed immediately to preclude subsequent use.

- b. If kit fox activity is observed at the den(s) during this period, the den(s) should be monitored for at least five consecutive nights from the time of the observation to allow any resident animal to move to another den during its normal activity. Only when the den(s) are determined unoccupied may the den(s) be excavated.
 - c. Destruction of the den(s) should be accomplished by careful excavation until it is certain that no kit foxes are inside. The den(s) should be fully excavated, filled with dirt and compacted to ensure that kit foxes cannot reenter to use the den during the construction period. If at any point during excavation, a kit fox is discovered inside the den, the excavation activity will cease immediately and monitoring the den as described above should resume. Destruction of the den may be completed when, in the judgment of the biologist, the animal has escaped, without further disturbance, from the partially destroyed den.
13. All perimeter fencing installed around the solar facility will be raised 5 to 7 inches above ground level and knuckled under to allow for movement of San Joaquin kit fox through the Project site.
14. Construction activities would occur during daylight hours (30 minutes prior to sunrise until 30 minutes after sunset).
15. Project speed limits would be limited to 20 miles per hour where habitat was observed.
16. All sightings of listed species would be reported immediately to the USFWS.

2.2.4 Best Management Practices

In addition to the Avoidance and Minimization Measures specific to federally-listed species identified in Section 3.1.1, the following Best Management Practices (BMPs) would be implemented by SWSD and contractors working on the Proposed Action to further minimize and avoid effects to sensitive species and air quality during construction activities:

- All spills of hazardous materials shall be cleaned up immediately
- Pets and firearms are prohibited on the construction site
- The SWSD shall appoint a representative who would be the point of contact; the representative would be identified during the preconstruction educational briefing

- Work boundaries would be delineated with flagging, temporary exclusionary fencing or other marking to minimize surface disturbance associated with Project activities
- The area of disturbance would be reduced to the smallest practical area, considering topography, placement of facilities, location of burrows, nesting sites or dens, public safety, and other limiting factors
- Laydown areas, existing access roads, and areas that are disturbed through construction, would be used to stockpile excavated materials, storage of equipment, trailer placement, and vehicle parking.
- All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, or covered with a tarp or other suitable cover or vegetative ground cover
- All land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities shall be effectively controlled of fugitive dust emissions utilizing application of water or by presoaking
- When materials are transported offsite, all material shall be covered or effectively wetted to limit visible dust emissions, and at least 6 inches of freeboard space from the top of the container shall be maintained
- Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, the piles would be effectively stabilized of fugitive dust emissions utilizing sufficient water stabilizer/suppressant

3. Affected Environment & Environmental Consequences

This section of the EA provides the analysis of impacts from implementing the alternatives.

3.1 Biological Resources

The ESA of 1973, as amended, establishes a national program for the conservation of threatened and endangered species of fish, wildlife, and plants and the preservation of the ecosystems upon which they depend. Section 7 of the ESA requires federal agencies to consult with the USFWS and/or the National Marine Fisheries Service on activities that may affect any species federally-listed as threatened or endangered to ensure that their action(s) do not jeopardize the continued existence of those species, or result in the destruction or adverse modification of their critical habitat.

3.1.1 Affected Environment

This section addresses federally-listed threatened or endangered species ESA that may occur in the Proposed Action areas: Groundwater Well Operational Data Acquisition, Solar Power and Lateral Canal Lining Project areas. The potential for federally-listed species to be present in the Proposed Action areas are based on historic observations, known occurrences in proximity, and habitat conditions that were observed at the time of biological surveys. Federally-listed species that may be affected by the Proposed Action are identified in Table 1.

Biological surveys were conducted for the Groundwater Well Operational Data Acquisition sites in March and April of 2016; the Solar Power site in November of 2015 and March of 2017; and Lateral Canal Lining site in 2006, 2010, and in May of 2017. The Proposed Action areas are composed of primarily disturbed, compacted and disked soils and devoid of vegetation. The District maintains the Proposed Action areas by plowing and disking every 3 years in dry years, and once a year in wet years. Wildlife use is limited due to frequent disturbance and the lack of vegetation, or monocultural and weedy nature of plant community. However, sensitive vegetation communities that have been documented near the Proposed Action areas and include Valley Saltbush Scrub and Valley Sink Scrub (CDFW 2016). Valley saltbush scrub and sink scrub habitats were present in uncultivated lands within 500 feet groundwater well sites. These habitat types may serve as potential for federally-listed species in the southern San Joaquin

Valley including, but not limited to, San Joaquin kit fox, Tipton kangaroo rat, Blunt-nosed leopard lizard, and the Kern mallow.

No perennial or intermittent streams, designated wetlands, riparian areas, or vernal pools were observed within the boundaries of the Project sites.

Designated Critical Habitat

The Goose Lake Unit 2 is in the southwest portion of the District's Service Area. Critical Habitat Unit 2 is managed by the District as a ground-water recharge basin and owned by Goose Lake Holding Company. One groundwater well, E68DGW, is located within Critical Habitat Unit 2 for the Buena Vista Lake ornate shrew (Figure 6). Photographs (Photographs 9 and 10) taken in April of 2016 at groundwater well E68DGW are included in Appendix A.

The Buena Vista Lake ornate shrew lives in dense vegetation around the perimeter of marshes, lakes or sloughs. The species prefers moist soil and uses stumps, logs, and litter for cover. Essential habitat for the Buena Vista Lake ornate shrew contains riparian and wetland vegetation communities with dense herbaceous cover and an abundance of leaf litter (Williams and Harpster 2001). USFWS has determined that the Buena Vista Lake ornate shrew requires three primary constituent elements (PCEs): 1) Riparian or wetland communities 2) Suitable moisture supplied by a shallow water table, irrigation, or proximity to permanent or semi-permanent water, and 3) a consistent and diverse supply of prey.

Table 1: Federally-Listed Species That May Occur in the Proposed Action Areas.

Common Name	Scientific Name	Federal Status	Habitat/Requirements	Potential to Occur in Proposed Action Area
Tipton kangaroo rat	<i>Dipodomys nitratoides nitratoides</i>	FE	Saltbush scrub and sink scrub communities in the Tulare Lake Basin of the Southern San Joaquin Valley. Requires soft, friable soils which escape seasonal flooding. This species digs burrows in elevated soil mounds often at the bases of shrubs.	Low Potential. Tipton kangaroo rat has been historically documented in areas of suitable habitat in the region. The species may be present in areas of potential habitat within 500 feet of 45 groundwater well sites. Potential habitat is present in uncultivated lands 0.1 miles northwest and 1.0 miles south of the Solar Power site. No suitable habitat for Tipton kangaroo rat was observed within the construction footprint of the Proposed Action areas.
San Joaquin kit fox	<i>Vulpes macrotis mutica</i>	FE	Inhabit annual grasslands or grassy open stages with scattered shrubby vegetation. Require loose-textured sandy soils for burrowing, and a suitable prey base.	Low Potential. San Joaquin kit fox is known to occur in the region. Numerous kit fox observations, dens, and road kills have been documented in the California Natural Diversity Data Base. The species may be present in areas of potential habitat within 500 feet of 45 groundwater well sites. California ground squirrel burrows were found along the Pond-Poso conveyance ditch banks that may serve as potential for San Joaquin kit fox.
Blunt-nosed leopard lizard	<i>Gambelia sila</i>	FE	Resident of sparsely vegetated alkali and desert scrub habitats, in areas of low topographic relief. Seeks cover in mammal burrows, under shrubs or structures such as fence posts. May excavate their own burrows, but typically utilize small mammal or other lizard burrows.	Low Potential. Blunt-nosed leopard lizard was historically recorded in the region. The species may be present in areas of potential habitat within 500 feet of 45 groundwater well sites. Potential habitat is present in uncultivated lands 0.1 mile northwest and 1.0 mile south of the Solar Power site. An adult blunt-nosed leopard lizard was found approximately 0.5 mile from the Solar Power site in February 2016. No suitable habitat for Blunt-nosed leopard lizard was observed within the construction footprint of the Proposed Action areas.
Kern mallow	<i>Eremalche kernensis</i> (= <i>Eremalche parryi</i> ssp. <i>kernensis</i>)	FE	Chenopod scrub, valley and foothill grassland. Elevation range: 70-1,290 meters. Blooming period: March – May.	Observed. Kern mallow was observed in habitat within 500 feet of two groundwater well sites during biological surveys. No suitable habitat for Kern mallow was observed within the construction footprint of the Proposed Action areas.

Notes

FE = federally-listed as Endangered

FT = federally-listed as Threatened

Status, distribution, and habitat information from the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database RareFind 5 (CDFW 2016) and the USFWS Information, Planning, and Conservation System Trust Resource Report (USFWS 2016).

3.1.2 Environmental Consequences

3.1.2.1 No Action

Under the No Action Alternative, Reclamation would not award SWSD with water and energy conservation grants to help fund the Project. The District would continue with current operations and implement other water and energy conservation projects as funding becomes available.

3.1.2.2 Proposed Action

Federally-listed Species and Potential Habitat

No federally-listed threatened or endangered species were present within the Proposed Action construction footprint. Soils at all Project locations are maintained and compacted, and lack suitable habitat with required features for Tipton kangaroo rat, San Joaquin kit fox, Blunt-nosed leopard lizard, and the Kern mallow (Photos 1-4). All construction activities for the Proposed Action would occur in disturbed and compacted soils that are devoid of vegetation and habitat characteristics that would support federally-listed species.

Sensitive vegetation communities that have been documented near the Project areas include Valley Saltbush Scrub and Valley Sink Scrub. Valley saltbush scrub and sink scrub habitats were present in uncultivated lands within 500 feet groundwater well sites. These habitat types may serve as potential for federally-listed species (Table 2). The Kern mallow was observed during biological surveys in potential habitat of two groundwater well sites: PP1031GW and PP1041DGW. No other federally-listed species were observed in the Proposed Action areas during biological surveys. No indicators of utilization such as burrows, scat, and claw marks were observed within the Proposed Action areas.

Designated Critical Habitat

Well number E68DGW, and other existing groundwater well sites near Goose Lake, lack suitable habitat and do not contain PCEs that are required for Buena Vista Lake ornate shrew that are essential to the species' conservation. The Project would not result in impacts to potential habitat with PCEs; therefore, the Project would result in no effect to designated critical habitat for Buena Vista Lake ornate shrew. Conservation measures incorporated into the Project Description would be implemented by the District for the Project to avoid adverse effects to designated critical habitat for Buena Vista Lake ornate shrew.

Environmental Commitments (Section 2.2.1) that include pre-construction surveys during the appropriate blooming period; environmental awareness training to workers; and flagging plant populations for avoidance are designed to eliminate adverse effects to the Kern mallow. Additionally, Environmental Commitments were included to protect transient federally-listed species and other

wildlife that may travel through Project sites during construction. Therefore, the Proposed Action is not expected to have an impact on federally protected species.

Table 2: Existing Groundwater Well Sites Where Conservation Measures are Recommended to Protect Federally-Listed Species.

Semitropic Water Storage District Groundwater Sites for Pre-Construction Surveys and Conservation Measures	
2008-22-S	L16GWA
3DGW	L84GW
20BGWB	L128GW
38CGW	L206GW
B10DGW	N1DGW
B140GW	PP720GW
B155GW	PP743GW
BR9GW	PP1031GW
BR49GW	PP720DGW
BR69GW	PP731DGW
BR80GW	PP888DGW
E28DGW	PP1030ADGW
E55DGW	PP1030BDGW
E68DGW	PP1030CDGW
E106GWA	PP1030DDGW
G37GW	PP1030EDGW
G93GW	PP1030FDGW
IC211GW2	PP1041DGW
IC211GW3	R56GW
IC283GW	S29DGW
IC336DGW	U74GW
J73GW	U86GW
J17GW	

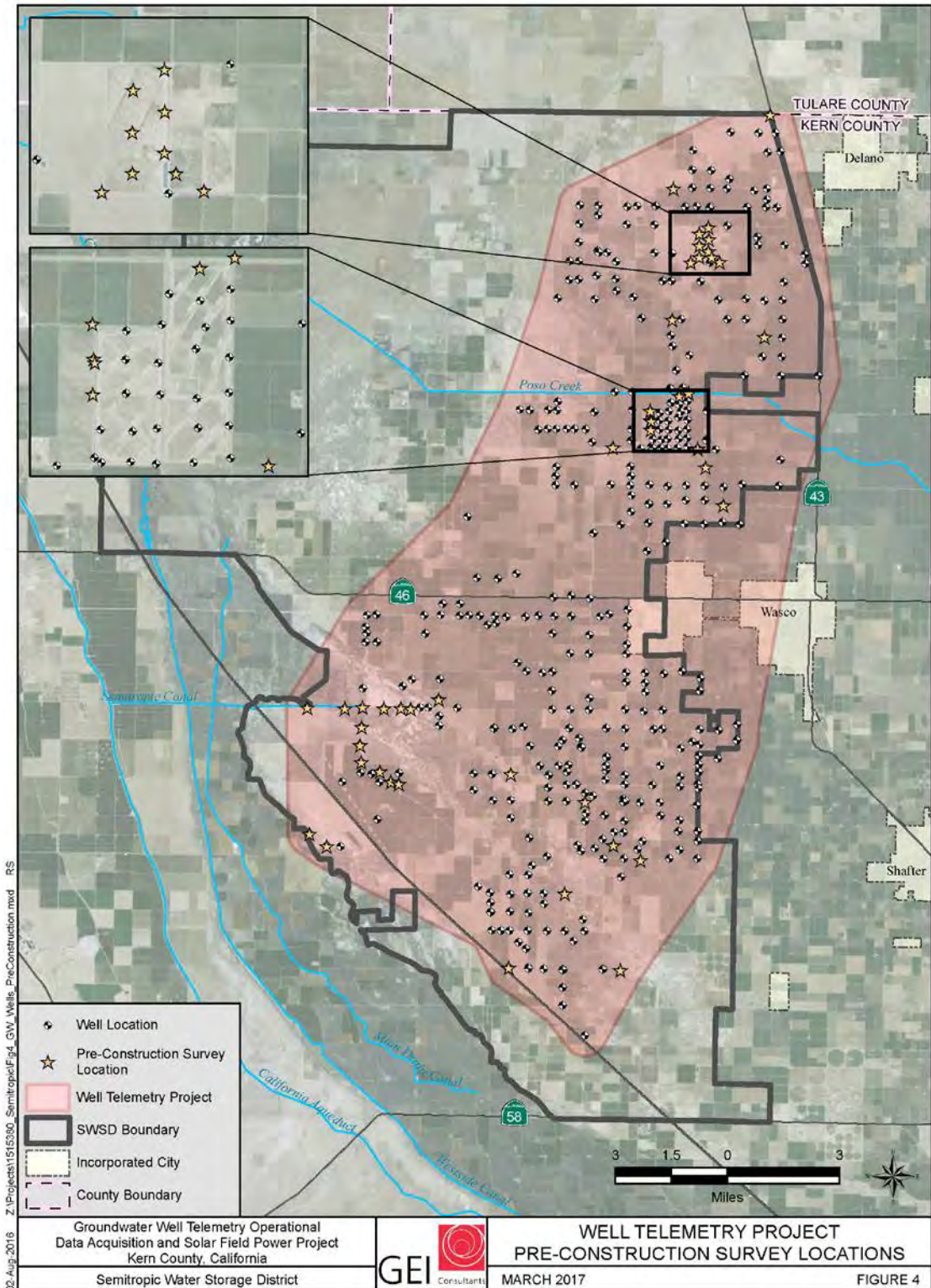


Figure 5: Groundwater Well Operational Data Acquisition Locations Requiring Pre-Construction Surveys and Conservation Measures.

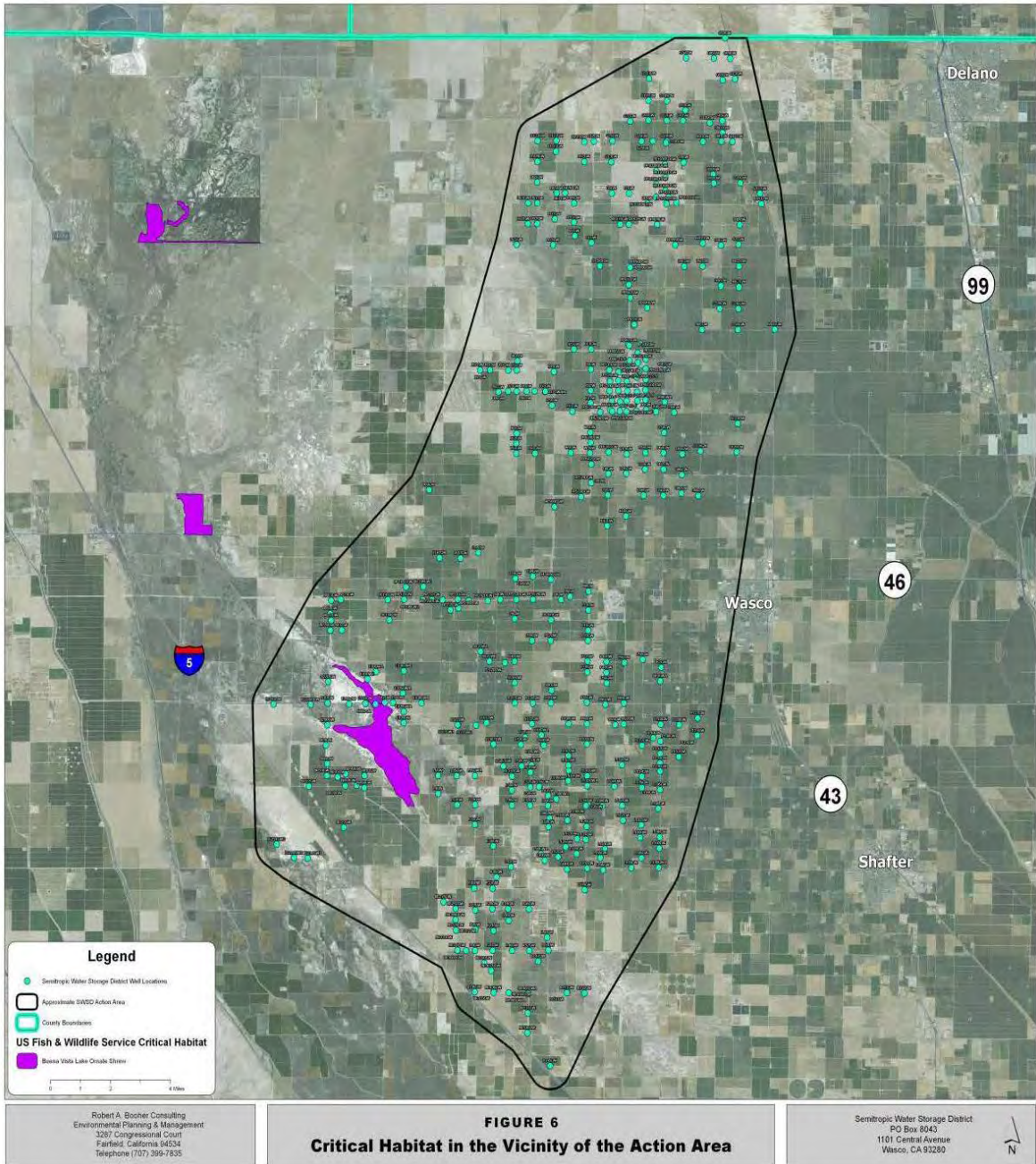


Figure 6: Groundwater Well Operational Data Acquisition Locations in the Vicinity of Buena Vista Buena Vista Lake ornate shrew Designated Critical Habitat.

3.2 Air Quality

Section 176 (c) of the Clean Air Act (CAA) (42 U.S.C. 7506 (c)) requires that any entity of the federal government that engages in, supports, or in any way provided financial support for, licenses or permits, or approves any activity to demonstrate that the action conforms to the applicable State Implementation Plan (SIP) required under Section 110 (a) of the CAA (42 U.S.C. 7401 (a)) before the action is otherwise approved. In this context, conformity means that such federal actions must be consistent with a SIP's purpose of eliminating or reducing the severity and number of violations of the National Ambient Air Quality Standards and achieving expeditious attainment of those standards. Each federal agency must determine that any action that is proposed by the agency and that is subject to the regulations implementing the conformity requirements would, in fact conform to the applicable SIP before the action is taken.

On November 30, 1993, the U.S. Environmental Protection Agency (EPA) promulgated final general conformity regulations at 40 Code of Federal Regulations (CFR) 93 Subpart B for all federal activities except those covered under transportation conformity. The general conformity regulations apply to a proposed federal action in a non-attainment or maintenance area if the total direct and indirect emissions of the relevant criteria pollutant(s) and precursor pollutant(s) caused by the Proposed Action equal or exceed certain threshold amounts, thus requiring the federal agency to make a determination of general conformity.

The California San Joaquin Valley Air Pollution Control District (SJVAPCD) has established thresholds of significance for criteria pollutant emissions at the project level (SJVAPCD 2017). Projects that fit the descriptions and project sizes provided in Table 4 are deemed to have a less than significant impact on air quality. Since the SJVAPCD-recommended thresholds are the same or lower than the federal thresholds, the pre-quantified emissions will be used to determine whether the Project emissions would be below the thresholds and if a federal general conformity report is required or not. There are no sensitive receptors in the area as it is remote and with very few residents.

3.2.1 Affected Environment

The Proposed Action is located within the southern San Joaquin air-shed, surrounded by agricultural fields, dirt roads and earthen canals to convey water for irrigation. The San Joaquin air-shed is in non-compliance for federal and state air quality standards for ozone, one (no federal standard) and eight hour, and Particulate Matter (PM) 10 microns or less and PM 2.5 microns or less (SJVAPCD 2017). Ozone is primarily a product of more concentrated motor

vehicle traffic on a regional scale. Particulate matter is generated from vehicle tailpipes, industry, wood combustion and fugitive dust from unpaved surfaces.

Table 3: Small Project Analysis Level by Vehicle Trips.

Land Use Category	Project Size
Residential Housing	1,453 trips/day
Commercial	1,673 trips/day
Office	1,628 trips/day
Institutional	1,707 trips/day
Industrial	1,506 trips/day

Source: SJVAPCD 2017

3.2.2 Environmental Consequences

3.2.2.1 No Action Alternative

Under the No Action Alternative, Reclamation would not award SWSD with water and energy conservation grants to help fund the Project. The District would continue with current operations and implement other water and energy conservation projects as funding becomes available.

3.2.2.2 Proposed Action

The Proposed Action would involve the use of approximately four to seven vehicles to deliver employees and materials to each location. Seven vehicles traveling to and from the construction sites, two round-trips per vehicle, would total up to 28 vehicle trips per day. Typical construction vehicles include employee work trucks, excavators, a concrete mixer and dump trucks. Short-term air quality impacts would be associated with construction, and would generally arise from dust generation and operation of construction equipment. Using project size and type based on the Small Project Analysis Level in Table 3, SWSD's Proposed Action would not exceed California's established significance threshold of 1,673 vehicle trips a day for commercial projects.

The primary air quality concern for the Proposed Action is PM emissions from ground disturbance and vehicular traffic on unpaved surfaces. The District would develop a Dust Control Plan as prescribed and approved by the SJVAPCD to minimize and control fugitive dust during construction.

Considering that the Proposed Action would result in vehicle trips well below that of the associated SJVAPCD categories, Project emissions would be below the thresholds; therefore, a federal general conformity analysis report is not required. With the employment of Dust Control Plan, the Proposed Action is not expected

to contribute substantially to existing levels of particulate matter or conflict with the SJVAPCD's Air Quality Plan.

3.3 Cultural Resources

“Cultural resources” is a broad term that includes prehistoric, historic, architectural, and traditional cultural properties. Title 54 U.S.C. 300101 et seq., formerly and commonly known as the National Historic Preservation Act (NHPA) is the primary legislation for federal historic preservation. Section 106 of the NHPA (54 U.S.C. 306108) requires federal agencies to take into consideration the effects of their undertakings on historic properties and to afford the Advisory Council on Historic Preservation an opportunity to comment. Historic properties are those cultural resources that are listed on or eligible for inclusion in the National Register of Historic Places (National Register). The implementing regulations at 36 CFR Part 800 for Section 106 describe the process that the federal agency takes to identify historic properties within the area of potential effects and to assess the effects that the proposed undertaking would have on those historic properties, through consultations with the California State Historic Preservation Officer (SHPO), Indian Tribes, and other identified consulting and interested parties.

Reclamation proposes to award grants to SWSD to construct the Proposed Action. The expenditure of federal funds is an undertaking as defined in 36 CFR § 800.16(y) and is a type of activity that has the potential to cause effects on historic properties under 36 CFR § 800.3(a).

3.3.1 Affected Environment

A records search was conducted by Reclamation and GEI Consultants at the Southern San Joaquin Valley Information Center at California State University for the Groundwater Well Operational Data Acquisition well locations. The search criteria included a 0.25-mile buffer that encompassed all well locations (Figure 2) and a 30-foot diameter Area of Potential Effect (APE) for each well location.

Twenty-eight previously recorded resources were identified; five of the resources are isolated prehistoric artifacts and one is an historic-era artifact. Eighteen of the resources are prehistoric sites. The majority of the prehistoric sites consist of lithic scatters containing debitage and few formal tools. The four remaining sites are from the historic-era and consist of a bridge, an old road alignment, a small mound of imported fill material, and an historic-era trash scatter.

GEI Consultants used three categories to determine each well location's archaeological sensitivity: visual observation; review of a confidential records search; and a geoarchaeological review of soils data. A score for each category

was determined for each specific well location and tallied. The investigation identified 58 different well locations that are recommended for pedestrian archaeological surveys.

UltraSystems Environmental Inc. conducted a records search at the California Historical Resources Inventory System Information Center for the Solar Power Project. The research area included the 40-acre parcel Solar Power site and a ½ mile buffer. Based on the records search, one cultural resource, a historic trash scatter, was identified within the ½-mile radius of the Solar Power site. The site has not been recommended for listing on the County Register nor is it considered eligible for the National Register. Eight isolate lithic tools and shatter and four isolate historic glass fragment were recorded approximately 1,000 to 1,200 feet west outside the ½ mile buffer zone of the Solar Power site. An historic irrigation canal associated with the Alpaugh Irrigation District is approximately 1,300 feet west of the ½ mile buffer zone.

Three Girls and a Shovel, LLC conducted a records search of the Pond-Poso Spreading and Recovery Facility (USBR 2010). The search area included the lateral canals within the Pond-Poso facilities that are the subject of the current undertaking. The research indicated that the site had not previously been investigated for cultural resources and no cultural resources were recorded within the APE.

None of the previously identified sites from the records search are within the APE of the Proposed Action areas.

3.3.2 Environmental Consequences

3.3.2.1 No Action Alternative

Under the No Action Alternative, Reclamation would not award SWSD with water and energy conservation grants to help fund the Project. The District would continue with current operations and implement other water and energy conservation projects as funding becomes available.

3.3.2.2 Proposed Action

GEI conducted a pedestrian survey for the 58 sites identified in the archeological sensitivity analysis for the Groundwater Well Operational Data Acquisition Project in January of 2017. No cultural resources and no archaeological deposits were identified during the cultural resources survey.

Ultrasystems Environmental Inc. conducted a pedestrian survey for the Solar Power site in November of 2017. No cultural resources and no archaeological deposits were identified during the cultural resources survey.

Three Girls and a Shovel, LLC conducted a pedestrian survey for the Pond-Poso facilities in October of 2009. No cultural resources and no archaeological deposits were identified during the cultural resources survey.

No cultural or historic resources would be affected by the Proposed Action.

3.4 Cumulative Impacts

According to Council on Environmental Quality regulations for implementing the procedural provisions of the National Environmental Policy Act, a cumulative impact is defined as the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 CFR 1508.7).

All greenhouse gas (GHG) emissions contribute to cumulative climate change impacts. The EPA mandatory reporting threshold for large sources of GHGs is 25,000 metric tons of CO₂ emitted annually (USEPA 2016). This threshold is approximately the amount of CO₂ generated by 5,281 passenger vehicles per year (EPA 2017). Comparatively, emissions from two to seven construction vehicles during project implementation would be considerably lower. Because these activities would be similar to existing conditions, for both construction and operation, and will be far below the threshold level of reporting emissions, the Proposed Action GHG emissions would not represent a substantial change and would not conflict with the Kern County's GHG emissions reduction program.

Activities associated with construction and operation of the Proposed Action are consistent with other practices in the area, and thus impacts to air quality, GHG emission levels would be minimal and temporary. No other projects are anticipated to be constructed in the immediate area at the same time as the Proposed Action. Furthermore, all activities relating to the Proposed Action are mostly temporary and related to construction. The Proposed Action would help achieve GHG emission reduction targets by generating energy from a solar panel array.

Conservation measures that include pre-construction surveys and avoidance would protect the federally-listed Kern mallow and potential habitat that exists within 500 feet of 45 groundwater well locations. The Kern mallow is located outside the construction footprint of the groundwater well sites and is not expected to become established within the disturbance footprint of the groundwater wells due to compacted and continuously disturbed soils. Therefore,

the Proposed Action would is not expected to negatively impact Kern mallow populations or reproduction.

Therefore, the Proposed Action would not result in a cumulatively considerable or significant cumulative impact.

4. Consultation & Coordination

4.1 Public Review

In accordance with the California Environmental Quality Act, SWSD conducted an Initial Study for the Solar Field Project. The Findings and the Mitigated Negative Declaration was submitted to the California State Clearinghouse (SCH #2016041053) on April 19, 2016. The District responded to comments from CDFW, clarifying the Solar Field Project features and mitigation measures.

Reclamation will have a 2-week public review period for this environmental assessment.

4.2 Agencies and Groups Consulted

Semitropic Water District, the U.S. Fish and Wildlife Service, and the California State Historic Preservation Office were consulted in the preparation of this EA.

4.3 Endangered Species Act (16 USC § 1531 et seq.)

Section 7 of the ESA requires Federal agencies, in consultation with the Secretary of the Interior, to ensure that their actions do not jeopardize the continued existence of endangered or threatened species, or result in the destruction or adverse modification of the critical habitat of these species. Reclamation sent a memorandum to the Service on July 28, 2016 requesting concurrence that the Proposed Action is not likely to adversely affect the San Joaquin kit fox, Tipton kangaroo rat, blunt-nosed leopard lizard, and Kern mallow. Reclamation revised the request with additional information on July 5, 2017. The Service concurred with Reclamation's request on August 31, 2017. (See Appendix C).

4.4 Cultural Resources

Title 54 U.S.C. § 306108, commonly known as Section 106 of the NHPA (formerly 16 U.S.C. 470 et seq.), requires federal agencies to consider the effects of their undertakings on historic properties, properties determined eligible for inclusion in the National Register, and to afford the Advisory Council on Historic Preservation an opportunity to comment. Compliance with Section 106 follows a series of steps, identified in its implementing regulations found at 36 CFR Part 800, that include identifying consulting and interested parties, identifying historic properties within the area of potential effect, and assessing effects on any identified historic properties, through consultations with the SHPO, Indian Tribes and other consulting parties. Reclamation entered into consultation with the

California State Historic Preservation Officer (SHPO) on July 14, 2017, notifying them regarding a finding of “no historic properties affected pursuant to 36 CFR § 800.4(d)(1).” SHPO responded on August 11, 2017 with no objections to Reclamations’ findings and determination. (Appendix B).

5. References

- CDFW. 2016. California Natural Diversity Database. Rare Find 5, for Commercial Subscribers. Habitat Planning and Conservation Branch. Electronic Database.
- Marzorati, G., 2017. California Lawmakers Move Toward New Renewable Energy Goals, <http://sfpublicpress.org/news-notes/2017-05/california-lawmakers-move-toward-new-renewable-energy-goals>.
- Semitropic Water Storage District Pond Road Solar Facility Project Initial Study and Mitigated Negative Declaration. 2016. (California State Clearinghouse [SCH]#2016041053).
- San Joaquin Valley Air Pollution Control District (SJVAPCD). 2017. Small Project Analysis Level. <http://www.valleyair.org/transportation/CEQA%20Rules/SPALTables61912.pdf>
- San Joaquin Valley Air Pollution Control District (SJVAPCD). 2017. <http://www.valleyair.org/aqinfo/attainment.htm>.
- University of California. 2017. Researchers track groundwater loss during drought in California's Central Valley. <https://phys.org/news/2017-05-track-groundwater-loss-drought-california.html>
- USBR (U.S. Bureau of Reclamation). 2010. Semitropic Water Storage District Pond-Poso Spreading and Recovery Facility Environmental Assessment No: 09-134
- USEPA (U.S. Environmental Protection Agency). 2016. GHG General Fact Sheet. <https://www.epa.gov/ghgreporting/ghg-general-fact-sheet>.
- USEPA (U.S. Environmental Protection Agency). 2017. Greenhouse Gas Equivalencies Calculator. <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>.
- USFWS (U.S. Fish and Wildlife Service) 2011. U.S. Fish and Wildlife Service Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior To or During Ground Disturbance. Prepared by the Sacramento Fish and Wildlife Office, January 2011. 9 p.

Williams, D.F. and A.C. Harpster. 2001. Status of the Buena Vista Lake shrew (*Sorex ornatus relictus*). Endangered Species Recovery Program, California State University, Stanislaus, California. 22 pp.

Appendix A

Indian Trust Assets Compliance

Indian Trust Assets Request Form (MP Region)

Submit your request to your office's ITA designee or to MP-400, attention Deputy Regional Resources Manager.

Date: 07/17/2015

Requested by	Alex Aviles, MP-152
Cost Authority (18 digits + 1)	Fund: 15XR0680A1 WBS Code: RX021488945SWSD00A
Cost Center (7 digits)	RR02015200
Region # if other than MP	N/A
Project Name	Semitropic Water Storage District Groundwater Well Operational Data Acquisition and Solar Power Project
CEC or EA Number	EA # 15-14-MP
Project Description (attach additional sheets if needed and include photos if appropriate)	Reclamation proposes to award a Bay-Delta Restoration Program: Agricultural Water Conservation and Efficiency Grant to the Semitropic Water Storage District to help fund the installation of 125 remote data acquisition systems on privately-owned groundwater wells and ancillary discharge pipes, as well as the construction of a 21-acre 390-kW solar power facility.
*Project Location (Township, Range, Section, e.g., T12 R5E S10, or Lat/Long coords). Include map(s)	Lat: 35.58481 Long: -119.49223 See attached maps.

04/13/2015

ITA Determination:

The closest ITA to the proposed construction of a 21-acre 390-kW solar power facility, and well modifications described above is the Santa Rosa Indian Community of the Santa Rosa Rancheria located about 46.5 miles to the northwest. (see attached image).

Based on the nature of the planned work it does not appear to be in an area that will impact Indian hunting or fishing resources or water rights nor is the proposed activity on actual Indian lands. It is reasonable to assume that the proposed action will not have any impacts on ITAs.



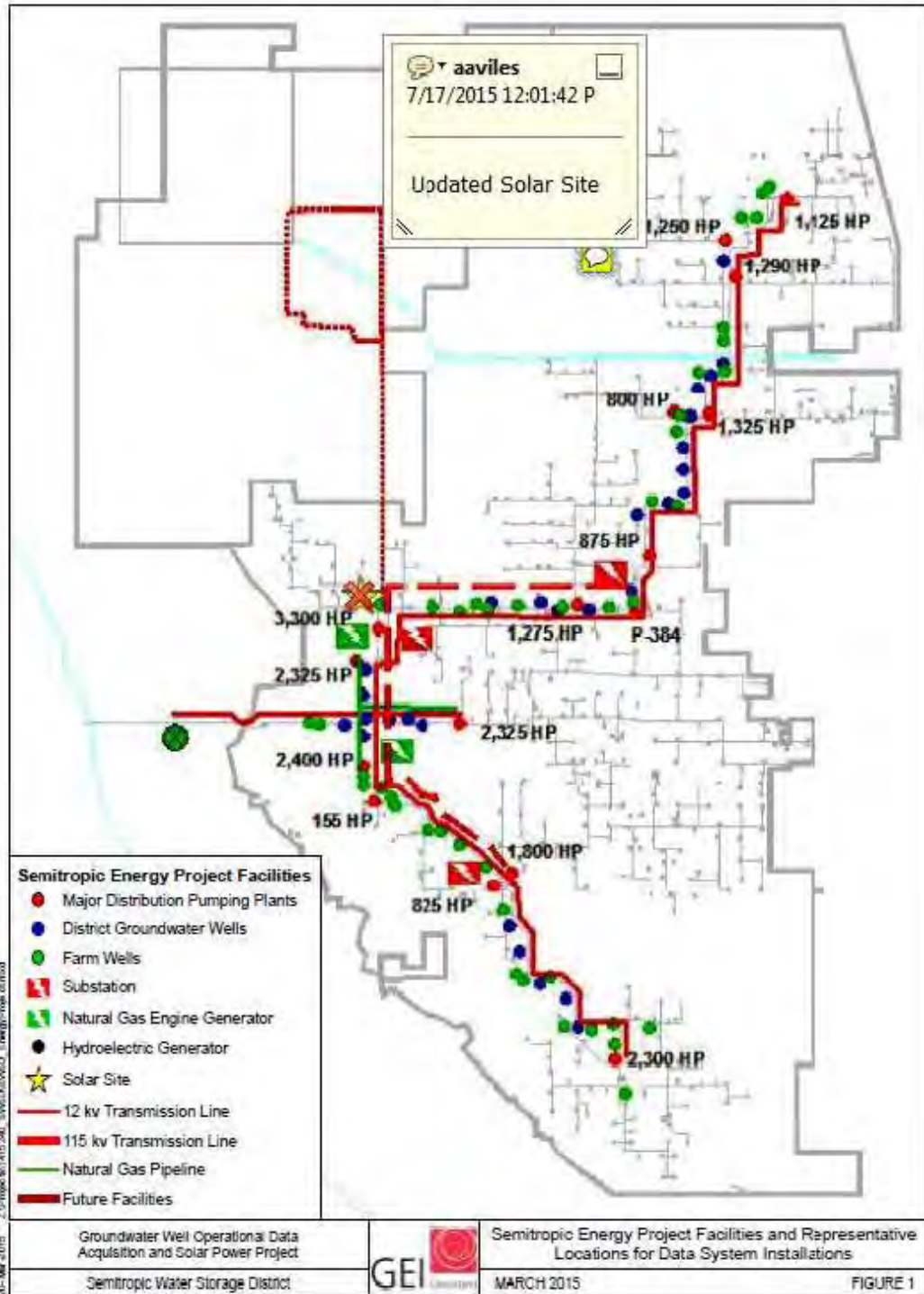
Richard M. Stevenson

7/20/15

Signature

Printed name of approver

Date



Semitropic WSD Grant ITA Map



 Region Boundaries

1:2,311,162

Project Location: x: -119.49223, y: 35.58481

Distance to closest ITA: 46.50 miles

Name: Santa Rosa

Tribe: Santa Rosa Indian Community of the Santa Rosa Rancheria

RECLAMATION
Managing Water in the West

Appendix B

Cultural Resources Compliance

CULTURAL RESOURCES COMPLIANCE
Division of Environmental Affairs
Cultural Resources Branch (MP-153)

MP-153 Tracking Number: 15-SCAO-191 and 17-SCAO-137

Project Names:

15-SCAO-191: Semitropic Water Storage District Groundwater Well Operational Data Acquisition and Solar Power Project Grant

17-SCAO-137: Semitropic Well extraction and Canal Lining Grant

NEPA Contact: Doug Kleinsmith, Natural Resource Specialist

NEPA Document: EA

MP 153 Cultural Resources Reviewer: Scott Williams, Archaeologist 

Date: September 6, 2017

15-SCAO-191: Semitropic Water Storage District Groundwater Well Operational Data Acquisition and Solar Power Project Grant

The Bureau of Reclamation is proposing to grant WaterSMART grant funding to the Semitropic Water Storage District (District) for construction of the proposed Groundwater Well Operational Data Acquisition and Solar Power Project in Kern County, California. This action constitutes an undertaking with the potential to cause effects to historic properties, assuming such properties are present, requiring compliance with Section 106 of the National Historic Preservation Act (NHPA) as amended.

The proposed project involves two components including construction of a new 390-kW commercial solar power production facility to be located on approximately 39.5 acres of land owned by the District and installation of data acquisition system units on 390 existing, privately owned groundwater wells and ancillary discharge pipes that tie into the District's primary conveyance network and discharge water directly to adjacent irrigated lands. The construction of the Solar Power Project will involve regrading of the ground surface, burying electrical line and array supports, and constructing an engineered surface and concrete pads for equipment. The data acquisition component involves attachment of relatively small units to approximately 390 existing water pumps. Trench sizes for the data acquisition component would be approximately 36 inches deep, up to 12 inches in width, and may extend up to 30 feet in length.

Based on historic properties identification efforts conducted by Martinez and Gardner of GEI Consultants (June of 2017) and O'Neil, Gold, Brady and Black of Ultra Systems (December 2015), Reclamation consulted with, and received concurrence from, the State Historic Preservation Officer (SHPO) on a finding of no historic properties affected pursuant to 36 CFR §800.4(d)(1). Consultation correspondence between Reclamation and the SHPO has been

provided with this cultural resources compliance document for inclusion in the administrative record for this action.

This document serves as notification that Section 106 compliance has been completed for this undertaking. Please note that if project activities subsequently change, additional NHPA Section 106 review, including further consultation with the SHPO, may be required.

Attachments:

Letter: Reclamation to SHPO dated August 4, 2017

Letter: SHPO to Reclamation dated September 1, 2017

17-SCAO-137: Semitropic Canal Lining Grant

The Bureau of Reclamation is proposing to grant WaterSMART grant funding to the Semitropic Water Storage District (District) for construction of the proposed line approximately 3.75 miles of existing conveyance ditches at their Pond-Poso Spreading and Recovery Facility (Pond-Poso facilities), with a plastic impervious material. This action constitutes an undertaking with the potential to cause effects to historic properties, assuming such properties are present, requiring compliance with Section 106 of the National Historic Preservation Act (NHPA) as amended.

The proposed conveyance ditches are approximately 3 feet deep, 4 feet wide with 1:1 side slopes. The Pond-Poso facilities have been in operation since 2007 as a recharge facility for the underlying groundwater basin during wet years. During dry years, groundwater is pumped by District wells located with the facilities, and conveyed through the unlined ditches to the District's Pond-Poso Canal (Photo 3). Lateral Canal Lining construction activities at the Pond-Poso facilities include preparation of the subsurface of the existing ditches by minor excavation to level the surface. Excavated material would be used onsite to secure the liner. Construction activities would be no different from the District's current maintenance activities except for placement of the plastic liner. The locations were the same as those consulted on in 2010. The current project in no way exceeds the area of previous consultation.

Based on historic properties identification efforts conducted by Pruett et. al (2009), Reclamation consulted with, and received concurrence from, the State Historic Preservation Officer (SHPO) on a finding of no historic properties affected (December 22, 2009; attached), pursuant to 36 CFR §800.4(d)(1). Consultation correspondence between Reclamation and the SHPO has been provided with this cultural resources compliance document for inclusion in the administrative record for this action. Reclamation has determined that the actions proposed for the current project are similar in scope and potential to effect historic properties to the previous consultation. Reclamation will retain the prior finding of No Historic Properties Affected for the current Undertaking and will not reopen Section 106.

CULTURAL RESOURCES COMPLIANCE
Division of Environmental Affairs
Cultural Resources Branch (MP-153)

This document is intended to convey the completion of the NHPA Section 106 process for this undertaking. Please retain a copy in the administrative record for this action. Should changes be made to this project, additional NHPA Section 106 review, possibly including consultation with the State Historic Preservation Officer, may be necessary. Thank you for providing the opportunity to comment.

Attachments:

Letter: Reclamation to SHPO dated December 10, 2009

Letter: SHPO to Reclamation dated December 22, 2009



IN REPLY REFER TO:

United States Department of the Interior

BUREAU OF RECLAMATION
Mid-Pacific Regional Office
2800 Cottage Way
Sacramento, CA 95825-1898

AUG 04 2017

MP-153
ENV-3.00

HAND DELIVERED

Ms. Julianne Polanco
State Historic Preservation Officer
Office of Historic Preservation
1725 23rd Street, Suite 100
Sacramento, CA 95816

Subject: National Historic Preservation Act (NHPA) Section 106 Consultation for the Semitropic Water Storage District Groundwater Well Operational Data Acquisition and Solar Power Project, Kern County, California (Project #15-SCAO-191)

Dear Ms. Polanco:

The Bureau of Reclamation is proposing to grant WaterSMART grant funding to the Semitropic Water Storage District (District) for construction of the proposed Groundwater Well Operational Data Acquisition and Solar Power Project in Kern County, California (Enclosure 1: Figure 1). The use of Federal funding constitutes an undertaking as defined in 36 CFR § 800.16(y) and is a type of activity that has the potential to cause effects on historic properties under 36 CFR § 800.3(a). On two prior occasions, Reclamation coordinated with your office in regarding this undertaking. Reclamation first coordinated with you in June of 2016 on the identification approach during a face-to-face meeting at your office and then again by email (Enclosure 2), in March and April of 2017, regarding the review of the proposed sensitivity model. We are entering into consultation with you on this undertaking and notifying you of our finding of no historic properties affected.

The proposed project involves two components including construction of a new 390-kW commercial solar power production facility to be located on approximately 39.5 acres of land owned by the District and installation of data acquisition system units on 390 existing, privately owned groundwater wells and ancillary discharge pipes that tie into the District's primary conveyance network and discharge water directly to adjacent irrigated lands. The construction of the Solar Power Project will involve regrading of the ground surface, burying electrical line and array supports as deep as 36 inches, and constructing an engineered surface and concrete pads for equipment. The data acquisition component involves attachment of relatively small units to approximately 390 existing water pumps (Enclosure 1: Figure 1a-Figure 4). Trench sizes for the data acquisition component would be approximately 36 inches deep, up to 12 inches in width, and may extend up to 30 feet in length. The length of trenches would depend on the location of the telemetry unit relative to the discharge and flowmeter at each location.

The area of potential effects (APE) for the proposed project consists of the two general components described above. The first component is the footprint of the 39.5 acre Solar Power Project, with an additional buffer of no less than 100 feet (Enclosure 1: Figures 1a and 2), to be located entirely within Sections 26 and 35 of T. 25 S., R. 23 E., Mount Diablo Meridian, as depicted on the Wasco NW, California, 7.5' U.S. Geological Survey topographic quadrangle map. The APE for the data acquisition includes the well pumps, trenches, and auxiliary discharge and flow meter, as well as a 25 foot work area around the components. The legal descriptions for the data acquisition system are provided within the legend box of Enclosure 1: Figure 1a. The maximum vertical APE will be approximately 36" deep for both components of the project, based on the depth of construction activities. In addition, a one-half mile indirect APE is considered for the Solar Power Project.

On behalf of Reclamation and the District, two independent historic property identification efforts for the proposed undertaking were completed by GEI Consultants (Enclosure 3) and UltraSystems (Enclosure 4). GEI Consultants completed a desktop sensitivity analysis for the proposed Groundwater Well Operational Data Acquisition portion of the project to determine each well location's archaeological sensitivity. The analysis included review of photographic resources, a records search, and a geoarchaeological review of soils data. In addition, they developed contextual documentation for a project historic context and research design. Due to the widely dispersed nature of the well locations, soil types and buried site sensitivity also differed greatly project wide. The majority of well locations (247) are located on low sensitivity soils, while 143 well locations are located on high sensitivity soils. The modeling identified 58 of the 390 well locations that were recommended for pedestrian archaeological survey. Due to the shallow vertical APE in cultivated fields, a preponderance of dirt roads and work pads, and the scope of the project, pedestrian surveys were deemed adequate for identification of buried resources. No historic properties were identified by GEI Consultants.

UltraSystems developed contextual documentation for the Solar Power Project, which included a records search, development of a historic context, research design, geo-archaeological modeling, and a pedestrian cultural resource survey. The age of the soils within the direct Solar Power Project APE are from the late Pleistocene or older (> 11,500 years in age) and have a very low sensitivity for cultural resources and buried sites. No historic properties were identified in the Solar Power Project.

Reclamation requested and received a Native American contact list and negative results of a review of the Sacred Lands File from the Native American Heritage Commission. Pursuant to the regulations at 36 CFR § 800.3(f)(2), Reclamation identified and contacted by letter (September 15, 2015) the Santa Rosa Indian Community of the Santa Rosa Rancheria (Santa Rosa Tribe); the Tejon Indian Tribe; and the Tule River Indian Tribe of the Tule River Reservation. Reclamation also identified Mr. Kenneth Woodrow of the Eshom Valley Band of Michahai Wuksache; Mr. Robert Robinson of the Kern Valley Indian Council; Ms. Delia Dominguez of the Kitanemuk and Yowlumne Tejon Indians; Mr. John Valenzuela San Fernando Band of Mission Indians; Mr. Julio Quair of the Chumash Council of Bakersfield; and Mr. Robert L. Gomez, Jr. of the Tubatulabals of Kern Valley, as individuals likely to have interest area in the project, pursuant to 36 CFR § 800.3(a)(3).

The only response received was from the Santa Rosa Tribe. Mr. Lalo Franco of the Santa Rosa Tribe responded by phone on January 25, 2017 and expressed his concern about the potential for

buried deposits in the Solar Power Project. Reclamation provided Mr. Franco and Ms. Shana Powers, also with the Santa Rosa Tribe, electronic versions of the reporting that addressed his concerns, with an attached explanation of the process and findings within the reporting. On February 14, 2017, Reclamation received a letter from Chairman Barrios of the Santa Rosa Tribe indicated that they would like to participate in the Section 106 process. Reclamation followed up with another email with reporting attached and a phone call on June 14, 2017, and another email on June 26, 2017, all with no response. Reclamation will notify your office as appropriate should any concerns subsequently arise.

Based on the above discussion and the enclosed documentation, Reclamation finds no historic properties affected for this undertaking pursuant to 36 CFR Part 800.4(d)(1). We invite your comments on our delineation of the APE and our efforts to identify historic properties. Reclamation is notifying you of our finding of no historic properties affected. Should a historic property be subsequently discovered during construction, Reclamation will comply with 36 CFR § 800.13 and consult with your office as required. If you have any questions or concerns, please contact Mr. Scott Williams, Archaeologist, at 916-978-5042 or sawilliams@usbr.gov if you have any questions.

Sincerely,



Anastasia T. Leigh
Regional Environmental Officer

Enclosures - 4

**OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION**

1725 23rd Street, Suite 100
SACRAMENTO, CA 95816-7100
(916) 445-7000 Fax: (916) 445-7053
calshpo@parks.ca.gov
www.ohp.parks.ca.gov



September 01, 2017

In reply refer to: BUR_2017_0804_002

Ms. Anastasia T. Leigh, Regional Environmental Officer
U.S. Bureau of Reclamation, Mid-Pacific Regional Office
2800 Cottage Way, Sacramento, CA 95825-1898

Subject: Section 106 Consultation for the Semitropic Water Storage District Groundwater Well Operational Data Acquisition and Solar Power Project, Kern County, California (Project #15-SCAO-191)

Dear Ms. Leigh:

The State Historic Preservation Officer (SHPO) received on August 04, 2017 your letter initiating consultation on the above referenced undertaking under Section 106 of the NHPA, and its implementing regulations found at 36 CFR Part 800. Reclamation proposes to provide WaterSMART grant funding to the Semitropic Water Storage District (District) for construction of 390 proposed Groundwater Well Operational Data Acquisition units (telemetry units) and a Solar Power Generating Facility Project in Kern County, California. Reclamation has evaluated the proposal and is seeking comments on its finding of no historic properties affected. Documents included with the submittal are:

- *Enclosure 1: MAPS: Figures 1a & 1b: Project location (USGS Quad); Figures 2 through 5: Areas of Potential Effects (aerial photos with graphic overlay).*
- *Enclosure 2: Email Correspondence for proposed sensitivity model for cultural resources;*
- *Enclosure 3: Cultural Resources Report for the Groundwater Well Operational Data Acquisition Project (Well Telemetry Project-No. 1515380.6), June 2017 (By: J. Martinez, J. Mayer, K. Gardner, GEI Consultants, Sacramento, CA.) [For: I. Medina, Semitropic Water Storage District, Wasco, CA]*
- *Enclosure 4: Phase I Cultural Resources Inventory, Semitropic Water Storage District Pond Road Solar Generating Facility Project, Kern County, California, Project No. 5989, December 15, 2015 (By: S. O'Neil, A. Garfinkel Gold, J. Brady, & M. Black, UltraSystems Environmental, Inc., Irvine, CA) [For: I. Medina, Semitropic Water Storage District, Wasco, CA]*

The proposed project consists of two components. The first is constructing a new 390-kW commercial solar power production facility on about 39.5 acres of land owned by the District. The second is to install data acquisition system units on 390 existing, privately owned ground water wells and ancillary discharge pipes that tie into the District's primary water conveyance network and discharge water directly to adjacent irrigated lands.

Reclamation first coordinated discussion for this proposed undertaking in June of 2016, during a face-to-face meeting, regarding a proposed site sensitivity identification approach for the 390 telemetry unit placements and then again by email, in March and April of 2017, regarding informal review of this draft approach (Enclosure 2).

Work scope for the Solar Power Project involves regrading of the ground surface, burying electrical line and array supports as deep as 36 inches, and developing an engineered surface and concrete pads for equipment. The data acquisition component involves attaching relatively small units to approximately 390 existing water pumps. Trench sizes for the telemetry component will be about 36 inches deep, up to 12 inches in width, and may extend up to 30 feet in length depending on the unit relative to flowmeter location.

The area of potential effects (APE) for the proposed project comprises the two locations. The first is the footprint of the 39.5-acre Solar Power Project, with an additional buffer of no less than 100 feet. The data acquisition APE includes the well pumps, trenches, and auxiliary discharge and flow meter, as well as a surrounding 25-foot work area. Maximum vertical depth will be about 36" deep for both, based on the depth of construction activities. In addition, a one-half mile indirect APE was considered for the Solar Power Project.

On behalf of Reclamation and the District, two separate historic property identification efforts were completed by GEI Consultants (2017) and UltraSystems Environmental, Inc. (2015). Both efforts included records searches, map review and a geoarchaeological review of soils data. UltraSystems staff conducted a pedestrian survey of the solar facility location on December 05, 2015 with negative results. Based on the data in the reports, modeling identified 58 of the 390 well locations as having moderate-to-high sensitivity for potential for the presence of cultural resources. Between January 09, 2017 and January 11, 2017, these 58 well locations were surveyed by GEI Consultants, Inc. staff with negative results. In addition, both locations have been continually impacted by agricultural cultivation, road development and various work pad constructions and are considered as disturbed areas.

Reclamation contacted all groups on the list from the Native American Heritage Commission by mail and phone for information on sites of potential religious or cultural significance. The only response was by phone on January 25, 2017 from Mr. Lalo Franco of the Santa Rosa Indian Community of the Santa Rosa Rancheria. Mr. Franco expressed concern about potential buried deposits at the Solar Power Plant. Reclamation sent Mr. Franco and Ms. Shana Powers copies of reports that addressed his concerns along with further explanation of the results obtained. On February 14, 2017, Chairman Barrios of the Santa Rosa Rancheria sent a letter indicating they would like to participate in the Section 106 process. Reclamation followed up with another email with reporting attached and a phone call on June 14, 2017, and another email on June 26, 2017, all with no response. Reclamation will make notifications as required should any concerns subsequently arise.

After OHP staff review of the documentation, the following comments are offered:

- Pursuant to 36 CFR 800.4(a)(1), there are no objections to the APE as defined;
- Pursuant to 36 CFR 800.4(b), Reclamation has documented a reasonable and good faith effort to identify historic properties within the area of potential effects.
- Reclamation has determined that the proposed undertaking will result in no historic properties affected. Pursuant to 36 CFR 800.4(d)(1), **I do not object.**

Please be advised that under certain circumstances, such as unanticipated discovery or a change in project description, Reclamation may have additional future responsibilities for this undertaking under 36 CFR Part 800 (as amended). Should you require further information, please contact Jeanette Schulz at Jeanette.Schulz@parks.ca.gov or (916) 445-7031.

Sincerely,



Julianne Polanco
State Historic Preservation Officer

**OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION**

P.O. BOX 942896
SACRAMENTO, CA 94296-0001
(916) 653-8624 Fax: (916) 653-9824
calshpo@ohp.parks.ca.gov
www.ohp.parks.ca.gov



09-SCAO-338

DEC 29 2009

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December 22, 2009

In Reply Refer To: BUR091214A

Michael A. Chotkowski
Regional Environmental Officer
United States Department of the Interior
Bureau of Reclamation
Mid-Pacific Regional Office
2800 Cottage Way
Sacramento, CA 95825-1898

Re: Improvements to the Pond Poso Spreading and Recovery Facility of the Semitropic Water Storage District, Kern County, California (Project No. 09-SCAO-338).

Dear Mr. Chotkowski:

Thank you for seeking my consultation regarding the above noted undertaking. Pursuant to 36 CFR Part 800 (as amended 8-05-04) regulations implementing Section 106 of the National Historic Preservation Act (NHPA), the Bureau of Reclamation (BUR) is seeking my comments regarding the effects that the subject project will have on historic properties. The BUR is providing American Recovery and Reinvestment Act (ARRA) funding to the Semitropic Water Storage District to implement this project, an action which the BUR has determined, constitutes an undertaking subject to review under Section 106 regulations.

The proposed project will occur in an existing spreading basin that encompasses an area of approximately 763 acres. The BUR has determined that the entirety of this 763-acre basin is the project Area of Potential Effects (APE). Project elements will consist of the construction, with excavators and other heavy equipment, of various inter-basin structures including pond over-pours, emergency spillways, county road siphon crossings, and various types of wells with a collection system. The project is designed to complete construction of the spreading basin, which was intended to provide groundwater recharge for extraction during dry years, but is not currently a working facility. In addition to your letter of December 10, 2009, you have submitted the following document in support of your efforts to identify and evaluate historic properties in the project APE.

- A Cultural Resources Assessment for the Semitropic Water Storage District, Northwest of Wasco, Kern County, California (Catherine Lewis Pruet, Three Girls and A Shovel, LLC: October 2009).

Classification:	ENV 500
Project:	314
Contract No.:	09084548
Folder I.D.:	107 05 621
Date Input & Initials:	12-29-09 AD

BUR091214A 12/22/09

After reviewing your letter and supporting documentation, I have no objection to your finding of No Historic Properties Affected. Be advised that under certain circumstances, such as unanticipated discovery or a change in project description, the BUR may have additional future responsibilities for this undertaking under 36 CFR Part 800. Thank you for seeking my comments and for considering historic properties in planning your project. If you require further information, please contact William Soule, Associate State Archeologist, at phone 916-654-4614 or email wsoule@parks.ca.gov.

Sincerely,

Susan K Stratton for

Milford Wayne Donaldson, FAIA
State Historic Preservation Officer



United States Department of the Interior

BUREAU OF RECLAMATION
Mid-Pacific Regional Office
2800 Cottage Way
Sacramento, California 95825-1898



NHP REFERENCE TO:
ENV-3.00

CERTIFIED – RETURN RECEIPT REQUESTED **DEC 10 2009**

Mr. Milford Wayne Donaldson
State Historic Preservation Officer
Office of Historic Preservation
1416 9th Street, Room 1442-7
Sacramento, California 95814

Subject: National Historic Preservation Act, Section 106 Consultation for Improvements to the Pond Poso Spreading and Recovery Facility of the Semitropic Water Storage District, Kern County, California (Project No. 09-SCAO-338) – American Recovery and Reinvestment Act Project

Dear Mr. Donaldson:

The Bureau of Reclamation is initiating the National Historic Preservation Act (NHPA) Section 106 process and is seeking your concurrence with a finding of no historic properties affected for a proposed enhancement of an existing spreading and recovery facility managed by the Semitropic Water Storage District of Kern County, California. This project is being funded through the American Recovery and Reinvestment Act (ARRA). The use of Federal appropriations constitutes an undertaking pursuant to Section 301(7) of the NHPA (16 U.S.C. 470), as amended. Reclamation is consulting with you in accordance with the regulations at 36 CFR Part 800 implementing Section 106 of the NHPA.

The proposed improvements will take place in an existing spreading basin that encompasses five quarter sections approximately 763 acres in size. The project entails the construction of inter-basin structures, 20 pond over-pours, three emergency spillways, four county road siphon crossings, completion of seven production wells, eight casing path wells and five shallow wells, and construction of a collector system. Heavy equipment such as excavators will be used to install and construct the necessary enhancements. Excavated soils will either be disposed of commercially or by spreading them over the existing spreading basin. The proposed improvements are being constructed in an existing spreading basin that was originally constructed in 2006 as a private endeavor by the Semitropic Water Storage District. The purpose of the spreading basin was to provide groundwater recharge that could be extracted in dry years or supplement reduced deliveries during irrigation seasons.

The current spreading basin, although it has not been excavated and levees have been constructed, is not a working facility. Appropriations under the ARRA program will allow the Semitropic irrigation district to complete the final components of the spreading basin project. Once the final components have been implemented, the existing spreading basin will be functional and provide for a more reliable irrigation water supply.

Reclamation has determined that the area of potential effects (APE) constitutes the five quarter sections where the project action will take place (Figure 1 of Pruett [2009:2]). A detailed description of the APE is included in the enclosed cultural resource inventory report by Pruett (2009:1). The APE lies within agricultural lands northwest of the City of Wasco in Kern County, California. The five quarter sections were developed into spreading ponds and levees in 2006. The APE is a highly modified environment. In 2006 much of the APE was excavated to depths of approximately 30 feet during the construction of the spreading basin area. The legal description for the APE is E ½, sec. 17; W ½, sec. 16; and the SW ¼, sec 9, T. 26 S., R. 24 E., Mount Diablo Meridian, as depicted on the Wasco 7.5-minute USGS topographic quadrangle.

In an effort to identify historic properties, Semitropic Water Storage District's engineering consultant, GEI Consultant, subcontracted with Three Girls and a Shovel, LLC, to conduct a cultural resource inventory of the APE. The results of this inventory are detailed in the enclosed cultural resource inventory report by Pruett (2009). In summary of Pruett (2009), a records search did not reveal any previously recorded cultural resources nor any previous cultural resource identification efforts within or immediately adjacent the APE. Because the area has been significantly modified during construction of the spreading basin in 2006 without any previous cultural resource considerations, Pruett conducted a pedestrian inspection of the APE. No cultural resources were identified during the survey. Pruett's effort to consult with Indian Tribes and Native American organizations and individuals also failed to identify any known cultural resources. Pruett (2009) concludes that any cultural resources that may have been present prior to the construction of the spreading basin in 2006 are now removed.

Based on the above information and enclosed report by Pruett (2009), Reclamation concludes that the proposed undertaking will have no effect on historic properties pursuant to the regulations at 36 CFR Part 800.4(d)(1). In an effort to identify sites of religious and cultural significance, Reclamation is consulting with the Tule River Tribe and the Santa Rosa Rancheria pursuant to 36 CFR Part 800.4(a)(4). If Reclamation is made aware of any resources, we will contact your office immediately.

Reclamation invites your comments on our delineation of the APE and the appropriateness of our identification efforts. We also request your concurrence on our finding that the proposed undertaking will result in no effect to historic properties. If you have any questions, comments, or concerns, please contact Mr. Adam Nickels at 916-978-5053 or anickels@usbr.gov. We look forward to your response.

Sincerely,

MICHAEL A. CHOTKOWSKI

Michael A. Chotkowski
Regional Environmental Officer

Enclosure

Reference:

Pruett, C.L.
2009 A Cultural Resources Assessment for the Semitropic Water Storage District, Northwest of Wasco, Kern County California. Unpublished report prepared for Semitropic Water Storage District, on Behalf of the Bureau of Reclamation. On file with the Bureau of Reclamation, Sacramento California, Project No. 09-SCAO-338

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I:153/Adam/2009/ 09-SCAO-338 SHPO Consultation.doc

Appendix C

Endangered Species Act Compliance



In Reply Refer to:
08ESMF00
2016-I-2098

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Suite W-2605
Sacramento, California 95825-1846



AUG 31 2017

Memorandum

To: Anastasia T. Leigh, Regional Environmental Officer, Bureau of Reclamation, Mid-Pacific Regional Office, Sacramento, California

From: *Antuano Cole*
San Joaquin Valley Division Chief, Sacramento Fish and Wildlife Office, Sacramento, California

Subject: Informal Consultation on the Semitropic Water Storage District Groundwater Well Operational Data Acquisition System, Lateral Canal Lining Project, and Solar Generation Facility

This memo is in response to the Bureau of Reclamation's (Reclamation) request for informal consultation with the U.S. Fish and Wildlife Service (Service) on Reclamation's issuance of Agricultural Water Conservation and Efficiency Grant funding to the Semitropic Water Storage District (District) to facilitate the construction of an operational groundwater well data management system and solar power facility as well as the lining of water conveyance ditches (Project). Project construction activities will occur on District lands in western Kern County between Interstate 5 and State Highway 99 west of the communities of Delano, Wasco and Shafter.

Reclamation has determined that project development will have no effect on the following species: the federally endangered giant kangaroo rat (*Dipodomys ingens*), Buena Vista Lake ornate shrew (*Sorex ornatus relictus*), conservancy fairy shrimp (*Branchinecta conservatio*), California jewelflower (*Caulanthus californicus*), and San Joaquin woolly-threads (*Monolopia congdonii*) and the federally threatened giant garter snake (*Thamnophis gigas*), California red-legged frog (*Rana draytonii*), Western snowy plover (*Charadrius nivosus* ssp *nivosus*) and vernal pool fairy shrimp (*Branchinecta lynchi*). Reclamation has also determined that the project will have no effect on Buena Vista Lake shrew designated critical habitat.

Reclamation has determined that project development may affect, but is not likely to adversely affect the federally endangered San Joaquin kit fox (*Vulpes macrotis mutica*), Tipton kangaroo rat (*Dipodomys nitratoides nitratoides*), blunt-nosed leopard lizard (*Gambelia sila*) and Kern mallow (*Eremalche kernensis*) and is seeking concurrence from the Service on this determination.

This response is provided under the authority of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*) (Act) and in accordance with the implementing regulations pertaining to interagency cooperation (50 CFR 402). The findings and recommendations presented in this memo are based on the following information: (1) the consultation request from the Reclamation; (2) two revised biological assessments dated June, 2017; and (3) other information available to the Service.

Project Description

The Project includes three separate construction projects: construction of an operational groundwater well data management system, construction of a solar power facility, and the lining of water conveyance ditches with plastic material impervious to water.

Groundwater Well Operational Data Acquisition

The District proposes to construct and operate a remote data acquisition system on 390 privately-owned and District-owned groundwater wells that are currently connected to the District's water conveyance system. The construction at each well site will take three days to complete and installation at all 390 wells will be in phases, beginning in the fall of 2017 and continue over the next three years.

The project will include the following construction activities at each groundwater well site:

1. Retrofit of existing above-ground well discharge meters with new mechanical parts;
2. Erection of National Electrical Manufacturers Association (NEMA) 3R enclosure mounted on a stanchion (pole) or outside of existing electrical cabinet;
3. Installation of meter, data logger, cell modem and other appurtenances inside the NEMA 3R weatherproof enclosure;
4. Trenching and below-ground installation of PVC conduit and cable extending from telemetry unit to flowmeter; and
5. Electrical work consisting of connection of current transformers (CT) panel voltage, and sensor wires.

Installation of the data acquisition system will have very limited ground disturbance (from conduit and stanchion installation) and impact since the work will be implemented on actively-farmed agricultural lands. Trenches for the three-inch underground conduit and cable installation will be no deeper than 36-inches, no wider than 12-inches and will extend a length of no more than 30 feet from the telemetry housing unit to the digital flowmeter at each well. Trenches will be backfilled and compacted, excess excavation materials will be spread within the existing work area to allow for settlement.

Operation of the facilities will be automated. Periodic maintenance will consist of visual inspections, electrical testing, and mechanical testing and will occur as needed by the District system operators as part of their daily tasks.

Lateral Canal Lining

The District is proposing to line approximately 3.75 miles of existing conveyance ditches with a plastic impervious material at the Pond-Poso Spreading and Recovery Facility. The conveyance ditches are approximately three feet deep, four feet wide with 1: 1 side slopes.

The District currently maintains the conveyance ditches by disking and trenching to eliminate vegetation and to maintain surface for water flow. Preparation of the ditches for the liner will be the same as regular maintenance activities. Excavated material will be used to anchor the liner edges.

Operation and maintenance of the facility will include sediment/debris removal, repairing liner tears, replacement of deteriorated linings, re-anchoring liner edges and/or rescaling liner seams. All construction activities will be performed in previously disturbed and regularly maintained ditches. Construction is expected to begin in the fall of 2017, and be completed within three months.

Solar Power Facility

The proposed photovoltaic (PV) solar system consists primarily of solar panels, a racking system, inverters, electrical equipment at the point of interconnection, and conduit and wiring.

The project will be owned, operated, and maintained by the District. At full buildout, the facility will occupy an area that is approximately 40 acres within a 640 acre plowed field. The project will interconnect to an existing District 12.47-kilovolt (kV) distribution line located immediately north of the project site, adjacent to the District's Pond Road substation, and across from an existing Pacific Gas and Electric Company (PG&E) substation. The project will support the District's ongoing efforts to generate energy to supplement the District's energy supply.

The project is located adjacent to a main County-paved road, Pond Road, the main point of access to the site. Existing roads will be used to access the sites at all times; however, travel routes within the facility may be established. The project site will be enclosed in a 6-foot-high commercial grade security chain link perimeter fence and gates, elevated 5-7 inches above ground. Downcast and shielded security lights may be installed around the perimeter of the Project site if needed.

Construction of the project is expected to be implemented in phases with the first phase commencing in the fall of 2017, consisting of a one MW facility. Each phase is expected to be completed over a period of approximately three to six months. The project work includes the following: 1) site preparation; 2) PV system installation; and 3) startup, testing, and commissioning. Construction activities will include the following:

Operation of the facilities will be automated. The project will be generating energy and operate during day-light hours, year-round. Periodic maintenance, will consist of visual inspections, module washing, electrical testing, mechanical testing, and vegetation control and weed abatement. The District will utilize several vegetation management practices including frequent mowing, tilling, and the use of herbicides to control vegetation.

Conservation Measures

The following measures included in the biological assessments will be implemented prior to and during construction:

Groundwater Well Operational Data Acquisition and Lateral Canal Lining

1. An Environmental Awareness Program will be presented to all Project personnel prior to any construction activity. The program will consist of a brief presentation in which biologists

knowledgeable of endangered species biology and legislative protection will explain endangered species concerns. The program would address the federally-listed San Joaquin kit fox, Tipton kangaroo rat, blunt-nosed leopard lizard, and Kern mallow. Species biology, habitat needs, status under the Endangered Species Act, and measures being incorporated for the protection of these species and their habitats will be addressed.

2. No more than 14 days prior to construction, a qualified biologist will conduct a final pre-construction biological survey of the Pond-Poso lateral ditches and the 45 groundwater well locations with listed species habitat within 500 feet. Pre-construction surveys will be conducted to determine if the potential for listed species to occur in the Project area or immediate vicinity.
 - a. If no burrows, dens, or listed species are identified within the boundaries of the Project sites, then construction activities may proceed.
 - b. If burrows or dens that may potentially be used by listed species are found in a Project site or adjacent habitat during pre-construction surveys, then exclusion zones will be established. All burrows and dens will be avoided by Project activities and a minimum 50 foot no-disturbance area will be maintained.
 - c. If a listed animal species or sign of a listed species is found, or if burrow avoidance and exclusion zones cannot be maintained, the Service will be notified immediately to discuss federal requirements to proceed with the Project.
3. During the year prior to construction, surveys will be conducted in the appropriate blooming period (February-May) at two (2) groundwater well sites, PP1031GW and PP1041DGW, where Kern mallow was observed:
 - a. If no Kern mallow plants or populations are present within the boundaries of the well sites, then project activities may proceed.
 - b. If plants or populations of Kern mallow are present in the project sites or buffer areas, flagging will be used to identify the population(s). Kern mallow plants will be avoided by project activities and no disturbance will be permitted within 50 feet.
 - c. If Kern mallow is found during pre-construction surveys, or if exclusion zones cannot be maintained, the Service will be notified immediately to discuss Federal requirements to proceed with the project.
4. Project activities including vehicle travel and parking will be confined to the existing well sites and access roads.
5. The District will implement the following measures adapted from the Service's *Standardized Recommendations For Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance* to protect San Joaquin kit fox and other listed wildlife:

- a) Pre-construction surveys for San Joaquin kit fox should be conducted by a qualified biologist no less than 14 days prior to the beginning of ground disturbance and/or construction activities.
 - b) If San Joaquin kit fox, sign of the species, or active dens are found, the Service will be notified immediately to discuss federal requirements to proceed with the Project.
 - c) Any potential dens will be monitored for activity prior to construction activity. Den monitoring and excavation will be conducted by a qualified biologist, in accordance with the Service 2011 guidance.
 - d) To prevent entrapment of San Joaquin kit fox or other animals during construction, all excavated steep-walled trenches two (2) feet or more in depth should be covered at the close of each working day by plywood or similar material. For trenches that cannot be closed daily, one or more escape ramps constructed of earth fill or wooden planks should be installed. Ramps should be installed at no less than 45-degree angles.
 - i. Before such trenches are filled they should be thoroughly inspected for trapped animals.
 - ii. If at any time a trapped or injured San Joaquin kit fox or other listed animal (Tipton kangaroo rat or blunt-nosed leopard lizard) is discovered, escape ramps or structures should be installed immediately to allow the animal(s) to escape. If a listed species is discovered during Project activities, the Service will be contacted immediately.
 - e) All food-related trash items such as wrappers, cans, bottles or food scraps generated during Project activities will be disposed of only in closed containers and removed daily from the proposed Project sites. No deliberate feeding of wildlife will be allowed.
 - f) To prevent harassment or mortality of wildlife species via predation, or destruction of their dens or burrows, no domestic pets will be permitted on the Project sites.
6. The District will designate a Project representative as the contact for any employee or contractor who finds a dead, injured, or entrapped San Joaquin kit fox, Tipton kangaroo rat, or blunt-nosed leopard lizard.
 7. Construction activities will occur during daylight hours (30 minutes prior to sunrise until 30 minutes after sunset).
 8. Project speed limits will be limited to 20 mph in the vicinity of the 45 well sites where habitat was observed.

9. All sightings of listed species will be reported immediately to the Service.

Solar Power Facility

1. An Environmental Awareness Program will be presented to all personnel working in the field on the proposed Project site. The program will consist of a brief presentation in which biologists knowledgeable of endangered species biology and legislative protection will explain endangered species concerns. The program will address federally listed wildlife species including San Joaquin kit fox, Tipton kangaroo rat, and blunt-nosed leopard lizard. Species biology, habitat needs, status under the Endangered Species Act, and measures being incorporated for the protection of these species and their habitats will also be addressed.
2. No more than 14 days prior to construction, a qualified biologist will conduct a biological pre-construction survey of the Project site to determine the potential for listed species in the project area or immediate vicinity. If no work occurs within 14 days of pre-construction surveys, additional surveys may be required so surveys remain current.
 - a. If no burrows, dens, or listed species are identified within the boundaries of the project site, and conditions have not changed, then construction activities may proceed.
 - b. If burrows or dens that may potentially be used by listed species are found in the project site during pre-construction surveys, then exclusion zones will be established. All burrows and dens will be avoided by project activities and a minimum 50 foot no-disturbance area will be maintained.
 - c. If a listed species or sign of a listed species is found, or if burrow avoidance is not feasible, or exclusion zones cannot be maintained, the Service will be notified immediately to discuss federal requirements to proceed with the project.
3. If suitable burrows that may serve as potential refugia for blunt-nosed leopard lizard are detected and cannot be avoided, or a 50-foot avoidance buffer cannot be maintained, then additional surveys to detect the species will be completed in accordance with the California Department of Fish and Wildlife's Approved Survey Methodology For The Blunt-Nosed Leopard Lizard, or other current guidance. Protocol level surveys will be completed the year prior to construction, if burrow avoidance is not feasible.
4. Project activities will be conducted during daylight hours.
5. Hazardous materials, fuels, lubricants, and solvents that spill accidentally during project-related activities will be cleaned up and removed from the project site as soon as possible according to applicable federal, state and local regulations.
6. All vehicle operators will check under vehicles and equipment prior to operation, or if left idle. If wildlife is found under idle vehicles or equipment in the project site, the individual(s) shall be allowed to leave on their own accord.

7. To prevent entrapment of San Joaquin kit fox or other animals during construction, or operation and maintenance (O&M), all excavated steep-walled holes or trenches less than five (5) feet in depth shall be covered at the close of each day by plywood or similar material. For trenches that cannot be closed daily, one or more escape ramps constructed of earth fill or wooden planks shall be installed and secured at the top for stability. Ramps should be located at no greater than 500-foot intervals and at no less than 45-degree angles.
 - i. All covered or uncovered excavations shall be inspected at the beginning, middle, and end of each work day and non-work day.
 - ii. Before such holes or trenches are filled they should be thoroughly inspected for trapped animals.
 - iii. If at any time a trapped or injured San Joaquin kit fox or other listed animal (Tipton kangaroo rat or blunt-nosed leopard lizard) is discovered, escape ramps or structures should be installed immediately to allow the animal(s) to escape. If any listed species is discovered during project activities, the Service will be contacted immediately.
8. All pipes, culverts, or similar structures stored at the proposed project site overnight having a diameter of four (4) inches or greater will be inspected thoroughly for wildlife species before being buried, capped, or otherwise used or moved in any way. Pipes laid in trenches overnight will be capped. If during project implementation a wildlife species is discovered inside a pipe, that section of pipe will not be moved or, if necessary, moved only once to remove it from the path of project activity, until the wildlife species has escaped.
9. All food-related trash items such as wrappers, cans, bottles or food scraps generated during project activities will be disposed of only in closed containers and removed daily from the proposed project site. No deliberate feeding of wildlife will be allowed.
10. To prevent harassment or mortality of wildlife species via predation, or destruction of their dens or burrows, no domestic pets will be permitted on the project site.
11. To prevent ingestion by or exposure to non-target species, the use of rodenticides in the project site is prohibited.
12. The District will implement the following measures adapted from the Service's *Standardized Recommendations For Protection of the Endangered San Joaquin Kit Fox: Prior to or During Ground Disturbance* to protect San Joaquin kit fox:
 - a. Construction and other project related activities should avoid den(s) that could be used by San Joaquin kit fox.
 - b. If dens are identified during pre-construction surveys that may be used by San Joaquin kit fox, protective exclusion zones will be established prior to Project activities.

- c. If a natal/pupping den is discovered within the Project site or 500 foot buffer area, the Service will be notified. Natal/pupping dens may not be destroyed while occupied.
 - d. Destruction of any known or natal/pupping kit fox den requires take authorization/permit from the Service.
 - e. To ensure protection of known dens, exclusion zones should be established 100 feet from the den entrance(s) with fencing that does not prevent access to the den by kit foxes. Acceptable fencing includes untreated wood particle-board, silt fencing, or orange construction fencing, installed with 1-foot gaps for every 10 feet of fencing.
 - f. For potential and/or atypical dens, placement of 4-5 flagged stakes 50 feet from the den entrance(s) will suffice to identify the den location; fencing will not be required, but the exclusion zone must be observed.
 - g. Exclusion zones around kit fox dens will be maintained until all construction related disturbances have been completed. At that time all fencing will be removed to avoid attracting subsequent attention to the dens.
 - h. Only essential vehicle operation on existing roads and foot traffic should be permitted in exclusion zones. Otherwise, all construction, vehicle operation, material storage, or any type of surface-disturbing activity should be prohibited or greatly restricted within the exclusion zones.
13. If potential San Joaquin kit fox dens are identified that cannot be avoided by construction activities, the following measures will be implemented:
- a. Potential dens will be monitored for three (3) consecutive nights with tracking medium or an infra-red camera beam to determine the current use. If no kit fox activity is observed during this period, the den(s) will be destroyed immediately to preclude subsequent use.
 - b. If kit fox activity is observed at the den(s) during this period, the den(s) should be monitored for at least five (5) consecutive nights from the time of the observation to allow any resident animal to move to another den during its normal activity. Only when the den(s) are determined unoccupied may the den(s) be excavated.
 - c. Destruction of the den(s) should be accomplished by careful excavation until it is certain that no kit foxes are inside. The den(s) should be fully excavated, filled with dirt and compacted to ensure that kit foxes cannot reenter to use the den during the construction period. If at any point during excavation, a kit fox is discovered inside the den, the excavation activity will cease immediately and monitoring the den as described above should resume. Destruction of the den may be completed when, in the judgment of the biologist, the animal has escaped, without further disturbance, from the partially destroyed den.

14. All perimeter fencing installed around the facility will be raised five to seven (5-7) inches above ground level and knuckled under to allow for movement of San Joaquin kit fox through the Project site.
15. The District will designate a project representative as the contact for any employee or contractor who finds a dead, injured, or entrapped San Joaquin kit fox, Tipton kangaroo rat, or blunt-nosed leopard lizard.
16. All sightings of listed species will be reported immediately to the Service.

Conclusion

The Service concurs with your determination that the proposed project may affect, but is not likely to adversely affect the San Joaquin kit fox, Tipton kangaroo rat, blunt-nosed leopard lizard and Kern mallow. Our concurrence is based on the conservation measures above, project design features, surveys that have already been conducted on the project site, and the quality of habitat within and around the disturbance areas.

The impact areas for the groundwater well operational data acquisition project, while numerous, will be small and isolated and predominately in areas that are not considered habitat for listed species. In areas where listed species could occur, implementation of the proposed avoidance measures should be successful in avoiding impacts to these species.

The project areas for the canal lining project and the solar facility are routinely disturbed and provide limited habitat for listed species. With the implementation of the proposed avoidance measures as well as project design features, impacts to listed species should be avoided.

This concludes the Service's review of the proposed project. No further coordination with the Service under the Act is necessary at this time. Please note, however, this letter does not authorize take of listed species. As provided in 50 CFR §402.14, initiation of formal consultation is required where there is discretionary Federal involvement or control over the action (or is authorized by law) and if: 1) new information reveals the effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this review; 2) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this review; or 3) a new species is listed or critical habitat designated that may be affected by the action.

If you have any questions regarding this biological opinion, please contact Justin Sloan, Senior Fish and Wildlife Biologist, at the letterhead address or at (559) 221-1828.