

**APPENDIX 1 – BURROWING OWL SURVEY  
REPORT**

# Campo Verde Solar Energy Project Protocol Burrowing Owl Survey Report

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*Phase I, II and III Survey Report (2011 Breeding and 2011/2012 Winter Resident)*

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# 1.0 PROJECT OVERVIEW

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Western Burrowing Owls (*Athene cunicularia hypugea*) are common in Imperial County (DeSante et al. 2004) and were identified as a species of interest during the early planning stages for the Campo Verde Solar Project (Project). The Project is a proposed 1,990 acre solar photovoltaic (PV) energy-generating facility (solar energy facility site) located in Imperial County approximately 7 miles southwest of the community of El Centro, California. **Figure 1** shows the general location of the project.

The Project would use First Solar PV modules that are generally non-reflective and convert sunlight into direct current (DC) electricity. The DC output of multiple rows of PV modules is collected through one or more combiner boxes and directed to an inverter that converts the DC electricity to alternating current (AC) electricity. From the inverter, the generated energy flows to a transformer where it is stepped up to distribution level voltage (approximately 34.5 kV). Multiple transformers are connected in parallel via 34.5 kV lines to the Project substation, where the power will be stepped up to 230 kV.

The Project will be interconnected to the regional transmission system via a new gen-tie line constructed to the Imperial Valley Substation. This interconnection will be accomplished via one of three potential options – two requiring rights-of-way across federal lands managed by the Bureau of Land Management (BLM) and one located entirely on private lands (**Figure 2**).

The two gen-tie line alternatives that would cross BLM lands would originate at the Project substation/switchyard at the southern end of the Project site and would go south to the Imperial Valley Substation. Either of these two alternatives would be built as a double-circuit 230 kV line.

- The Alternative Gen-Tie across BLM land would follow the existing IID S-line and would cross about 0.4 miles of BLM land.
- The Proposed Gen-Tie Alternative would follow existing roads and would cross about 0.9 miles of BLM land. Both of these options are located entirely within a BLM-designated utility corridor.

The Private Gen-tie Alternative being considered is to develop a single-circuit 230 kV line originating on the western side of the Project site. It would cross approximately 1.75 miles of private lands to the west and would utilize available capacity on a line that has an approved right-of-way to the Imperial Valley Substation.

The purpose of the surveys was to identify Burrowing Owl nests on or near the proposed project site, within the proposed Gen-tie Line corridors, and/or associated buffers.

## 2.0 Introduction

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The Burrowing Owl is a California Species of Special Concern and a BLM sensitive species. It is protected by the MBTA and California Fish & Game Code §§ 3503, 3503.5, 3513. Nesting occurs from March through August (Haug et al. 1993). Burrowing Owls typically form a pair-bond for more than 1 year and exhibit high site fidelity, reusing the same burrow year after year (Haug et al. 1993). The female remains inside the burrow during most of the egg laying and incubation period and is fed by the male throughout brooding. Burrowing Owls are opportunistic feeders, consuming a diet that includes arthropods (typically insects), small mammals, small birds, and occasionally amphibians and reptiles (Haug et al. 1993). Urbanization has greatly reduced the amount of suitable habitat for this species. Other contributions to the decline of this species include the poisoning of squirrels and prairie dogs, and collisions with automobiles. A survey effort carried out between 1991 and 1993 indicated that major population densities in California remain in the Central and Imperial Valleys (DeSante et al. 1996; DeSante et al. 2004). This species is a year-round resident in Imperial County. Up to 70% of California's Burrowing Owls reside in the Imperial Valley (Wilkerson et al. 2011). Recent survey efforts have indicated a slight population decline in the Imperial Valley (-2.5%; Wilkerson et al. 2011).

The Burrowing Owl is primarily restricted to the western United States and Mexico. Habitat for the Burrowing Owl includes dry, open, short-grass areas often associated with burrowing mammals (Haug et al. 1993). In Imperial County, it is found in desert scrub, grasslands, and agricultural areas. Agricultural areas may benefit the species and appear to represent preferred habitat in Imperial County (DeSante et al. 1996; DeSante et al. 2004; Wilkerson et al. 2011; Bartok and Conway 2010).

The California Burrowing Owl Consortium (CBOC) developed the *Survey Protocol and Mitigation Guidelines* (CBOC 1993) document to meet the need for uniform standards when surveying Burrowing Owl populations and evaluating impacts from development projects. These guidelines are generally accepted by the California Department of Fish and Game (CDFG) and are intended to provide a decision-making process that should be implemented wherever there is potential for an action or project to adversely affect Burrowing Owls or the resources that support them.

The CBOC guidelines suggest Burrowing Owl surveys be conducted in three phases. The purpose of a Phase I survey is to assess the presence of Burrowing Owl habitat in the project area. Phase II surveys are necessary to determine if suitable burrows occur on the site. Phase III surveys are intended to characterize owl presence during the nesting season and/or during winter. This report presents the findings of the Phase I, II, and III surveys within the proposed Campo Verde Solar Project Site and associated buffers; and the Phase I and II surveys with the proposed Gen-tie Line corridors and associated buffers (see **Section 3.0**).

## 3.0 Study Area

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The study area is comprised of five main components: (1) the 1,990-acre Campo Verde Solar Site; (2) the Proposed Gen-tie; (3) the Alternative Gen-tie across BLM land; (4) Private Gen-tie Alternative; and (5) a 500-foot buffer surrounding the Campo Verde Solar Energy Facility Site and the Gen-tie Corridors (**Figure 2**).

The Campo Verde Solar Energy Facility Site is primarily active agricultural lands growing crops such as alfalfa, Sudan grass, and Bermuda grass. Native vegetation on the site is generally absent with a few exceptions. The fields on the site are ringed by a series of earthen and concrete canals and drains that provide irrigation and drainage for the fields. Sporadic and limited riparian and wetland vegetation occur along portions of the earthen canals and berms. This vegetation is a mixture of native and non-native species and includes tamarisk (*Tamarix ramosissima*), cattails (*Typha* sp.), common reed (*Phragmites australis*), salt grass (*Distichlis spicata*), arrow weed (*Pluchea serricea*) and salt marsh fleabane (*Pluchea odorata*). Routine maintenance of these drains and canals by the Imperial Irrigation District (IID) involves the periodic removal of vegetation to maintain uninhibited water flow. Since vegetation clearing is a routine activity, the wetland vegetation is usually sparse and not well developed. Removal of this vegetation also provides suitable Burrowing Owl habitat once mammals return to these areas and excavate burrows (Bartok and Conway 2010); therefore, Burrowing Owl habitat in the project area is regularly changing, including creation of new burrow sites and loss of existing burrow sites. Topography in the study area is generally flat.

The Private Gen-tie Alternative would cross approximately 1.75-miles of active agricultural land that is similar to the Campo Verde Solar Energy Facility. The Proposed Gen-tie would follow existing roads and would cross about 0.9 miles of BLM land. The Alternative Gen-Tie Across BLM land would follow the existing IID S-line and would cross about 0.4 miles of BLM land. Both of these options are located entirely within a BLM-designated utility corridor. This area is generally flat Colorado Desert dominated by creosote bush (*Larrea tridentata*) scrub, athel (*Tamarix aphylla*) windbreaks, stabilized desert dune complex and arrow weed thicket.

# 4.0 Survey Methods

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## 4.1 PHASE I AND PHASE II SURVEYS

Phase I and Phase II surveys of the Campo Verde Solar Energy Facility Site were conducted simultaneously by qualified biologists during the 2011 breeding season (March-April). Phase I and II surveys of the Gen-tie Corridors were conducted simultaneously during the fall of 2011 (October). The Phase I habitat assessments determined that most of the study area contains suitable Burrowing Owl habitat, and Phase II burrow surveys were conducted.

Phase II surveys covered the entire study area and potentially suitable burrows were recorded. Transects at 10-meter spacing were walked within the Proposed Gen-Tie and Alternative Gen-tie Across BLM land (including a 500-foot buffer around the project area) to ensure that all suitable burrows were identified. Within agricultural lands, a combination of vehicular and pedestrian surveys were conducted along roads and irrigation infrastructure (per Bartok and Conway 2010).

Burrows that had the potential to be used by Burrowing Owls were marked using a handheld global positioning system (GPS) unit. Photos were taken of representative potential burrows and owl observations were noted. “Burrow Clusters” were recorded in areas that supported high densities of burrow entrances that were either (1) multiple entrances associated with a single burrow; or (2) separate burrows that were located too close together to support more than one breeding pair of owls (burrows within 5 meters of each other).

## 4.2 PHASE III SURVEYS

The Burrowing Owl nesting season begins as early as February 1 and continues through August 31 (Thomsen 1971, Zam 1974). The timing of nesting activities varies with latitude and climatic conditions. Phase III surveys at the Campo Verde Solar Energy Facility Site were conducted during the breeding season, beginning March 1 and ending August 31. All Burrowing Owl sightings were recorded (including occupied burrows and burrows with sign) and mapped. Numbers of adults and juveniles were recorded (**Appendix A**), as well as behavior such as courtship and copulation. Territory boundaries and foraging areas were not mapped, mainly because of the difficulty posed by the active nests being so close together where home-ranges potentially overlap.

Surveys were conducted in the morning and evening (one-half hour before to two hours after sunrise and two hours before to one-half hour after sunset). Burrows were examined for owl sign during the first observation of suitable burrows (typically during Phase II surveys). Subsequent observations were conducted from fixed points further from the burrows that provided visual coverage of the burrows using spotting scopes or binoculars. When possible, observers remained in vehicles to minimize disturbance to the birds.

## Methods

Surveys were conducted at each burrow on four separate days in order to minimize the likelihood of false-negative results (CBOC 1993). Phase III breeding season surveys will be conducted for the gen-tie corridors in March and April 2012.

### **4.3 PHASE III WINTER RESIDENT SURVEYS**

Phase III winter resident surveys were conducted during December 2011 and January 2012 at the Campo Verde Solar Energy Facility Site and within the gen-tie corridors. Winter survey methodologies followed Phase III protocol (CBOC 1993). Winter resident surveys were conducted on four separate days during the 2011/2012 Winter Season.



# 5.0 Survey Results

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## 5.1 PHASE I AND II SURVEYS

In its current condition, the study area and surrounding areas were observed to contain suitable nesting habitat for Burrowing Owls. The site contains both natural and artificial burrows. The natural burrows were most commonly associated with slopes along berms, canals, or drains where soil conditions are apparently more suitable for burrow construction. In the absence of suitable natural burrows, Burrowing Owls have been known to nest in man-made features. Numerous man-made features in the study area also provide suitable artificial burrow opportunities, including concrete and metal culverts and irrigation pipes.

Phase I and II surveys were conducted between the spring and fall of 2011. **Table 1** lists dates, times, weather, and the project components evaluated for the Phase II surveys. One-hundred and eighty-one potentially suitable burrows were identified during the Phase II surveys (**Figure 3**).

**Table 1. Phase I and Phase II Survey Details**

Date	Time	Weather Conditions	Project Component
March 28, 2011	1200-1830	70°F; clear, wind <5mph	Solar Energy Facility Site
March 29, 2011	0655-1840	51-80°F; clear, calm	Solar Energy Facility Site
October 26, 2011	0745-1200	66°F; clear, wind <5mph	Gen-tie Corridors
October 27, 2011	0745-1645	77°F; clear, wind <5mph	Gen-tie Corridors

## 5.2 PHASE III SURVEYS

**Table 2** lists dates, times, weather, and visibility for the Phase III surveys. Due to the number of active burrows and individuals observed, data for each active burrow have been included in **Appendix A**. **Table 3** summarizes the results of the Phase III survey and breaks down results by project component. **Figure 4** shows the location of the active burrows. To the maximum extent practicable, active burrows were surveyed in reverse order during each round of Phase III surveys so that owls could be observed at different times of the day during each survey period.

**Table 2. Phase III Survey Details**

<b>Date</b>	<b>Time</b>	<b>Weather Conditions</b>
<b>BREEDING SEASON SURVEYS (Campo Verde Solar Energy Facility Site)</b>		
March 28, 2011	1628-1745 (Concurrent with Phase II Survey)	70°F; clear, wind <5mph
March 29, 2011	1619-1753	51-80°F; clear, calm
March 30, 2011	1630-1911	82°F; mostly clear, wind <5mph
March 31, 2011	0620-0755	53-64°F; mostly clear, calm
	1649-1918	82-95°F, clear, winds 0-5mph
April 1, 2011	0620-735	55-62°F; clear, winds 0-5mph
April 4, 2011	1659-1902	76-83°F; clear, calm
April 5, 2011	0615-0829	51-59°F; clear, winds 0-5mph
	1705-1908	80-87°F, partly cloudy, winds <5mph
April 6, 2011	1648-1846	77-83°F, partly cloudy, winds 5-25mph
<b>WINTER RESIDENT SURVEY (Campo Verde Solar Energy Facility Site and Gen-tie Corridors)</b>		
December 7, 2011	0611-0825	33°F, clear, calm
December 8, 2011	0610-0815	31-33°F, clear, calm
December 14, 2011	0605-0823	41°F, clear, calm
December 19, 2011	1430-1702	54-65°F, partly cloudy, calm
December 20, 2011	1430-1610	63-67°F, clear, winds 0-5mph
January 4, 2012	1458-1631	79°F, clear, calm
January 5, 2012	1444-1646	64-76°F, clear, calm
January 6, 2012	0620-0846	39-55°F, clear, calm
January 23, 2012	1500-1700	67-69°F, partly cloudy, wind 10-20mph
January 24, 2012	1510-1636	64-69°F, mostly clear, winds <5mph
January 25, 2012	0624-810	42-50°F, mostly clear, winds <5mph

There were a total of 65 active and 76 inactive burrows identified in the study area. Because the 32 burrows identified during the October 2011 Phase I and II surveys were recorded after the breeding season, the activity status of these burrows is unknown; Phase III surveys will be conducted at these burrows in the spring of 2012. There were 23 active burrows within the solar energy facility and 42 active burrows within the 500-foot buffer area. There were no active burrows identified within the Gen-tie Line corridors or associated buffers (**Table 3; Figure 4**).

All burrows were observed or assumed to be attended by a pair (2) of Burrowing Owls. Cooperative breeding has not been observed in the species (Haug et al. 1993) and no more than 2 adults were ever suspected to be associated with any burrow in the study area. In several instances

## Survey Results

only one adult was ever observed at a given burrow. However, without a mark-recapture or color banding study, it is not possible to confirm that these represent instances of an unpaired adult. Therefore, for the purposes of this report, all adult owls within the project area are assumed to be paired. “Active burrow” should be interpreted to represent a “breeding pair” throughout this document.

**Table 3. Phase III Burrow Status Summary**

<b>Burrow Status</b>	<b>Campo Verde Facility</b>	<b>Campo Verde Facility Buffer</b>	<b>BLM Gen-tie Corridor</b>	<b>BLM Gen-tie Corridor Buffer</b>	<b>Private Gen-tie Corridor</b>	<b>Private Gen-tie Corridor Buffer</b>	<b>Total</b>
Active	23	42	0	0	0	0	65
Inactive	44	32	0	0	0	0	76
Status Unknown	0	0	12	17	0	3	32
<b>Total</b>	<b>67</b>	<b>74</b>	<b>12</b>	<b>17</b>	<b>0</b>	<b>3</b>	<b>173</b>

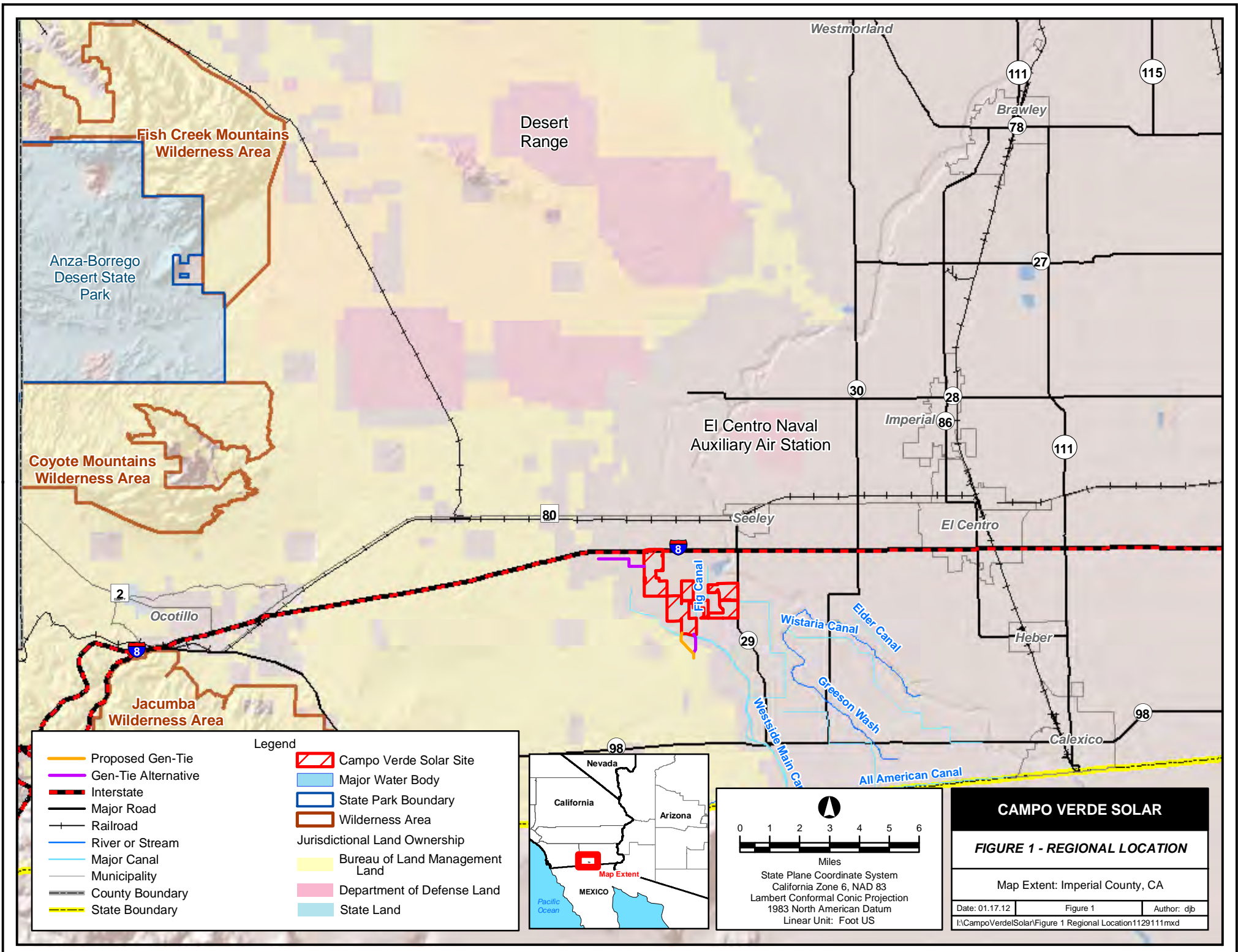
A table enumerating all active burrows and listing the survey results by date can be found in **Appendix A**.

### **5.3 WINTER RESIDENT SURVEY**

A total 186 burrows were surveyed during the winter resident surveys. Fourteen (14) new potentially suitable burrows were identified during the winter resident surveys and a burrow that had previously been assigned two unique numbers was consolidated. A significant number (69) of the burrows became unsuitable during the course of the winter surveys. This was primarily a result of two phenomena: 1) Burrows located along and near the Proposed Gen-Tie Alternative became unsuitable at a very high rate; approximately 19 of 32 burrows (59%) became unsuitable during the winter surveys. It is suspected that the loose sand and friable soils in this area contributed to the rate of burrows collapsing or filling in; 2) A major rain event in mid-December appears to have caused several bank slumps and burrow collapses that account for many of the other burrows that became unsuitable.

A maximum of 38 burrows were observed to be active during the winter resident surveys. However, six (6) of these burrows collapsed during the course of the surveys and only 32 remained active by the end of the survey.

Occupancy rates were appreciably lower during the winter surveys compared to the breeding season. During the breeding season, 65 of 141 (46%) burrows were active, while at the end of the winter surveys 32 of 117 (27%) burrows were active.



Proposed Gen-Tie	Campo Verde Solar Site	
Gen-Tie Alternative	Major Water Body	
Interstate	State Park Boundary	
Major Road	Wilderness Area	
Railroad	Jurisdictional Land Ownership	
River or Stream	Bureau of Land Management Land	Department of Defense Land
Major Canal	State Land	
Municipality		
County Boundary		
State Boundary		



0 1 2 3 4 5 6  
Miles

State Plane Coordinate System  
California Zone 6, NAD 83  
Lambert Conformal Conic Projection  
1983 North American Datum  
Linear Unit: Foot US

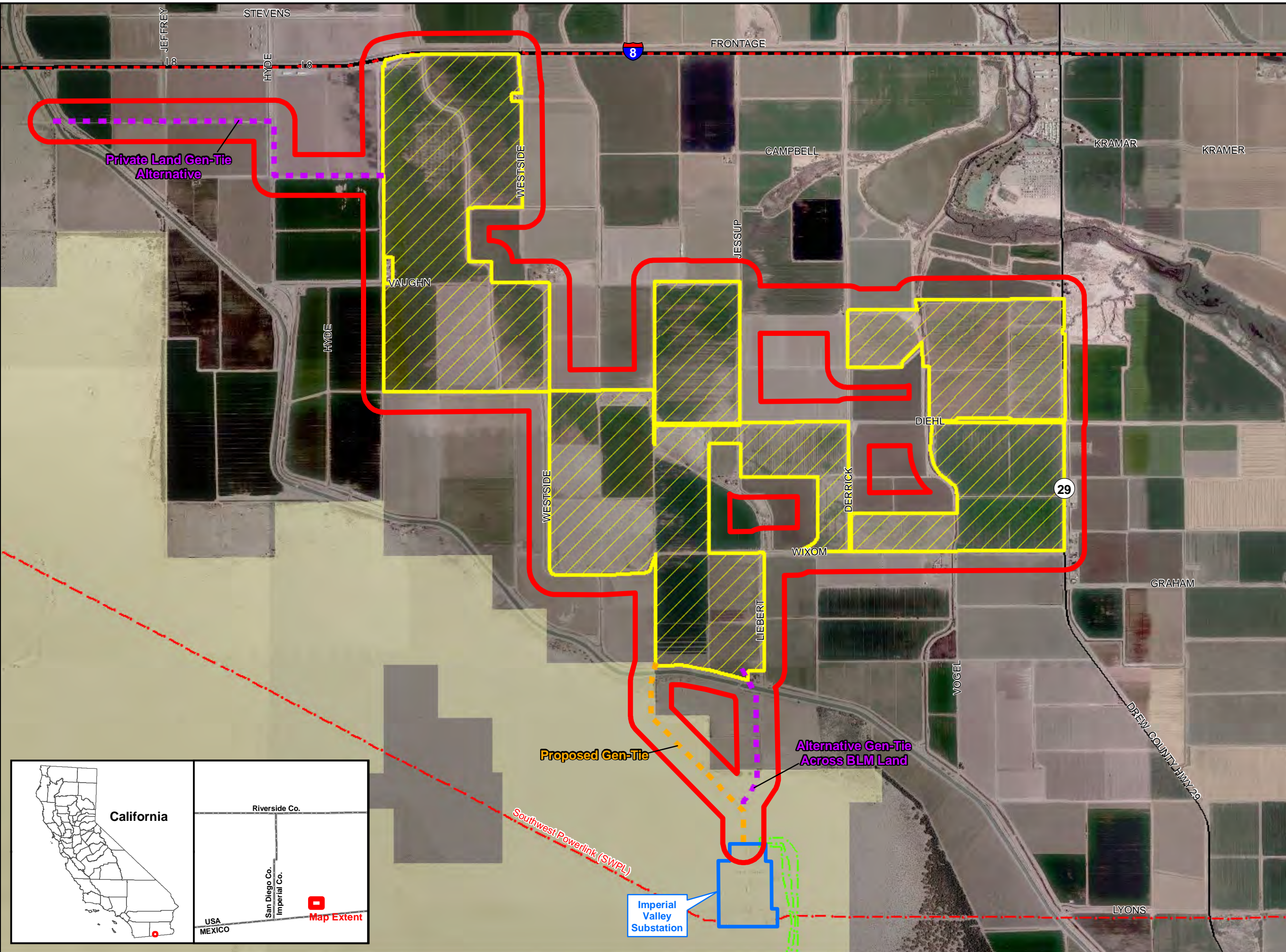
**CAMPO VERDE SOLAR**

**FIGURE 1 - REGIONAL LOCATION**

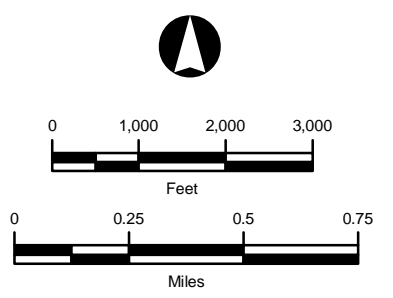
Map Extent: Imperial County, CA

Date: 01.17.12	Figure 1	Author: djb
I:\CampoVerdeSolar\Figure 1 Regional Location\1129111.mxd		





- Legend**
- Existing 500 kV Transmission Line
  - Existing 230 kV Transmission Line
  - Proposed Gen-Tie
  - Gen-Tie Alternative
  - Interstate
  - Major Road
  - County Boundary
  - Campo Verde Solar Site
  - Burrowing Owl Survey Area
  - Jurisdictional Land Ownership**
  - Bureau of Land Management Land



State Plane Coordinate System  
 California Zone 6, NAD 83  
 Lambert Conformal Conic Projection  
 1983 North American Datum  
 Linear Unit: Foot US

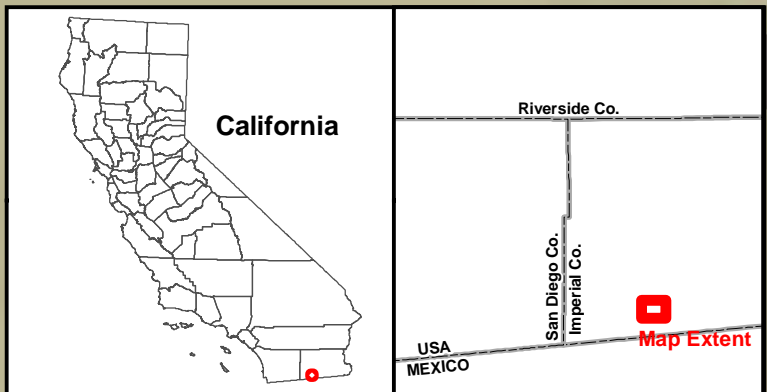
**CAMPO VERDE SOLAR PROJECT**

**FIGURE 2 - STUDY AREA**

Map Extent: Imperial County, California

Date: 02.15.12 Author: djb

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Imperial Valley Substation

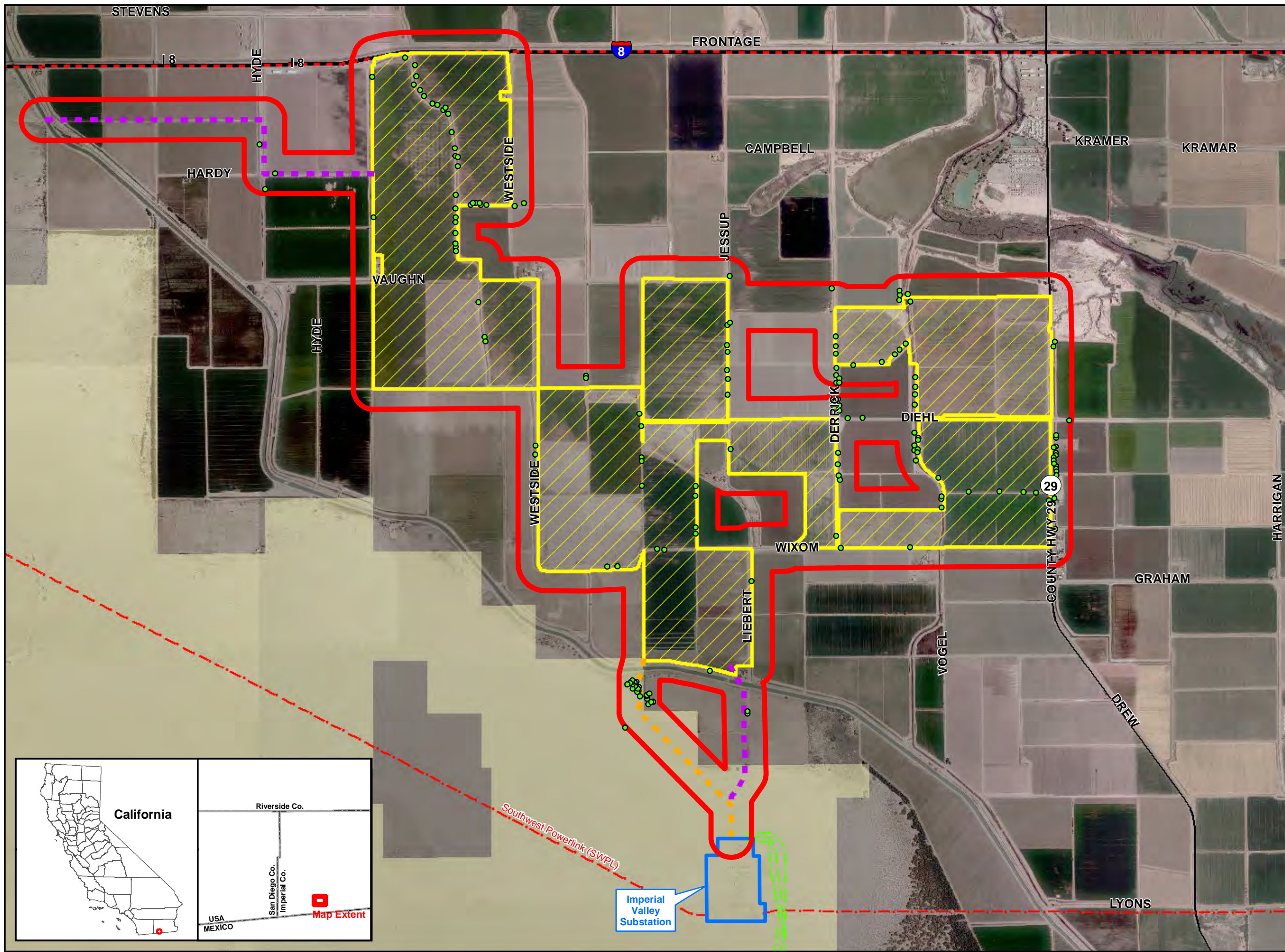
Southwest Powerlink (SWPL)

Proposed Gen-Tie

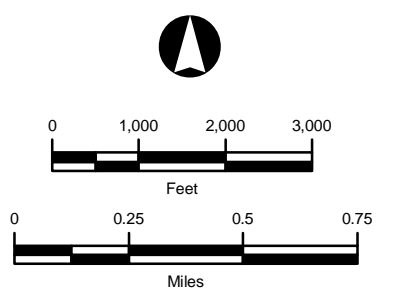
Alternative Gen-Tie Across BLM Land

Private Land Gen-Tie Alternative

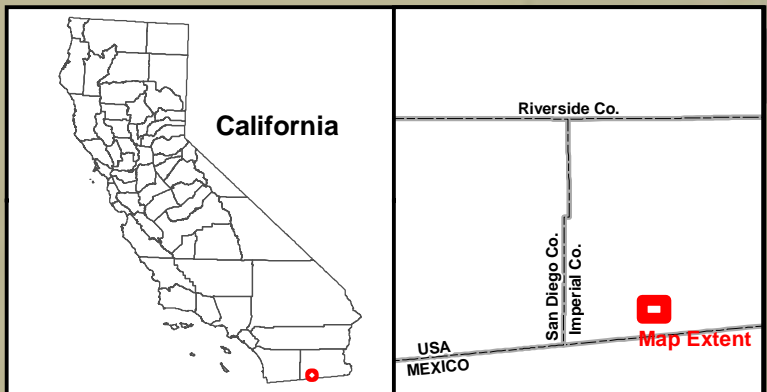




- Legend**
- Suitable Burrow
  - Existing 500 kV Transmission Line
  - Existing 230 kV Transmission Line
  - Proposed Gen-Tie
  - Gen-Tie Alternative
  - Interstate
  - Major Road
  - County Boundary
  - Campo Verde Solar Site
  - Burrowing Owl Survey Area
- Jurisdictional Land Ownership**
- Bureau of Land Management Land



State Plane Coordinate System  
 California Zone 6, NAD 83  
 Lambert Conformal Conic Projection  
 1983 North American Datum  
 Linear Unit: Foot US



**CAMPO VERDE SOLAR PROJECT**

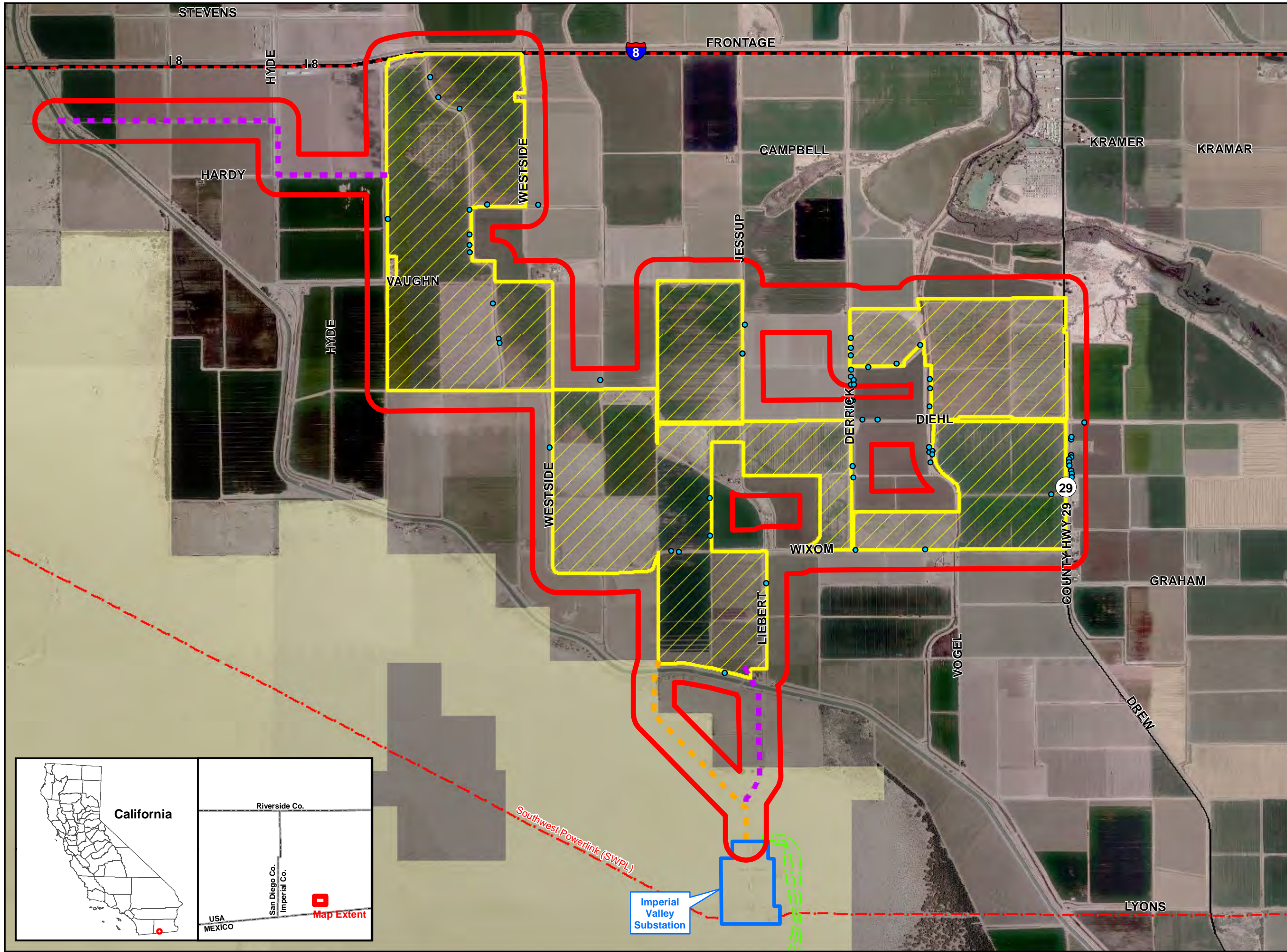
**FIGURE 3 - BURROWING OWL SUITABLE BURROW LOCATIONS**

Map Extent: Imperial County, California

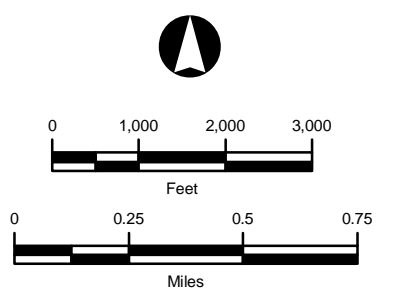
Date: 01.17.12	Author: djb
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Imperial Valley Substation

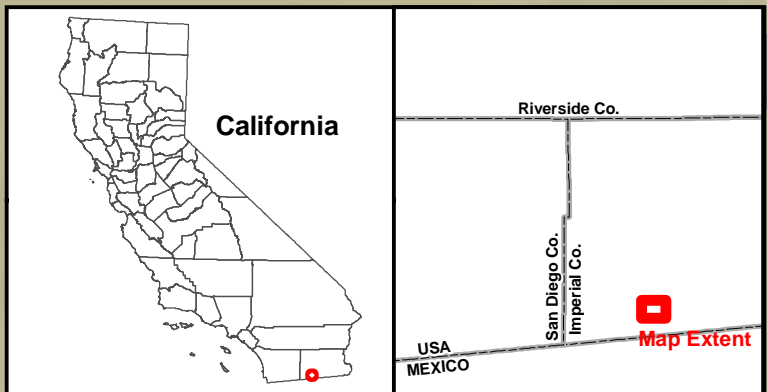




- Legend**
- Active Burrow
  - Existing 500 kV Transmission Line
  - Existing 230 kV Transmission Line
  - Proposed Gen-Tie
  - Gen-Tie Alternative
  - Interstate
  - Major Road
  - County Boundary
  - Campo Verde Solar Site
  - Burrowing Owl Survey Area
- Jurisdictional Land Ownership
- Bureau of Land Management Land



State Plane Coordinate System  
 California Zone 6, NAD 83  
 Lambert Conformal Conic Projection  
 1983 North American Datum  
 Linear Unit: Foot US



Imperial Valley Substation

**CAMPO VERDE SOLAR PROJECT**

**FIGURE 4 - BURROWING OWL ACTIVE BURROW LOCATIONS**

Map Extent: Imperial County, California

Date: 01.17.12	Author: djb
...Maps\Figure4ActiveBurrows.mxd	



**Selected Photos**

Adult Burrowing Owl and representative active burrow with pellets, whitewash, and other debris.



Representative potentially suitable man-made burrow (Eastern BLM Gen-tie Corridor).





Representative potentially suitable natural burrow (Western BLM Gen-tie Corridor).



Representative potentially suitable natural burrow with sign (whitewash)(Western BLM Gen-tie Corridor).



# 7.0 References

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# Appendix A – Active Burrow Owl Data

Burrow ID	Project Component	2011 Breeding Season		2011/2012 Winter Resident	
		Date	# Owls	Date	# Owls
2	500-foot Buffer	3/30/2011	1		
		3/31/2011	0		
		4/5/2011	1		
		4/6/2011	0		
3	500-foot Buffer	3/30/2011	1		
		3/31/2011	1		
		4/5/2011	1		
		4/6/2011	2		
5	500-foot Buffer	3/30/2011	1		
		3/31/2011	0		
		4/5/2011	0		
		4/6/2011	0		
6	500-foot Buffer	3/30/2011	2		
		3/31/2011	0		
		4/5/2011	0		
		4/6/2011	0		
7	500-foot Buffer	3/30/2011	0	12/7/2011	1
		3/31/2011	2	12/19/2011	1
		4/5/2011	1	1/5/2012	1
		4/6/2011	1	1/25/2012	1
8	500-foot Buffer	3/30/2011	1		
		3/31/2011	0		
		4/5/2011	0		
		4/6/2011	0		
10	500-foot Buffer	3/30/2011	0		
		3/31/2011	1		
		4/5/2011	0		
		4/6/2011	0		
11	500-foot Facility Buffer	3/30/2011	0		
		3/31/2011	2		
		4/5/2011	0		
		4/6/2011	0		
12	500-foot Facility Buffer	3/30/2011	0		
		3/31/2011	0		
		4/5/2011	1		
		4/6/2011	1		
13	500-foot Facility Buffer	3/30/2011	0		
		3/31/2011	2		
		4/5/2011	1		
		4/6/2011	1		

Burrow ID	Project Component	2011 Breeding Season		2011/2012 Winter Resident	
		Date	# Owls	Date	# Owls
16	500-foot Facility Buffer	3/30/2011	0		
		3/31/2011	2		
		4/5/2011	2		
		4/6/2011	2		
21	500-foot Facility Buffer	3/30/2011	0		
		3/31/2011	1		
		4/5/2011	0		
		4/6/2011	0		
22	500-foot Facility Buffer	3/30/2011	0		
		3/31/2011	2		
		4/5/2011	0		
		4/6/2011	0		
29	500-foot Facility Buffer	3/30/2011	0		
		3/31/2011	0		
		4/5/2011	2		
		4/6/2011	2		
30	500-foot Facility Buffer	3/30/2011	1		
		3/31/2011	0		
		4/5/2011	0		
		4/6/2011	0		
32	500-foot Facility Buffer	3/30/2011	0		
		3/31/2011	1		
		4/5/2011	1		
		4/6/2011	0		
35	500-foot Facility Buffer	3/30/2011	2	12/7/2011	0
		3/31/2011	0	12/19/2011	1
		4/5/2011	2	1/5/2012	0
		4/6/2011	2	1/25/2012	1
42	500-foot Facility Buffer	3/30/2011	1		
		3/31/2011	0		
		4/5/2011	0		
		4/6/2011	0		
45	500-foot Facility Buffer	3/30/2011	2		
		3/31/2011	2		
		4/5/2011	2		
		4/6/2011	2		
46	500-foot Facility Buffer	3/30/2011	2		
		3/31/2011	2		
		4/5/2011	2		
		4/6/2011	1		
49	500-foot Facility Buffer	3/30/2011	2	12/7/2011	2
		3/31/2011	2	12/19/2011	1
		4/5/2011	2	1/5/2012	0
		4/6/2011	1	1/25/2012	2

Burrow ID	Project Component	2011 Breeding Season		2011/2012 Winter Resident	
		Date	# Owls	Date	# Owls
50	500-foot Facility Buffer	3/30/2011	0		
		3/31/2011	2		
		4/5/2011	0		
		4/6/2011	0		
52	500-foot Facility Buffer	3/30/2011	1	12/14/2011	0
		3/31/2011	1	12/19/2011	0
		4/5/2011	2	1/5/2012	1
		4/6/2011	1	1/25/2012	0
53	500-foot Facility Buffer	3/28/2011	1	12/7/2011	0
		3/30/2011	0	12/19/2011	0
		3/31/2011	1	1/5/2012	1
		4/5/2011	0	1/25/2012	0
		4/6/2011	1		
54	500-foot Facility Buffer	3/28/2011	1		
		3/30/2011	2		
		3/31/2011	2		
		4/5/2011	2		
		4/6/2011	2		
55	500-foot Facility Buffer	3/28/2011	1	12/7/2011	0
		3/30/2011	2	12/19/2011	1
		3/31/2011	1	1/5/2012	0
		4/5/2011	1	1/25/2012	1
		4/6/2011	2		
56	500-foot Facility Buffer	3/28/2011	0		
		3/30/2011	1		
		3/31/2011	0		
		4/5/2011	0		
		4/6/2011	0		
58	Solar Facility	3/30/2011	0		
		3/31/2011	0		
		4/5/2011	1		
		4/6/2011	1		
61	500-foot Facility Buffer	3/28/2011	2	12/7/2011	0
		3/31/2011	2	12/19/2011	0
		4/5/2011	2	1/5/2012	1
		4/6/2011	2	1/25/2012	1
		4/7/2011	2		
62	500-foot Facility Buffer	3/28/2011	1		
		3/30/2011	1		
		3/31/2011	0		
		4/5/2011	1		
		4/6/2011	0		

Burrow ID	Project Component	2011 Breeding Season		2011/2012 Winter Resident	
		Date	# Owls	Date	# Owls
63	500-foot Facility Buffer	3/28/2011	0		
		3/30/2011	0		
		3/31/2011	1		
		4/5/2011	0		
		4/6/2011	0		
66	500-foot Facility Buffer	3/28/2011	1		
		3/30/2011	0		
		3/31/2011	0		
		4/5/2011	0		
		4/6/2011	0		
67	500-foot Facility Buffer	3/28/2011	1	12/7/2011	5
		3/30/2011	1	12/19/2011	4
		3/31/2011	0	1/5/2012	0
		4/5/2011	1	1/25/2012	3
		4/6/2011	1		
68	500-foot Facility Buffer	3/28/2011	2		
		3/30/2011	2		
		3/31/2011	1		
		4/5/2011	2		
		4/6/2011	2		
69	500-foot Facility Buffer			12/7/2011	0
				12/19/2011	0
				1/6/2012	1
				1/25/2012	0
70	500-foot Facility Buffer	3/28/2011	1		
		3/30/2011	0		
		3/31/2011	0		
		4/5/2011	0		
		4/6/2011	0		
72	Solar Facility	3/28/2011	1	12/7/2011	1
		3/30/2011	0	12/19/2011	1
		3/31/2011	0	1/6/2012	1
		4/5/2011	0	1/25/2012	2
		4/6/2011	0		
73	Solar Facility	3/28/2011	1		
		3/30/2011	0		
		3/31/2011	0		
		4/5/2011	0		
		4/6/2011	0		
74	Solar Facility	3/28/2011	1	12/7/2011	0
		3/30/2011	2	12/19/2011	1
		3/31/2011	2	1/6/2012	0
		4/5/2011	2	1/25/2012	1
		4/6/2011	2		
82	500-foot Facility Buffer	3/30/2011	0		
		3/31/2011	0		
		4/4/2011	1		
		4/5/2011	1		

Burrow ID	Project Component	2011 Breeding Season		2011/2012 Winter Resident	
		Date	# Owls	Date	# Owls
85	Solar Facility	3/30/2011	1	12/7/2011	0
		3/31/2011	1	12/20/2011	0
		4/4/2011	1	1/6/2012	1
		4/5/2011	0	1/23/2012	0
94	Solar Facility	3/30/2011	2		
		3/31/2011	2		
		4/4/2011	1		
		4/5/2011	2		
96	Solar Facility	3/30/2011	0		
		3/31/2011	0		
		4/4/2011	0		
		4/5/2011	2		
98	Solar Facility	3/30/2011	2		
		3/31/2011	2		
		4/5/2011	1		
		4/6/2011	1		
99	500-foot Facility Buffer	3/30/2011	2		
		3/31/2011	2		
		4/4/2011	2		
		4/5/2011	2		
		4/6/2011	2		
102	500-foot Facility Buffer			12/7/2011	0
				12/19/2011	1
				1/5/2012	1
				1/23/2012	0
103	500-foot Facility Buffer	3/31/2011	0	12/7/2011	0
		4/1/2011	0	12/19/2011	1
		4/4/2011	2	1/5/2012	0
		4/5/2011	1	1/23/2012	0
109	Solar Facility	3/31/2011	2	12/7/2011	1
		4/1/2011	2	12/19/2011	0
		4/4/2011	1	1/6/2012	0
		4/5/2011	1	1/23/2012	0
110	Solar Facility	3/31/2011	1	12/7/2011	1
		4/1/2011	1	12/19/2011	0
		4/4/2011	1	1/6/2012	0
		4/5/2011	1	1/23/2012	0
111	Solar Facility	3/31/2011	2	12/7/2011	2
		4/1/2011	2	12/20/2011	0
		4/4/2011	2	1/6/2012	1
		4/5/2011	2	1/23/2012	0

Burrow ID	Project Component	2011 Breeding Season		2011/2012 Winter Resident	
		Date	# Owls	Date	# Owls
112	Solar Facility	3/31/2011	0		
		4/1/2011	1		
		4/4/2011	2		
		4/5/2011	1		
114	Solar Facility	3/31/2011	0		
		4/1/2011	0		
		4/4/2011	1		
		4/5/2011	0		
115	Solar Facility	3/31/2011	1		
		4/1/2011	2		
		4/4/2011	1		
		4/5/2011	1		
118	Solar Facility	3/29/2011	1		
		3/31/2011	0		
		4/1/2011	0		
		4/4/2011	0		
		4/5/2011	0		
123	Solar Facility			12/7/2011	0
				12/20/2011	1
				1/6/2012	0
				1/23/2012	0
127	Solar Facility	3/29/2011	2	12/7/2011	1
		3/31/2011	2	12/20/2011	0
		4/1/2011	2	1/6/2012	0
		4/4/2011	1	1/23/2012	0
		4/5/2011	1		
128	Solar Facility			12/7/2011	1
				12/20/2011	0
				1/6/2012	0
				1/23/2012	0
129	Solar Facility	3/29/2011	2		
		3/31/2011	2		
		4/1/2011	1		
		4/4/2011	1		
		4/5/2011	1		



Burrow ID	Project Component	2011 Breeding Season		2011/2012 Winter Resident	
		Date	# Owls	Date	# Owls
130	Solar Facility			12/7/2011	0
				12/20/2011	1
				1/6/2012	0
				1/23/2012	0
131	Solar Facility			12/7/2011	0
				12/20/2011	0
				1/6/2012	1
				1/23/2012	0
132	Solar Facility	3/29/2011	0	12/7/2011	0
		3/31/2011	0	12/20/2011	0
		4/1/2011	1	1/6/2012	0
		4/4/2011	0	1/23/2012	1
		4/5/2011	0		
137	500-foot Facility Buffer			12/7/2011	1
				12/20/2011	0
				1/6/2012	0
				1/23/2012	0
138	Solar Facility	3/29/2011	0		
		3/31/2011	0		
		4/1/2011	0		
		4/4/2011	0		
		4/5/2011	1		
141	500-foot Facility Buffer	3/29/2011	2		
		3/31/2011	0		
		4/1/2011	1		
		4/4/2011	0		
		4/5/2011	1		
145	Solar Facility	3/29/2011	1	12/7/2011	1
		3/31/2011	1	12/20/2011	1
		4/1/2011	2	1/6/2012	1
		4/4/2011	0	1/23/2012	0
		4/5/2011	0		
146	Solar Facility	3/30/2011	2		
		3/31/2011	0		
		4/4/2011	0		
		4/5/2011	1		

Burrow ID	Project Component	2011 Breeding Season		2011/2012 Winter Resident	
		Date	# Owls	Date	# Owls
147	500-foot Facility Buffer	3/30/2011	2	12/7/2011	0
		3/31/2011	2	12/19/2011	1
		4/5/2011	2	1/5/2012	0
		4/6/2011	2		
149	500-foot Facility Buffer	3/31/2011	2	12/7/2011	1
		4/5/2011	0	12/19/2011	0
		4/6/2011	0	1/5/2012	0
		4/7/2011	0	1/25/2012	0
150	Solar Facility	3/31/2011	1		
		4/5/2011	0		
		4/6/2011	0		
		4/7/2011	0		
151	500-foot Facility Buffer	4/1/2011	2	12/7/2012	0
		4/4/2011	1	12/19/2011	1
		4/5/2011	1	1/6/2012	1
		4/6/2011	1	1/23/2012	0
153	Solar Facility	3/30/2011	2	12/7/2012	1
		3/31/2011	1	12/19/2011	0
		4/4/2011	0	1/6/2012	0
		4/5/2011	1	1/23/2012	0
154	500-foot Facility Buffer	4/6/2011	1		
172	500-foot Non-BLM Gen-tie Buffer			12/7/2011	1
				12/20/2011	0
				1/6/2012	0

Burrow ID	Project Component	2011 Breeding Season		2011/2012 Winter Resident	
		Date	# Owls	Date	# Owls
174	500-foot Non-BLM Gen-tie Buffer			12/7/2011	0
				12/20/2011	0
				1/6/2012	1
				1/23/2012	0
196				12/7/2011	1
				12/19/2011	0
				1/5/2012	0
				1/25/2012	0
198				12/7/2011	1
				12/19/2011	0
199				12/7/2011	1
				12/19/2011	0
				1/5/2012	2
				1/25/2012	0
200				12/7/2011	1
				12/19/2011	0
				1/5/2012	0
				1/25/2012	0
202				12/19/2011	1
				1/6/2012	0
				1/25/2012	0
203				1/5/2012	0
				1/23/2012	0
204				12/20/2011	1
				1/6/2012	1
				1/25/2012	0
205				1/5/2012	2
				1/25/2012	1