

Biological Technical Report for the Z Global Leo Solar Project

Kings County, California



Prepared For:

Z Global, Inc.

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CONTENTS

1.0	INTRODUCTION.....	1
1.1	Location and Setting.....	1
1.2	Project Description	1
1.3	Purpose.....	1
1.4	Special-Status Species Regulations.....	4
2.0	METHODOLOGY	5
2.1	Literature Review	5
2.2	Biological Reconnaissance Survey	6
3.0	RESULTS	7
3.1	Literature Review	7
3.1.1	Special-Status Plants	7
3.1.2	Special-Status Wildlife	11
3.1.3	USFWS Designated Critical Habitat.....	16
3.1.4	Jurisdictional Drainages	17
3.2	Biological Reconnaissance Survey	17
3.2.1	Property Characteristics	17
3.3	Plants.....	17
3.4	Wildlife.....	18
3.5	Jurisdictional Drainages	18
3.6	Raptors and Migratory Birds	18
3.7	Wildlife Movement Corridors and Linkages	18
4.0	DISCUSSION.....	18
5.0	MITIGATION, MINIMIZATION, AND AVOIDANCE MEASURES	20
6.0	CERTIFICATION	24
7.0	LITERATURE CITED.....	25

LIST OF TABLES

Table 1.	CNPS Status Designations.....	8
Table 2.	Weather Conditions during the Survey	17

LIST OF FIGURES

Figure 1.	Project Vicinity.....	2
Figure 2.	Project Location.....	3

LIST OF ATTACHMENTS

Appendix A – Project Site Map (With CNDDB Records)

Appendix B – Representative Project Site Photographs

Appendix C – Plant Compendium

Appendix D – Wildlife Compendium

1.0 INTRODUCTION

ECORP Consulting, Inc. (ECORP) conducted a biological reconnaissance survey for the proposed Z Global – Leo Solar project (project). The biological reconnaissance survey was conducted for the purposes of determining the baseline biological conditions and to identify any biological constraints that could affect the site plan for the project. The project site consisted of undeveloped land in an unincorporated area near Kettleman City, Kings County, California (Figure 1). The project site consisted of one parcel totaling approximately 40 acres. The assessor's parcel number for the project site is 048-350-016-000. The project will be subject to county, state, and federal regulations regarding compliance with the federal Endangered Species Act (ESA), California ESA, Migratory Bird Treaty Act (MBTA), and California Fish and Game Code (FGC).

1.1 Location and Setting

The project site is located on the Kings County and Kern County line, between California State Route 33 and Interstate 5, approximately 0.5 mile east of 25th Avenue, Kings County, California (Figure 2). The project site is located within the San Joaquin Valley, which is a part of the larger Central Valley of California. The site is bounded by undeveloped land to the north, east, and west, and active agriculture and undeveloped land to the south. Surrounding land uses included agriculture, livestock grazing, and open land. The project site, as depicted on United States Geological Survey (USGS) 7.5-minute Avenal Gap topographic quadrangle, lies within Section 36 of Township 24 South, Range 19 East. Elevation on the project site is approximately 315 feet (ft) above mean sea level [msl].

1.2 Project Description

The parcel is under consideration for development of 3 megawatt (MW) photo voltaic solar power generating facility. The solar panels will occupy approximately 20 acres of the 40 acre parcel. The facility would consist of solar photovoltaic modules mounted on fixed-tilt ground-mounted racking or single axis trackers, utility scale central inverters, associated transformers, power poles, an access road, and perimeter fencing. The project would feed into existing electrical distribution lines and be decommissioned after 25 years of service.

1.3 Purpose

ECORP conducted a biological reconnaissance survey that included characterizing the vegetation communities present on the project site, identifying suitable habitat for special-status species, and assessing the potential for special-status species and habitats to occur. The purpose of the biological reconnaissance survey and the literature review was to determine the baseline biological conditions on the project site and to identify any biological constraints that could affect the site plan for the project.

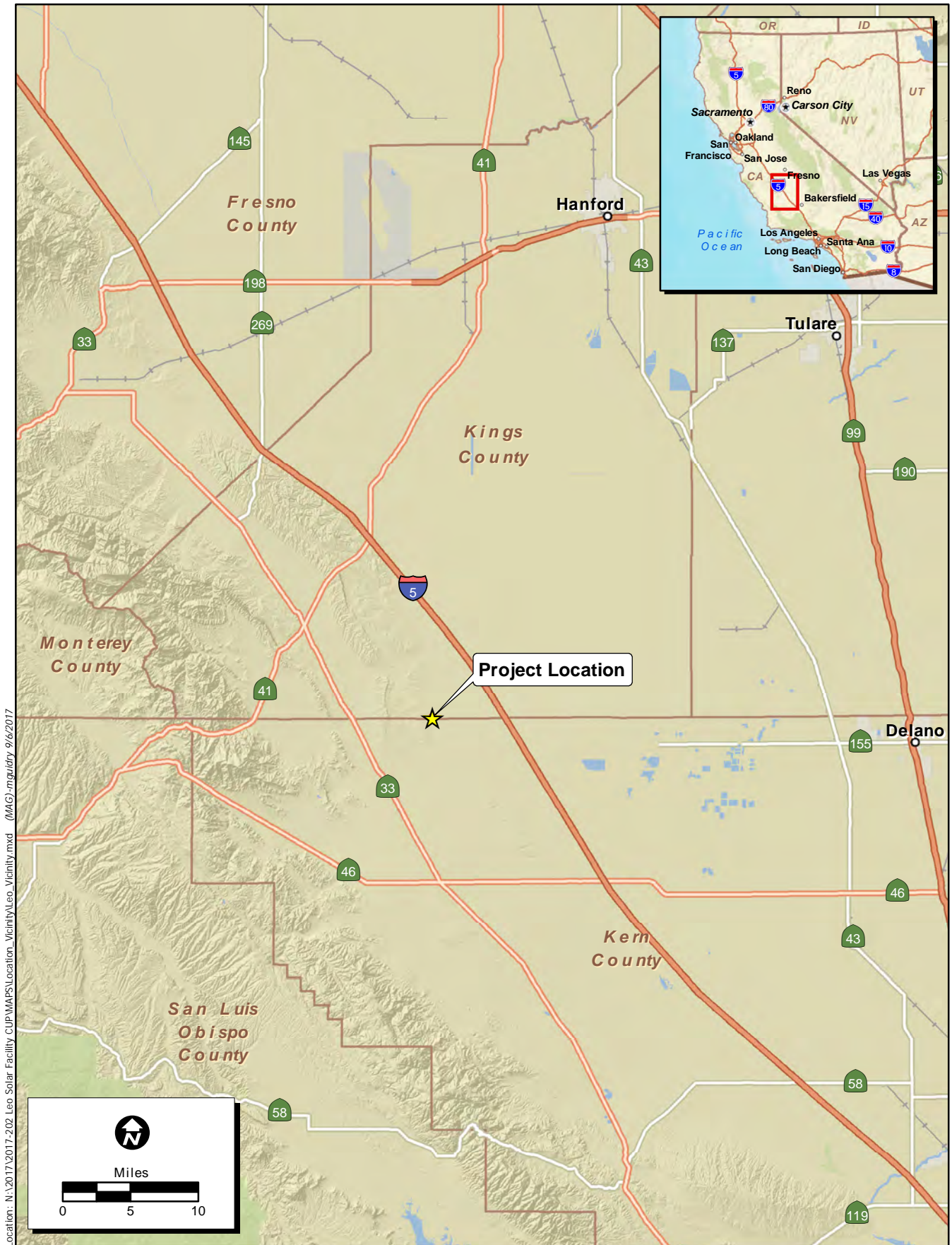
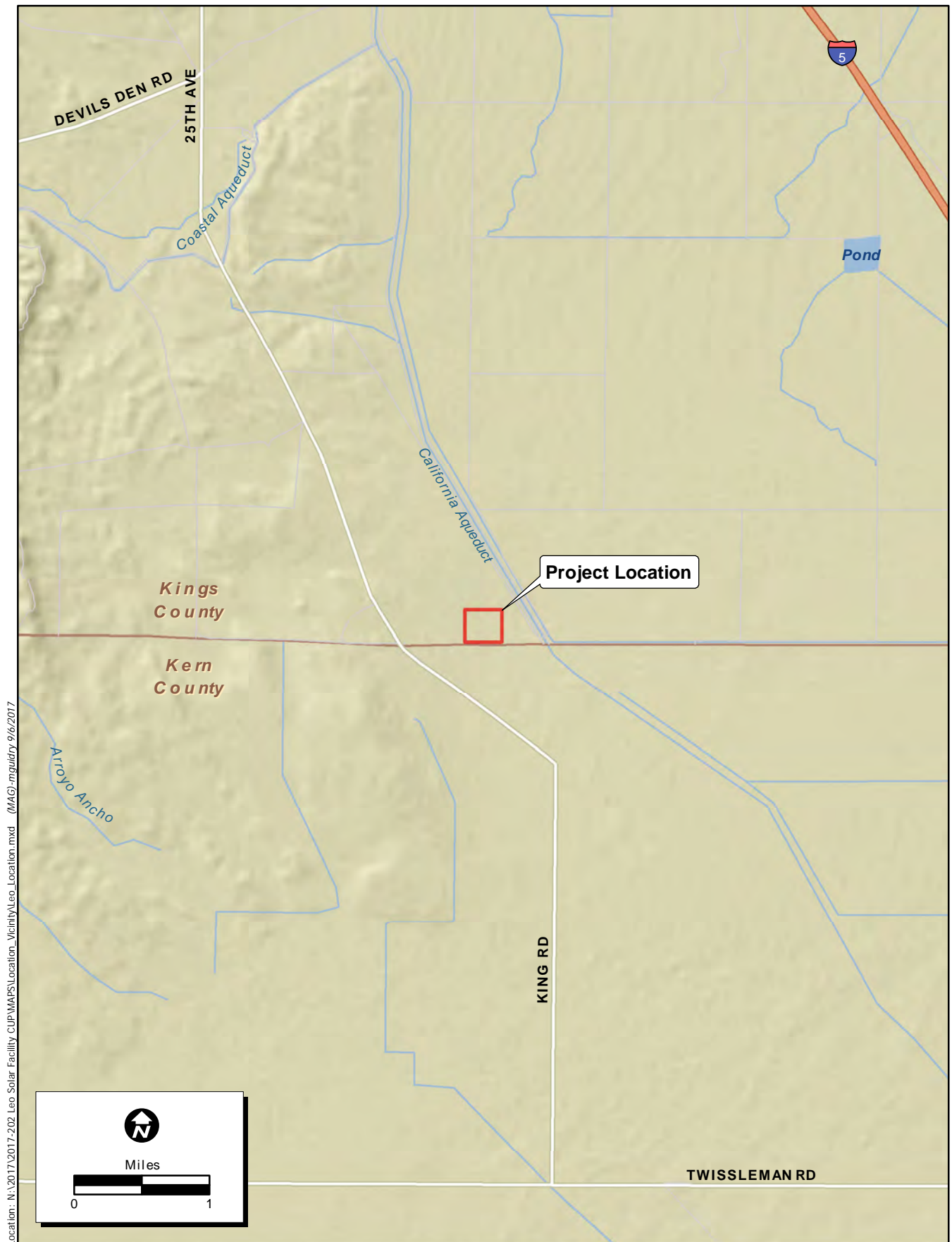


Figure 1. Project Vicinity

2017-2022 Leo Solar Facility CUP



Location: N:\2017\2017-202 Leo Solar Facility CUP\MAPS\Location_Vicinity\Leo_Location.mxd (MAG.mxd) 9/6/2017

Map Date: 9/6/2017
Source: ESRI

Figure 2. Project Location
2017-202 Leo Solar Facility CUP

1.4 Special-Status Species Regulations

This literature review and biological reconnaissance survey was conducted to identify potential issues and ensure compliance with state and federal regulations regarding listed, protected, and sensitive species. The regulations are detailed below:

- The Federal Endangered Species Act of 1973 (FESA) (16 U.S.C. section 1531 et seq.) provides for the conservation of endangered and threatened species listed pursuant to Section 4 of FESA (16 U.S.C. section 1533) and the ecosystems upon which they depend. Two sections of this law mandate protection for species in this category: FESA § 9: It is unlawful for anyone to “take” a listed animal. Take may be direct, e.g., harming or killing species, and indirect, e.g., by significantly modifying its habitat in such a way that it causes harm to the species (USFWS 1973). The second part, Section 7 of FESA (16 U.S.C. section 1536) requires Federal agencies to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of threatened or endangered species or result in the destruction or adverse modification of Critical Habitat for these species. The USFWS administers this federal program (USFWS 1973).
- The California Endangered Species Act (CESA) (FGC section 2050 et seq.) requires the California Department of Fish and Wildlife (CDFW) to establish a list of endangered and threatened species (section 2070) and to prohibit the incidental taking of any such listed species except as allowed by the Act (sections 2080-2089). In addition, CESA prohibits take of candidate species (under consideration for listing). The definition of “take” includes harass, harm, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct.
- CESA also requires the CDFW to comply with the California Environmental Quality Act (CEQA) (Pub. Resources Code Section 21000 et seq.) when evaluating incidental take permit applications [FGC section 2081(b) and California Code of Regulations, Title 14, section 783.0 et seq.], and the potential impacts the project or activity for which the application was submitted may have on the environment. The CDFW’s CEQA obligations include consultation with other public agencies that have jurisdiction over the project or activity [California Code of Regulations, Title 14, section 783.5(d)(3)], but in no event may the CDFW issue an incidental take permit if issuance would jeopardize the continued existence of the species [FGC section 2081(c); California Code Regulations, Title 14, section 783.4(b)] (CDFG 1984).
- The Migratory Bird Treaty Act (MBTA) of 1918 (16 USC sections 703-712) is a federal law that implements international treaties and conventions held to protect migratory birds (USFWS 1918). The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 CFR Part 10. This includes feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR 21). The MBTA requires that project-related disturbance at active nesting territories be reduced or eliminated during critical phases of the nesting cycle (February 1 to August 31, annually) to avoid nest abandonment and/or loss of eggs or young. The loss of habitat upon which the birds depend could constitute a violation of the MBTA. In addition to MBTA, CDFW also enforces the protection of non-game native birds. Sections 3503, and 3503.5 of the FGC mandate the protection of California non-

game native birds' nests, and FGC 3800 makes it unlawful to take California-native non-game birds (CDFG 1984).

- The Bald and Golden Eagle Protection Act (The Eagle Act) of 1940 and amended in 1962 was first employed for the protection of bald eagles (*Haliaeetus leucocephalus*). In 1962 the Eagle Act was amended to include golden eagles (*Aquila chrysaetos*) as well. This addition was made to help strengthen the protection of bald eagles who were often times killed by people confusing them with golden eagles. This act has made it illegal to import, export, take, sell, purchase, or barter bald or golden eagles (USFWS 1940).
- The Native Plant Protection Act (NPPA) of 1977 (FGC sections 1900-1913) is a state act that was created to help "preserve, protect, and enhance rare and endangered plants in this state." The NPPA is regulated by the CDFW who has the authority to classify native plants as endangered or rare to help prevent these species from take. Endangered and rare plants species would also be provided additional protection under CESA.

2.0 METHODOLOGY

The methods used for the literature review and biological reconnaissance survey are presented below.

2.1 Literature Review

Prior to conducting the biological reconnaissance survey, a literature review was performed using the CDFW's California Natural Diversity Database (CNDDDB; CDFW 2017a) and the California Native Plant Society's (CNPS) Electronic Inventory (CNPSEI; CNPS 2017) to determine the special-status species that have been documented in the vicinity of the project site. The CNDDDB and CNPSEI database searches were conducted on August 28, 2017 (CDFW 2017a; CNPS 2017). ECORP searched CNDDDB and CNPSEI records within the project boundaries as depicted on USGS 7.5-minute Avenal Gap topographic quadrangle, plus the surrounding eight topographic quadrangles, including Antelope Plain, Dudley Ridge, Emigrant Hill, Kettleman Plain, Los Viejos, Pyramid Hills, Sawtooth Ridge, and West Camp. The CNDDDB and CNPSEI contain records of reported occurrences of federal and/or state-listed endangered, threatened, proposed endangered or threatened species, California Species of Special Concern (SSC), and/or other special-status species or habitats that may occur on or in the vicinity of the project. Additional information was gathered from the following sources and includes, but is not limited to:

- Natural Resources Conservation Service "Web Soil Survey" (NRCS 2017);
- State and Federally Listed Endangered and Threatened Animals of California (CDFG 2011);
- Special Animals List (CDFW 2017a);
- The Jepson Manual (Hickman 1993);
- various online websites (e.g., Calflora 2017); and
- The Manual of California Vegetation, 2nd Edition (Sawyer et al. 2009).

Using this information and observations in the field, a list of special-status plant and animal species that have the potential to occur on or around the project was generated. For the purposes of this assessment, special-status species are defined as plants or animals that:

- have been designated as either rare, threatened, or endangered by CDFW, CNPS, or the U.S. Fish and Wildlife Service (USFWS), and/or are protected under either FESA or CESA;
- are candidate species being considered or proposed for listing under these same acts;
- are fully protected by the California FGC, Sections 3511, 4700, 5050, or 5515; and/or
- are of expressed concern to resource and regulatory agencies, or local jurisdictions.

Special-status species reported for the region in the literature review or for which suitable habitat occurs on the project site were assessed for their potential to occur within the project site based on the following guidelines:

- Present: The species was observed on site during a site visit or focused survey.
- High: Habitat (including soils and elevation factors) for the species occurs on site and a known occurrence has been recorded within five miles of the site.
- Moderate: Either habitat (including soils and elevation factors) for the species occurs on site and a known occurrence has been reported in the database, but not within five miles of the site, or a known occurrence occurs within five miles of the site and marginal or limited amounts of habitat occurs on site.
- Low: Limited habitat for the species occurs on site and a known occurrence has been reported in the database, but not within five miles of the site, or suitable habitat strongly associated with the species occurs on site, but no records were found in the database search.
- Presumed Absent: Focused surveys were conducted and the species was not found, or species was found in the database search but habitat (including soils and elevation factors) is not present on site, or the known geographic range of the species does not include the survey area.

Note that location information on some special-status species in the CNDDDB may be of questionable accuracy or may be unavailable. Therefore, for survey purposes, the environmental factors associated with a species' occurrence requirements may be considered sufficient reason to give a species a positive potential for occurrence. In addition, just because a record of a species does not exist in the databases does not mean it does not occur. In many cases, records may not be present in the databases because an area has not been surveyed for that particular species.

2.2 Biological Reconnaissance Survey

The biological reconnaissance survey was conducted by walking the entire project site to determine the vegetation communities and wildlife habitats on the project site. The biologist documented the plant and animal species present on the project site and the location and condition of the project site were assessed for the potential to provide habitat for special-status plant and wildlife species. Data were recorded on Global Positioning System (GPS) units, field notebooks, and maps. Photographs were also taken during the survey to provide visual representation of the condition of

the project site. The project site was also examined to assess its potential to function as a movement corridor for wildlife moving throughout the region.

All plant and wildlife species, including any special-status species that were observed during the survey, were recorded. Plant and wildlife species were identified using a variety of sources including but not limited to:

- The Jepson Manual, vascular plants of California, second edition (Hickman 1993);
- A Field Guide to Western Reptiles and Amphibians (Stebbins 2003);
- The American Ornithologists' Union (AOU) Checklist of North American Birds, 7th edition with 53rd Supplement (American Ornithologists' Union [AOU] 1998, 2012); and
- Mammal Species of the World (Wilson and Reeder 2005).

In instances where a special-status species was observed, the date, species, location, habitat, and GPS coordinates were recorded. Locations of incidentally observed special-status species were recorded using a handheld GPS in NAD 83, UTM coordinates, Zone 11S.

3.0 RESULTS

Summarized below are the results of the literature review, database searches, and field surveys, including site characteristics, vegetation communities, wildlife, special-status species, and special-status habitats (including any potential wildlife corridors).

3.1 Literature Review

The literature review and database searches resulted in records for 13 special-status plant species and 13 special-status wildlife species that could occur on and/or in the vicinity of the project site.

3.1.1 *Special-Status Plants*

There were 13 special-status plants that appeared in the literature review and database searches for the project site. A list was generated from the results of the literature review and the project was evaluated for suitable habitat to support any of the special-status plant species on the list. Of the 13 special-status wildlife species identified in the literature review, one was found to have a high potential to occur, two were found to have a moderate potential to occur, nine were found to have a low potential to occur, and one species is presumed absent from the project site.

For the purposes of this study, plants with CNPS designation of 4.3 were not included in this analysis, as they are defined as "not very endangered in California (<20% of occurrences threatened or no current threats known)" (CNPS 2016). The 13 special-status plant species are listed below with their status designation. Descriptions of the CNPS designations can be found in Table 1.

Table 1. CNPS Status Designations

List Designation	Meaning
1A	Plants Presumed Extirpated in California and Either Rare or Extinct Elsewhere
1B	Plants Rare, Threatened, or Endangered in California and Elsewhere
2A	Plants Presumed Extirpated in California, But Common Elsewhere
2B	Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere
3	Plants about which we need more information; a review list
4	Plants of limited distribution; a watch list
List 1B, 2, and 4 extension meanings:	
.1	Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)
.2	Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)

Note: According to CNPS (Skinner and Pavlik 1994), plants on Lists 1B and 2 meet definitions for listing as threatened or endangered under Section 1901, Chapter 10 of the California FGC (CDFG 1984). This interpretation is inconsistent with other definitions.

Special-Status Plant Species with a High Potential to Occur

The following species have a high potential to occur due to the presence of suitable habitat (including soils and elevation factors) for the species occurring on the project site and a known occurrence that has been recorded within five miles of the project site.

San Joaquin woollythreads (Monolopia congdoni)

San Joaquin woollythreads is a CNPS list 1B.2 and federally listed endangered plant species that is typically found in shadescale scrub, valley grassland, and foothill woodland habitats. The project site, consisting of nonnative grassland, provided suitable habitat for this species and the database searches identified one record of this species within five miles of the project site. The closest record of this species was identified in 1992 approximately 0.5 mile north of the project site (Appendix A). The same location was then revisited in 2013 and no San Joaquin woollythreads were observed, but excellent habitat was still present for the species (CDFW 2017a). Therefore, this species has been classified as having a high potential to occur on the project site.

Special-Status Plant Species with a Moderate Potential to Occur

The following species have a moderate potential to occur on the project site because either habitat for the species occurs on site and a known occurrence has been reported in the database, but not within five miles of the site, or a known occurrence within five miles of the site and marginal or limited amounts of habitat occurs on site.

Lost Hills crownscale (Atriplex coronata var. vallicola)

Lost Hills crownscale is a CNPS list 1B.2 plant species that is typically found in shadescale scrub, valley grassland, freshwater wetlands, and wetland-riparian habitats. The project site, consisting of nonnative grassland, provided marginally suitable habitat for this species, but the database searches

identified one record of this species within five miles of the project site. The closest record of this species was identified in 2010 approximately 4.3 miles northeast of the project site (CDFW 2017a). Therefore, this species has been classified as having a moderate potential to occur on the project site.

Recurved larkspur (Delphinium recurvatum)

Recurved larkspur is a CNPS list 1B.2 plant species that is typically found in shadescale scrub, valley grassland, and foothill woodland habitats. The project site, consisting of nonnative grassland, provided marginally suitable habitat for this species, but the database searches identified one record of this species within five miles of the project site. The closest record of this species was identified in 2005 approximately 3.5 miles northwest of the project site (CDFW 2017a). Therefore, this species has been classified as having a moderate potential to occur on the project site.

Special-Status Plant Species with a Low Potential to Occur

The following species have a low potential to occur on the project site because limited habitat for the species occurs on site and a known occurrence has been reported in the database, but not within five miles of the site, or suitable habitat strongly associated with the species occurs on site, but no records were found in the database search.

Forked fiddleneck (Amsinckia furcata)

Forked fiddleneck is a CNPS list 4.2 plant species that is typically found in valley grassland and foothill woodland habitats. The project site, consisting of nonnative grassland, provided marginally suitable habitat for this species and the database searches did not identify any records within five miles of the project site. The closest record of this species was identified in 1937 approximately 12.3 miles northwest of the project site (CNPS 2017a). Therefore, this species has been classified as having a low potential to occur on the project site.

Crownscale (Atriplex coronata var. coronata)

Crownscale is a CNPS list 4.2 plant species that is typically found in valley and foothill grassland, chenopod scrub, and vernal pools habitats. The project site, consisting of nonnative grassland, provided marginally suitable habitat for this species and the database searches did not identify any records within five miles of the project site. The closest record of this species was identified in 1988 approximately 12.3 miles northwest of the project site (CNPS 2017). Therefore, this species has been classified as having a low potential to occur on the project site.

California jewel flower (Caulanthus californicus)

California jewel flower is a CNPS list 1B.1 plant species. This species is also federally and state listed as endangered. This plant species is typically found in shadescale scrub, valley grassland, and pinyon-juniper woodland. The project site, consisting of nonnative grassland, provided marginally suitable habitat for this species and the database searches did not identify any records within five miles of the project site. Additionally, all known populations of this species are limited to three areas within hilly terrain west of the San Joaquin Valley. These locations include the Carrizo Plain, Santa Barbara Canyon, and the Kreyenhagen Hills (Fresno County) (USFWS 1998). The closest record of

this species was identified in 1935 approximately 9.1 miles south of the project site. The location of that record was revisited in 1986 and the habitat was eliminated, and the only remaining habitat was highly disturbed due to oil and gas development (CDFW 2017a). Therefore, this species has been classified as having a low potential to occur on the project site.

Lemmon's jewelflower (Caulanthus lemmonii)

Lemmon's jewelflower is a CNPS list 1B.2 plant species. This plant species is typically found in pinyon-juniper woodland and valley grassland, but current populations are confined to the foothills west of the San Joaquin Valley floor. The project site located within the valley floor only provided marginally suitable habitat for this species and no records were identified within five miles of the project site. The closest record of this species was identified in 1962 approximately 19.2 miles northwest of the project site (CDFW 2017a). Therefore, this species has been classified as having a low potential to occur on the project site.

Round-leaved fillaree (California macrophylla)

Round-leaved fillaree is a CNPS list 1B.2 plant species that is typically found in valley grassland and foothill woodland habitats, but current populations are confined to the foothills west, south, and east of the San Joaquin Valley floor. The project site located within the valley floor only provided marginally suitable habitat for this species and no records were identified within five miles of the project site. One record of this species was identified in 1935 approximately 13.0 miles west of the project site (CDFW 2017a). Therefore, this species has been classified as having a low potential to occur on the project site.

Hoover's Eriastrum (Eriastrum hooveri)

Hoover's eriastrum is a CNPS list 4.2 plant species that is typically found in valley grassland and shadscale scrub habitats. The project site, consisting of nonnative grassland, provided marginally suitable habitat for this species and the database searches did not identify any records within five miles of the project site. The closest record of this species was identified approximately 10.6 miles north of the project site (CNPS 2017). Therefore, this species has been classified as having a low potential to occur on the project site.

Munz's tidy-tips (Layia munzii)

Munz's tidy-tips is a CNPS list 1B.2 plant species that is typically found in valley grassland, shadscale scrub, and wetland-riparian habitats. The project site, consisting of nonnative grassland, provided marginally suitable habitat for this species and the database searches did not identify any records within five miles of the project site. One record of this species was identified in 1954 approximately 7.8 miles south of the project site (CDFW 2017a). Therefore, this species has been classified as having a low potential to occur on the project site.

Jared's pepper-grass (Lepidium jaredii ssp. jaredii)

Jared's pepper-grass is a CNPS list 1B.2 plant species that is typically found in valley grassland habitats that contain washes or alluvial-fans. Current populations are confined to the foothills west, of the San Joaquin Valley floor. The project site located within the valley floor only provided

marginally suitable habitat for this species and no records were identified within five miles of the project site. One record of this species was identified in 1989 approximately 11.5 miles southwest of the project site (CDFW 2017a). Therefore, this species has been classified as having a low potential to occur on the project site.

San Joaquin bluecurls (Trichostema ovatum)

San Joaquin bluecurls is a CNPS list 4.2 plant species that is typically found in valley grassland habitat. The project site, consisting of nonnative grassland, provided marginally suitable habitat for this species but the database searches did not identify any records within five miles of the project site. The closest record of this species was identified in 2010 approximately 7.9 miles north of the project site (CNPS 2017). Therefore, this species has been classified as having a low potential to occur on the project site.

Plant Species Presumed Absent

The following species is presumed absent from the project site due to the lack of suitable habitat, soil type, and/or elevation range at the project site.

Kings gold (Tropidocarpum californicum)

Kings gold is a CNPS list 1B.1 plant species that is typically found in chenopod scrub habitats. No chenopod scrub was identified on the project site. In addition, the known elevation range for this species is not present on site, therefore, this species has been presumed absent from the project site (CNPS 2017).

3.1.2 Special-Status Wildlife

Of the 13 special-status wildlife species identified in the literature review, three were found to have a high potential to occur, two were found to have a moderate potential to occur, six were found to have a low potential to occur, and two species are presumed absent from the project site. A brief natural history and discussion of the 13 special-status wildlife species identified in the literature review is provided below.

Special-Status Wildlife Species with a High Potential to Occur

The following species have a high potential to occur on the project site due to the presence of suitable habitat (including soils and elevation factors) for the species occurring on the project site and a known occurrence that has been recorded within five miles of the project site.

Burrowing owl (Athene cunicularia)

The burrowing owl is a CDFW SSC (CDFW 2017b). It is typically found in dry open areas with few trees and short grasses; it can also be found in vacant lots near human habitation. It uses uninhabited mammal burrows for roosts and nests. It primarily feeds on large insects and small mammals, but will also eat birds and small reptiles. The project site contained suitable open habitat with soils suitable for burrowing, and California ground squirrels (*Otospermophilus beecheyi*), for which burrowing owls sometimes rely for burrows, were observed on site. One suitable burrowing

owl burrow (no owl sign observed) was identified on the project site. The burrow was likely an old coyote (*Canis latrans*) den and although it was larger than a typical burrowing owl burrow, it would still be considered suitable for the species. Additionally, California ground squirrels on site could create burrows suitable for burrowing owl. The project site contained suitable foraging habitat for burrowing owl, as the nonnative grassland habitat likely supports an adequate numbers of small mammals and insects that make up the majority of the burrowing owl prey base. Six burrowing owl records were identified within five miles of the project site, with the closest of these observations being documented in 1996 approximately 0.1 mile northeast of the project site along the California Aqueduct (Appendix A; CDFW 2017a). Due to the presence of suitable burrowing and foraging habitat and the recorded observations within five miles of the site, this species has a high potential to occur on the project site.

American badger (Taxidea taxus)

The American badger is a CDFW SSC (CDFW 2017b). This territorial mammal species prefers habitat that includes dry open areas consisting of shrubs, grasslands, forest, and herbaceous habitats, with loose soils for digging burrows (NatureServe 2017). This typically solitary species is scattered at low densities throughout the San Joaquin Valley, but has the ability to move long distances to find suitable habitat and mates. The project site contained soils suitable for burrowing and the grassland habitat on the project site likely supports an adequate prey base that could support American badger. The previously identified large burrow on the project site was also suitable American badger. The literature review and data base search identified two records of the species, with the closest record identified in 1999 located approximately 4.7 miles northeast of the project site (CDFW 2017a). The presence of suitable habitat, the documented records of this species within five miles, and the fact that this species has the ability to move long distances, results in a high potential for occurrence for this species.

San Joaquin Kit Fox (Vulpes macrotis mutica)

The San Joaquin kit fox is a federally listed endangered and state listed threatened species (CDFW 2017b). This species prefers annual grasslands or open grassy areas with scattered shrubs and requires loose soils for digging burrows (USFWS 1998). This species is found scattered throughout the San Joaquin Valley, and individuals have been known to occasionally use agricultural land and other areas of marginal habitat adjacent to high-quality habitat for foraging or movement to other areas of their territory.

The project site, consisting of soft soils, provided suitable denning habitat for San Joaquin kit fox and the nonnative grassland habitat is likely to support an adequate prey base of small mammals for foraging. The project site was fenced with four strand barbwire along the south border, but was still easily accessible to kit fox making it suitable as movement habitat for kit foxes that may be moving through the area. One large potential kit fox den was identified on the project site, but no kit fox sign (i.e. scat and/or tracks) was observed at the den entrance. Based on the size and shape of the den it was likely created but a coyote, but would still be considered suitable for kit fox. Additionally, a livestock water trough was identified approximately 0.1 mile north of the northwest corner of the project site and the presence of standing water could attract wildlife, including kit fox, to the project

site. The literature review identified 14 records of the species within five miles of the project site (CDFW 2017a). Besides one record from 2016, all of the records within five miles were over 20 years old, with the closest record being identified in 1981 approximately 0.3 miles north of the project site (Appendix A). The most recent record from 2016 and was located approximately 4.4 miles north of the project site. Due to the presence of suitable denning, foraging, and movement habitat and the recorded observations within five miles of the site, this species has a high potential to occur on the project site.

Special-Status Wildlife Species with a Moderate Potential to Occur

The following species have a moderate potential to occur on the project site because either habitat for the species occurs on site and a known occurrence has been reported in the database, but not within five miles of the site, or a known occurrence within five miles of the site and marginal or limited amounts of habitat occurs on site.

San Joaquin (Nelson's) Antelope Squirrel (Ammospermophilus nelsoni)

The Nelson's Antelope Squirrel is a state listed threatened species (CDFW 2017b). This species is typically found in grassland and shrubland communities, but they are most prevalent in habitats with sparse to moderate shrub cover and are most often found in saltbush scrub communities (USFWS 1998). The project site, consisting of nonnative grassland completely devoid of shrubs, represented suitable, although not ideal, habitat for San Joaquin antelope squirrel. Multiple historical (>20 years old) records of this species occurring within five miles of the project site and multiple other records in the area were identified during the literature review (CDFW 2017a). The closest record was identified in 1988 approximately 2.5 miles northeast of the project site. Despite the historical records within five miles of the project site, the project site only contained marginally suitable habitat due to the lack of shrub cover. Therefore, this species was assigned a moderate potential to occur on the project site.

San Joaquin whipsnake (Masticophis flagellum ruddocki)

The San Joaquin whipsnake is a CDFW SSC (CDFW 2017b). This species occurs in open, dry, treeless areas, including grassland and valley saltbush scrub (Stebbins 2003). The project site, consisting on nonnative grassland, represented suitable habitat for this species, but no records of this species were identified within five miles of the project site. The closest recorded observation of this species was identified in 1999 approximately 9.3 miles southeast of the project site (CDFW 2017a). Although suitable habitat was present on the project site, no records of this species were identified within five miles of the project site. Therefore, this species was assigned a moderate potential to occur on the project site.

Migratory Birds and Raptors

Numerous species of migratory birds and raptors protected under the MBTA and FGC are expected to occur in the vicinity of the project site. No trees or shrubs suitable for nesting were present on the project site, but the tall grasses on site could be suitable for ground nesting species. Additionally, the transmission line that passes through the project site, power poles that line the road along the south border of the project site and the adjacent orchards could be utilized for

nesting by some of the migratory bird species in the area. Nesting birds are anticipated to occur on the project site in conjunction with the nesting bird season (typically February 1 through August 31).

Special-Status Wildlife Species with a Low Potential to Occur

The following species have a low potential to occur on the project site because limited habitat for the species occurs on site and a known occurrence has been reported in the database, but not within five miles of the site, or suitable habitat strongly associated with the species occurs on site, but no records were found in the database search.

Tricolored blackbird (Agelaius tricolor)

The tricolored blackbird is a CDFW SSC and California candidate species for listing as endangered (CDFW 2017b). Breeding habitat for this species includes wet and dry vernal pools, seasonal wetlands, and freshwater marshes with cattails, bulrush, and sedges. Nests are typically found in vegetation of marshes or thickets. This species feeds on insects and seeds and can utilize a variety of foraging habitats, including grasslands and agricultural land. One record of this species was identified in the database search in 1995 approximately 5.0 miles east of the project site. No suitable nesting habitat was identified on the project site but marginally suitable foraging habitat was present. Although one record of this species was identified within five miles of the project site, due to the lack of suitable nesting habitat within and around the project site this species has been assigned a low potential to occur on the project site while foraging and is not expected to nest on the project site.

Swainson's hawk (Buteo swainsoni)

The Swainson's hawk is a state listed threatened species (CDFG 2017a). This species prefers habitat with solitary trees for nesting and large, flat, open grasslands or agricultural land for foraging. It preys primarily on rodents and grasshoppers (NatureServe 2017). No Swainson's hawk records were identified within 10 miles of the project site. The closest observation was recorded approximately 13.0 miles west of the project site in 1961 (CDFW 2017a). Suitable nesting habitat was not present on the project site, but the nonnative grassland habitat on site was suitable foraging habitat. Due to the lack of suitable nesting habitat and absence of records of this species in the vicinity of the project sites this species has been given a low potential to occur on the project site while foraging and is not expected to nest on the project site.

Giant Kangaroo Rat (Dipodomys ingens)

The giant kangaroo rat (*Dipodomys ingens*) is a federally listed and state listed endangered species (CDFW 2017b). This species inhabits low growing grassland and shrub communities on a variety of soil types (USFWS 1998). Giant kangaroo rats rely on their senses and speed to avoid predators and typically prefer areas with bare ground or low growing vegetation. Areas of tall and dense vegetation can be problematic for giant kangaroo rat and reduce their ability to spot and evade predators. Therefore, giant kangaroo rats typically do not occupy areas with tall and dense vegetation. The project site, consisting of nonnative grassland, contained a few small areas of suitable habitat that consisted of low growing grasses and forbs, but much of the project site consisted of tall dense grasses that were either marginally suitable or not suitable for the species.

No giant kangaroo rat precincts were observed on the project site during the biological reconnaissance survey, and much of the project site consisted to tall dense grass that was marginally suitable or not suitable for the species. Two historical records of this species occurring within five miles of the site were identified during the literature review and database search (CDFW 2017a). The closest record was identified in 1979 approximately 3.0 miles north of the project site in similar habitat, while the other record was identified in 1985 approximately 4.6 miles northwest of the project site in the Kettleman Hills, but it is unknown if the species is still present in these locations. The project site contained a few small areas of suitable habitat within the low growing grass and forb areas, but most of the project site was very overgrown with tall grasses and would not be suitable for the species. Due to the lack of quality habitat and the historical nature of the records within five miles of the project site, this species has a low potential to occur on the project site.

Short-nosed kangaroo rat (Dipodomys nitratoides brevinasus)

The short-nosed kangaroo rat is a CDFW SSC (CDFW 2017b). This species generally inhabits flat to gently sloping terrain and is typically associated with desert shrub habitats, and often associates with saltbush scrub (USFWS 1998). The project site, consisting of nonnative grassland completely devoid of shrubs represented only marginally suitable, habitat for short-nosed kangaroo rat. No records of this species were identified within five miles of the project site, but four records from 2001 were identified within ten miles of the project site. The closest record was identified approximately 6.2 miles west of the project site (CDFW 2017a). Due to the lack of records for this species within five miles of the project site and the presence of only marginally suitable habitat due to the lack of shrub cover, this species was assigned a low potential to occur on the project site.

Tipton kangaroo rat (Dipodomys nitratoides nitratoides)

The Tipton kangaroo rat is a federally and state listed endangered species (CDFW 2017b). This species is typically found in alluvial fan and floodplain soils with sparsely vegetated woody shrub cover. Woody shrubs that are commonly associated with Tipton kangaroo rat include *Atriplex* spp., iodine bush, and pale-leaf goldenbush (NatureServe 2017). Although Tipton kangaroo rats can occur in terrace grasslands devoid of woody shrubs, sparse-to-moderate shrub cover is usually associated with populations of high density (USFWS 1998). The project site, consisting of nonnative grassland completely devoid of shrubs represented only marginally suitable habitat for Tipton kangaroo rat. No records of this species were identified within five miles of the project site, but two historical records from 1951 were identified within ten miles of the project site. The closest record was identified approximately 8.9 miles west of the project site (CDFW 2017a). Due to the lack of records of this species within five miles of the project site and the presence of only marginally suitable habitat due to the lack of shrub cover, this species was assigned a low potential to occur on the project site.

Blunt-nosed leopard lizard (Gambelia sila)

The blunt-nosed leopard lizard is a CDFW Fully Protected species and is federally and state listed as endangered (CDFW 2017a). This species is found in open, sparsely vegetated areas and is often associated with valley saltbush scrub and grassland habitats (USFWS 1998). The project site, consisting of nonnative grassland, contained a few small areas of suitable habitat that consisted of

low growing grasses and forbs, but much of the project site consisted of tall dense grasses that were marginally suitable or not suitable for the species. Blunt-nosed leopard lizards rely on their speed to avoid predators and typically prefer areas with bare ground or low growing vegetation. Previously the project site may have represented more suitable habitat for the species but the abundant winter rainfall that the San Joaquin Valley received this year may have caused an increase in the vegetative cover on the project site. Four records of this species were identified in the data base search within five miles of the project site. The closest observation is part of a very large polygon that overlaps with the southwest corner of the project site (Appendix A. The polygon starts at approximately where the California Aqueduct crosses under Interstate 5 and extends south along 25th Avenue until its ends slightly past the Kern and Kings County Line. The polygon includes blunt-nosed leopard lizard observations from 1979, 1993, 2002, 2004, and 2006 and was likely mapped as a polygon to account for some level of inaccuracy with the records (CDFW 2017a). It is unknown if blunt-nosed leopard lizards associated with the polygon were observed on the actual project site. The project site contained a few small areas of suitable habitat within the low growing grass and forb areas, but most of the project site was very overgrown with tall grasses and would not be suitable for the species. Although this species has been identified in close proximity to the project site, due to the lack of quality low growing grass and forb habitat, this species has a low potential to occur on the project site.

Special-Status Wildlife Species Presumed Absent

The following species are presumed absent from the project due to the lack of suitable habitat on the project site.

Western snowy plover (Charadrius alexandrinus nivosus)

The western snowy plover is a CDFW SSC and federally listed threatened species (CDFW 2017a). This shore bird typically occurs in habitat that includes beaches, dry mud or salt flats, and sandy shores of rivers, lakes, and ponds (NatureServe 2017). No suitable habitat for this species was identified on the project site. Therefore, this species is presumed absent from the project site.

Tulare grasshopper mouse (Onychomys torridus tularensis)

Tulare grasshopper mouse is a CDFW SSC (CDFW 2017b). This species is typically found in habitat that contains scattered shrubs with annual grass and forbs and is most often found in saltbush scrub communities (USFWS 1998). The project site, completely void of shrubs, would not be considered suitable habitat for this species. Additionally, the database search only identified one record of this species in 1931 approximately 14.8 miles northwest of the project site. No suitable habitat for this species was identified on the project site. Therefore, this species is presumed absent from the project site.

3.1.3 USFWS Designated Critical Habitat

The project site was not located within any USFWS designated critical habitat.

3.1.4 Jurisdictional Drainages

During the literature review, a desktop review of the U.S. Department of Agriculture Web Soil Survey was conducted to determine if there were any blue line streams or drainages that may potentially fall under the jurisdiction of either federal or state agencies. No blue line streams or hydric soils were identified on the project site (NRCS 2017).

3.2 Biological Reconnaissance Survey

The biological reconnaissance survey was conducted on August 31, 2017, by ECORP Senior Biologist Phillip Wasz. Mr. Wasz is listed as a Field Investigator for giant kangaroo rat (*Dipodomys ingens*) and Nelson's antelope squirrel on a Memorandum of Understanding with CDFW and has over seven years of experience conducting San Joaquin kit fox, burrowing owl, and rare plant habitat assessments and surveys in the San Joaquin Valley. Summarized below are the results of the biological reconnaissance survey, including site characteristics, plant communities, wildlife, special-status species, and special-status habitats (including any potential wildlife corridors). Weather conditions during the survey are summarized in Table 2.

Table 2. Weather Conditions during the Survey

Date	Time		Temperature (°F)		Cloud Cover (%)		Wind Speed (mph)	
	start	end	Min	Max	min	max	min	max
8/31/17	1030	1230	89	95	0	0	3	5

3.2.1 Property Characteristics

The property consisted of nonnative grassland that was currently being grazed by cattle. The nonnative grassland on the project site varied, as there were some areas of the project site that consisted of sparse low growing grasses and forbs, while the majority of the project site consisted of tall dense nonnative grasses. The nonnative grassland on the project site was dominated by foxtail brome (*Bromus madritensis*) and wild oat (*Avena fatua*). Cattle trails and manure were prevalent throughout the project site, but otherwise the project site was largely undisturbed. A review of historical aerial images confirmed that the project site has largely remained unchanged dating back at least 20 years. The substrate on the project site was generally sandy loam and the soil on site consisted of Cantua coarse sandy loam and Kimberlina fine sandy loam (NRCS 2017). Surrounding land uses consisted of agriculture, cattle grazing, agriculture processing plants, open land, and solar energy development. Representative site photographs are presented in Appendix B.

3.3 Plants

The plant species on the project site were consistent with what is typically found in nonnative grassland. The project site contained plant species adapted to grazing disturbance and the extreme temperatures and dry environment of the San Joaquin Valley. Plants observed on the project site during the survey consisted of mostly nonnative grasses and forbs, including foxtail brome, wildoat, red-stemmed filaree (*Erodium cicutarium*), and Russian thistle (*Salsola tragus*). Appendix C contains a list of all plant species observed during the survey.

3.4 Wildlife

The project site provided habitat for a number of wildlife species that are commonly found in the San Joaquin Valley. Wildlife species occurring within or using the project site at the time of the survey, included common raven (*Corvus corax*), mourning dove (*Zenaida macroura*), coyote (*Canis latrans*), and side-blotched lizard (*Uta stansburiana*). Appendix D contains a list of all wildlife species identified during the survey.

3.5 Jurisdictional Drainages

No hydric soils, jurisdictional drainages, stream courses, wetlands, and/or other water features were identified on the project site during the biological reconnaissance survey. The California Aqueduct is located approximately 900 ft east of the project site; however, no impacts to the California Aqueduct are anticipated.

3.6 Raptors and Migratory Birds

The project site did not contain any shrubs or trees suitable for nesting, but the tall grass habitat on site would be suitable for ground nesting migratory birds protected under MBTA. Additionally, the transmission line that passes through the project site, power poles that line the road along the south border of the project site, and the adjacent orchards could also be utilized for nesting by some of the migratory bird species in the area. Nesting birds are anticipated to occur on the project site in conjunction with the nesting bird season (typically February 1 through August 31). Raptors typically breed between February and August, while non-raptor birds protected under the MBTA generally nest between March and August.

3.7 Wildlife Movement Corridors and Linkages

During the survey the project site was assessed for its ability to facilitate wildlife movement and for the presence of wildlife corridors. A wildlife corridor is defined as a linear landscape element that serves as a linkage between historically connected habitats/natural areas, and is meant to facilitate movement between these natural areas (Beier and Loe 1992). The project site could provide wildlife movement opportunities due to the fact that it consists of open and unimpeded land. However, it would not be considered a wildlife movement corridor that would need to be preserved in order to allow wildlife to move between important natural habitat areas. The site was exposed and did not contain any major drainages or washes that would be considered movement corridors for wildlife.

4.0 DISCUSSION

The project site consisted of non-native grassland that is currently used for cattle grazing. No special-status plant species were observed during the biological reconnaissance survey of the site; however, suitable habitat for special-status plant species was present on the project site. Three special-status plant species were determined to have a high to moderate potential to occur on the project site based on the presence of suitable habitat and documented observations of the species in the vicinity of the project site, including the federally listed San Joaquin woollythreads. Therefore, avoidance, minimization, and/or mitigation measures, including focused surveys, will be required to

ensure that project related impacts to these special-status plant species are less than significant. The need for additional surveys and agency consultation is discussed in further detail in Section 5.0.

The project site also provided suitable habitat for 11 special-status wildlife species that have varying levels of potential to occur on the project site based on the presence of suitable habitat and documented observations of the species in the vicinity of the project site. Mitigation measures, including focused surveys, preconstruction surveys, and/or construction monitoring, will be required to ensure that project related impacts to these seven wildlife species are less than significant.

Burrowing owls were determined to have a high potential to occur on the project site due to the presence of suitable burrowing and foraging habitat and the recorded observation within 5 miles of the project site. One suitable burrowing owl burrow (no owl sign observed) was identified on the project site. The burrow was likely an old coyote den and although it was larger than a typical burrowing owl burrow, it would still be considered suitable for burrowing owl. Although burrowing owls may not have been present when the survey was conducted, the species is mobile and could take up residence at any time. Burrowing owls are a CDFW SSC but are also protected by the MBTA and California FGC. Preconstruction burrowing owl surveys will be required to determine if burrowing owls are present on the project site and to ensure that impacts to burrowing owls are less than significant. The need for additional surveys and agency consultation is discussed in further detail in Section 5.0.

San Joaquin kit fox and American Badger were determined to have a high potential to occur on the project site while foraging or moving through the area and the soils on site were also suitable for denning. Additionally, there were recorded observations of each species within five miles of the site. Therefore, these species were assigned a high potential to occur on the project site. San Joaquin kit fox is a federally listed endangered and state listed threatened species and American badger is a CDFW SSC. Preconstruction surveys will be required to determine if San Joaquin kit foxes or American badgers are present on the project site and to ensure that impacts to these species are less than significant. The need for additional surveys and agency consultation is discussed in further detail in Section 5.0.

San Joaquin antelope squirrel and giant kangaroo rat were determined to have a moderate and low potential to occur, respectively due to the presence of marginally suitable habitat and recorded observations within five miles of the project site. Small mammal burrows were identified on the project site, but no San Joaquin antelope squirrels or giant kangaroo rats were observed at the time of the survey. To determine if these species are present on the project site a preconstruction burrow survey will be necessary. The need for additional surveys and agency consultation is discussed in further detail in Section 5.0.

Blunt-nosed leopard lizard was determined to have a low potential to occur on the project site due to the presence of marginally suitable habitat and records of the species in close proximity to the project site. The closest observation in the CNDDDB is part of a very large polygon that overlaps with a portion of the project site. The polygon starts approximately where the California Aqueduct crosses under the Interstate 5 and extends south along 25th Avenue until its ends slightly past the Kern and Kings County Line. The polygon includes blunt-nosed leopard lizard observations from

1979, 1993, 2002, 2004, and 2006 and was likely mapped as a polygon to account for some level of inaccuracy with the records (CDFW 2017a). It is unknown if blunt-nosed leopard lizards associated with the polygon were observed on the actual project site. Although the polygon associated with these recorded observations overlaps with the project site, the project site itself contained only a few areas of suitable habitat that consisted of low growing grasses and forbs, much of the project site consisted of tall dense grasses that were marginally suitable or not suitable for the species. The blunt-nosed leopard lizard is state listed as endangered and also a CDFW Fully Protected species. The classification of Fully Protected was created in 1960's by the State of California to identify and provide additional protection to animals that were rare or faced possible extinction. Fully Protected species may not be taken or possessed at any time and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research. Therefore, the project will need to ensure that there is no "take" of this species. Take, under CESA, is defined as "to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill". The need for additional surveys, agency consultation, and/or construction monitoring is discussed in further detail in Section 5.0.

The project site contained suitable nesting habitat for bird species that are protected under the MBTA. Development of the project site will be required to comply with the MBTA and avoid impacts to nesting birds. In order to ensure that impacts to the species covered under the MBTA are less than significant the project should implement the mitigation measures discussed in Section 5.0.

Tricolored blackbird, Swainson's hawk, short-nosed kangaroo rat, and Tipton kangaroo rat were determined to have a low potential to occur on the project site due to the presence of marginally suitable habitat on the project site and the lack of species records within five miles on the project site. With a low potential for occurrence it is unlikely that these species are present on the project site. However, in order to ensure that impacts to these species are less than significant, the project should implement mitigation measures for these species as discussed in Section 5.0.

The special-status plant and wildlife species with potential to occur on the project site include several federally and/or state listed species. Depending on the results on the preconstruction surveys discussed in Section 5.0, the project may need to consult with the wildlife agencies (CDFW and USFWS) and acquire a mechanism for "take" of federally and/or state listed plant or wildlife species. The need for additional surveys and agency consultation is discussed in further detail in Section 5.0.

The project site does not support riparian habitat, sensitive natural communities, wetlands, or trees that would need to be preserved and no project related impacts are anticipated for these resources.

5.0 MITIGATION, MINIMIZATION, AND AVOIDANCE MEASURES

The following surveys should be conducted prior to project implementation:

- **Rare Plant Survey:** Focused surveys for special-status plants, including the federally listed endangered San Joaquin woollythreads, should be conducted on the project site. The survey shall be conducted according to the CNPS Botanical Survey Guidelines (CNPS 2001). The survey shall be conducted during the appropriate time of year required for identification of the species

(February-May for most San Joaquin valley species). If the surveys are conducted outside of the appropriate blooming periods for the target species the results may be rejected by CDFW. If special-status plants are found on the project site then CDFW and/or USFWS shall be consulted to discuss appropriate mitigation measures. Mitigation measures could include, but are not limited to, seed collection and/or transplanting.

- **Preconstruction Surveys for Burrowing Owl:** Preconstruction surveys for burrowing owl should be conducted. The surveys should follow the methods described in the CDFW's *Staff Report on Burrowing Owl Mitigation* (CDFG 2012). Two surveys should be conducted, with the first survey being scheduled between 30 and 14 days before initial ground disturbance (grading, grubbing, and construction), and second survey being conducted no more than 24-hours prior to initial ground disturbance. If burrowing owls and/or suitable burrowing owl burrows are identified on the project site during the survey, the project should consult with CDFW and follow the methods listed in the CDFW's *Staff Report on Burrowing Owl Mitigation* (CDFG 2012) for avoidance and/or passive relocation.
- **Preconstruction Survey for San Joaquin Kit Fox and American Badger:** A preconstruction survey for San Joaquin kit fox and American badger should be conducted between 30 and 14 days prior to the beginning of ground disturbance and/or construction activities or any project activity likely to impact San Joaquin kit fox. The survey should be conducted according to the guidelines listed in the USFWS *Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance* (USFWS 2011). If San Joaquin kit fox or American badger and/or suitable San Joaquin kit fox or American Badger dens are identified on the project site during the preconstruction survey, the project should consult with CDFW and USFWS, before proceeding and should follow the USFWS guidelines for avoidance, exclusion, and/or passive relocation.
- **Preconstruction Burrow Survey for Special-Status Small Mammal Species and Blunt-Nosed Leopard Lizard:** Special-status small mammal and blunt-nosed leopard lizard are dependent on burrows to survive. Therefore, a preconstruction burrow survey for San Joaquin antelope squirrel, giant kangaroo rat, Tipton kangaroo rat, and blunt-nosed leopard lizard should be conducted to determine if there are suitable burrows for these species on the project site. The survey should be conducted by a biologist experienced in identifying small mammal burrows. The survey should consist of walking the entire project site and identifying all burrows suitable for special-status small mammals and blunt-nosed leopard lizard. All small mammal burrows shall be marked with a GPS unit and avoided by construction. A 50-ft disturbance limit buffer will be placed around all identified small mammal burrows. The burrow and associated buffer must be avoided by construction, if avoidance of suitable small mammal burrows is not possible, the project shall conduct focused surveys for special-status small mammal species and blunt-nosed leopard lizard according to the accepted USFWS and/or CDFW protocols. If special-status small mammal species or blunt-nosed leopard lizard are identified on the project site during the focused surveys, the project shall initiate consultation with USFWS and CDFW to obtain the necessary incidental take permit authorizations or provided evidence that such a permit is not required before proceeding.

- **Preconstruction Nesting Bird and Raptor Survey:** If construction or other project activities are scheduled to occur during the bird breeding season (February through August for raptors and March through August for most other birds), a pre-construction nesting bird survey shall be conducted by a qualified biologist. The survey should be completed no more than 14 days prior to initial ground disturbance. The nesting bird survey should include the project site and adjacent areas where project activities have the potential to cause nest failure. If any active nests are identified, a qualified biologist should establish an appropriate disturbance limit buffer around the nest using flagging or staking. Construction activities will need to be avoided within any disturbance limit buffer zones until the nest is deemed no longer active by the biologist.
- **Biological Monitoring:** A qualified biologist (biological monitor) with experience monitoring for and identifying sensitive biological resources known to occur in the area will be present during all initial ground-disturbing activities related to the project. Biological monitoring duties will include, but are not limited to, conducting worker education training, verifying compliance with project permits, and ensuring project activities stay within designated work areas. The biological monitor will have the right to halt all activities in the area affected if a special-status species is identified in a work area and is in danger of injury or mortality. If work is halted in the area affected as determined by the biological monitor, work will proceed only after the hazards to the individual is removed and the animal is no longer at risk, or the individual has been moved from harm's way. The biological monitor will take representative photographs of the daily activities and will also maintain a daily log that documents general project activities and compliance with the project's permit conditions. Non-compliances will also be documented in the daily log, including any measures that were implemented to rectify the issue.

The following avoidance and minimization measures should be implemented to further reduce impacts to special-status species present on the property or that have potential to occur on the property:


- All activities should be confined to pre-determined work areas that avoid sensitive resources.
- All project-related vehicles should observe a daytime speed limit of 20 miles per hour (mph) and a nighttime speed limit of 10 mph throughout the project site, except on county roads and State and Federal highways.
- To prevent inadvertent entrapment of San Joaquin kit foxes or other animals during the construction phase of a project, all excavated, steep-walled holes or trenches more than 2 ft deep should be covered at the close of each working day by plywood or similar materials. If the trenches cannot be closed, one or more escape ramps constructed of earthen fill or wooden planks shall be installed. Before such holes or trenches are filled, they should be thoroughly inspected for trapped animals. If at any time a trapped or injured kit fox is discovered, the USFWS and CDFW shall be contacted as noted below.
- Kit foxes are attracted to den-like structures, such as pipes and may enter stored pipes, and become trapped or injured. To prevent kit fox use of these structures, all construction pipes, culverts, or similar structures with a diameter of 4-inches or greater should be capped while stored on site. If any kit fox is discovered inside a pipe, that section of pipe should not be

moved until the USFWS has been consulted. If necessary, and under the direct supervision of the biologist, the pipe may be moved only once to remove it from the path of construction activity, until the fox has escaped.

- All food-related trash items such as wrappers, cans, bottles, and food scraps should be disposed of in securely closed containers and removed at least once a week from a construction or project site.
- No firearms should be allowed on the project site.
- No pets, including dogs or cats, should be permitted on the project site to prevent harassment, mortality of kit foxes, or destruction of dens.
- Use of rodenticides and herbicides within the project site should be restricted. This is necessary to prevent primary or secondary poisoning of kit foxes and the depletion of prey populations on which they depend. All uses of such compounds should observe label and other restrictions mandated by the U.S. Environmental Protection Agency, California Department of Food and Agriculture, and other State and Federal legislation, as well as additional project-related restrictions deemed necessary by the Service. If rodent control must be conducted, zinc phosphide should be used because of a proven lower risk to kit fox.
- A representative should be appointed by the project proponent who will be the contact source for any employee or contractor who might inadvertently kill or injure a kit fox or who finds a dead, injured or entrapped kit fox. The representative will be identified during the employee education program and their name and telephone number shall be provided to the USFWS.
- An employee education program should be provided to all construction personnel working on the project. The program should consist of a brief presentation by persons with knowledge of the biology of the special-status species that could occur on the project site and legislative protection to explain endangered species concerns to construction personnel. The program should include the following: A description of the species and their habitat needs; a report of the occurrence of the special-status species in the vicinity of the project site; an explanation of the status of the special-status species and their protection under the Federal and State Endangered Species Acts; and a list of measures being taken to reduce impacts to the species during project construction and implementation. A fact sheet conveying this information should be prepared for distribution to the previously referenced people and anyone else who may enter the project site.
- Any project personnel who are responsible for inadvertently killing or injuring a San Joaquin kit fox should immediately report the incident to their representative. This representative should contact the CDFG immediately in the case of a dead, injured or entrapped kit fox.
- The Sacramento Fish and Wildlife Office and CDFG should be notified in writing within three working days of the accidental death or injury to a San Joaquin kit fox during project related activities. Notification must include the date, time, and location of the incident or of the finding of a dead or injured animal and any other pertinent information.

6.0 CERTIFICATION

I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this biological evaluation, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief. Field work conducted for this assessment was performed by me or under my direct supervision. I certify that I have not signed a non-disclosure or consultant confidentiality agreement with the project applicant or the applicant's representative and that I have no financial interest in the project.

SIGNED: 

Phillip Wasz
Senior Wildlife Biologist

DATE: September 22, 2017

7.0 LITERATURE CITED

- American Ornithologists' Union (AOU). 1998, 2012. Checklist of North American Birds, 7th edition with 53rd Supplement.
- Beier, P. and S. Loe. 1992. A checklist for evaluating impacts to wildlife movement corridors. *Wildlife Society Bulletin* 20 (434-440).
- Calflora: Information on California plants for education, research and conservation. [web application]. 2017. Berkeley, California: The Calflora Database [a non-profit organization]. Available: <http://www.calflora.org/>. Accessed: Mar 21, 2017.
- [CDFG] 1984. California Endangered Species Act. Fish and Game Code Section 2050-2085.
- [CDFG] 2011. State and Federally Listed Endangered and Threatened Animals of California. Sacramento (CA): State of California, the Resources Agency, Department of Fish and Game.
- [CDFG] California Department of Fish and Wildlife. 2012. Staff Report on Burrowing Owl Mitigation. State of California, Natural Resources Agency, Department of Fish and Wildlife.
- [CDFG] California Department of Fish and Game. 2004. Approved Survey Methodology for the Blunt-nosed leopard lizard. May 2004
- [CDFW] California Department of Fish and Wildlife. 2017a. RareFind California Department of Fish and Game Natural Diversity Database (CNDDDB) for Catclaw Flat, Cathedral City, Desert Hot Springs, Morongo Valley, Palm Springs, San Jacinto Peak, Seven Palms Valley, Whitewater, and Yucca Valley South USGS 7.5-Minute Quadrangles California. Sacramento, CA, California Department of Fish and Wildlife, Biogeographic Data Branch.
- [CDFW] 2017b. Special Animals List. Sacramento (CA): State of California, the Resources Agency, Department of Fish and Game. Available: www.dfg.ca.gov/bdb/pdfs/SPANimals.pdf. Accessed: March 2017
- [CNPS] California Native Plant Society. 2001. CNPS Botanical Survey Guidelines. California Native Plant Society, Sacramento, CA.
- [CNPS] California Native Plant Society, Rare Plant Program. 2017. Inventory of Rare and Endangered Plants (online edition, v8-02). California Native Plant Society, Sacramento, CA. Website <http://www.rareplants.cnps.org> [accessed 29 March 2017].
- Hickman, J.C., editor. 1993. The Jepson Manual. Berkeley: University of California Press. 1400 pp.
- [NatureServe] 2017. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1 NatureServe, Arlington, Virginia. Available at <http://www.natureserve.org/explorer>. Accessed: March 2017.
- [NRCS] Natural Resources Conservation Service. 2017. "Web Soil Survey" from <http://websoilsurvey.nrcs.usda.gov>. Accessed: March 2017.
- [Sawyer et al.] Sawyer, J. O., T. Keeler-Wolf, and J. M. Evens. 2009. A Manual of California Vegetation, 2nd ed. California Native Plant Society, Sacramento, CA. Sibley, D. A. (2003). The Sibley Field Guide to Birds of North America New York.

Skinner, M.W., and B.M. Pavlik, eds. 1994. California Native Plant Society's inventory of rare and endangered vascular plants of California. Fifth edition. Spec. Publ. No. 1, California Native Plant Society, Sacramento, CA, 338 pp.

Stebbins, R. C. 2003. A Field Guide to Western Reptiles and Amphibians. New York, NY, Houghton Mifflin.

[USFWS] United States Fish and Wildlife Service 1918. Migratory Bird Treaty Act. Section 16 of the U.S. Code (703-712), as amended 1989.

[USFWS] 1940. Bald and Golden Eagle Protection Act. Section 16 of the U.S Code (668-668d), as amended 1962.

[USFWS] 1973. Endangered Species Act of 1973. Section 16 of the U.S. Code (1531-1544), as amended.

[USFWS] 1998. Endangered Species Recovery Program, Recovery Plan for Upland Species of the San Joaquin Valley, California. California State University, Stanislaus.

[USFWS] 2011. Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to Ground Disturbance. Prepared by the Sacramento Fish and Wildlife Office.

Wilson, D. E. and D. M. Reeder, Eds. (2005). Mammal Species of the World, The Johns Hopkins University Press, Baltimore, Maryland.

LIST OF APPENDICES

Appendix A – Project Site Map (With CNDDDB Records)

Appendix B – Representative Project Site Photographs

Appendix C – Plant Compendium

Appendix D – Wildlife Compendium

APPENDIX A

Project Site Map (With CNDDb Records)

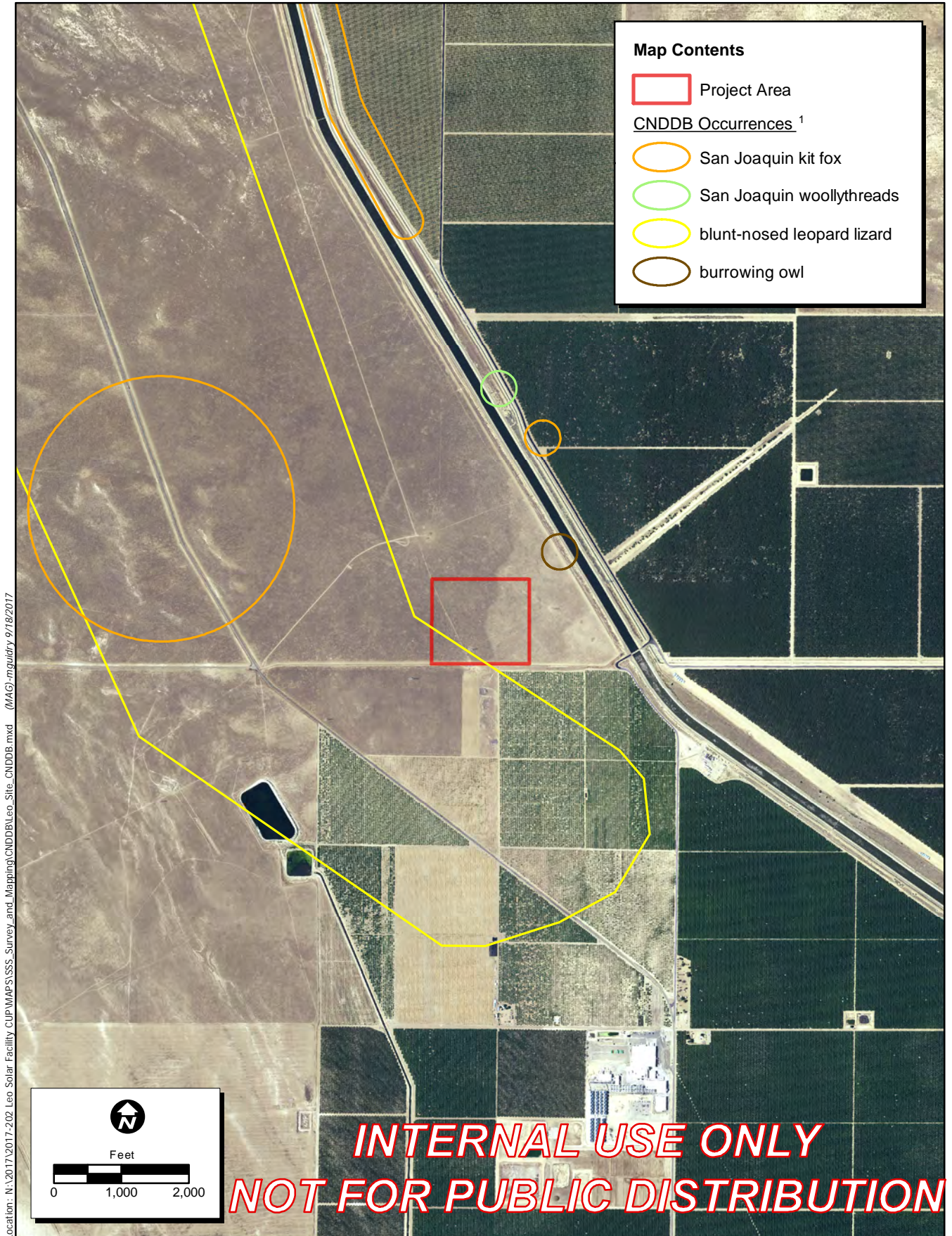


Figure 3. Project Site Map

2017-2022 Leo Solar Facility CUP

Appendix B – Representative Project Site Photographs



Photo 1. Southwest corner looking east along the south border of the project site.



Photo 2. Southwest corner looking northeast into the project site.



Photo 3. Middle of the project site looking north.



Photo 4. Northwest corner looking south across the project site.



Photo 5. Northwest corner looking southeast across the project site.



Photo 6. Northeast corner looking south across project site.



Photo 7. Northeast corner looking southwest across project site.



Photo 8. Large potential San Joaquin kit fox den, likely old coyote den (no kit fox sign).

SCIENTIFIC NAME	COMMON NAME
<i>Amsinkia menziesii</i>	fiddleneck
<i>Avena fatua</i>	wild oat
<i>Bromus diandrus</i>	ripgut brome
<i>Bromus madritensis</i> ssp. <i>rubens</i>	red brome
<i>Croton setigerus</i>	dove weed
<i>Erodium cicutarium</i>	red-stemmed filaree
<i>Salsola tragus</i>	Russian thistle
<i>Schismus arabicus</i>	Mediterranean grass
<i>Trichostema lanceolatum</i>	vinegarweed

SCIENTIFIC NAME	COMMON NAME
<i>Buteo jamaicensis</i>	red-tailed hawk
<i>Canis latrans</i>	coyote (scat)
<i>Cathartes aura</i>	turkey vulture
<i>Charadrius vociferus</i>	Killdeer
<i>Corvus corax</i>	common raven
<i>Lepus californicus</i>	black-tailed jackrabbit
<i>Uta stansburiana</i>	common side-blotched lizard
<i>Zenaida macroura</i>	mourning dove