

# BIOLOGICAL ANALYSIS REPORT

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## D.R. HORTON, AMERICA'S BUILDER IRON RIDGE PROJECT



SEPTEMBER 2021

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## IRON RIDGE PROJECT

### **Prepared for:**

D.R. Horton, America's Builder  
419 W Murray Avenue  
Visalia, CA 93291

Contact Person: Corine Demetreos, Forward Planner  
Phone: 559.631.6208

### **Consultant:**



601 Pollasky Avenue Suite 301  
Clovis, CA 93612  
Contact: Ernie Escobedo  
Phone: 559.449.2400

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## Acronyms and Abbreviations

AMSL	Above Mean Sea Level
BAR	Biological Analysis Report
BIOS	Biogeography Information and Observation System
BSA	Biological Study Area
CAGS	California Ground Squirrel
CCR	California Code of Regulations
COB	City of Bakersfield
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFGC	California Fish and Game Code
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
CWA	Clean Water Act
CWHR	California Wildlife Habitat Relationships
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
IPaC	Information for Planning and Construction
MBGP	Metropolitan Bakersfield General Plan
MBHCP	Metropolitan Bakersfield Habitat Conservation Plan
MBTA	Migratory Bird Treaty Act
NHD	National Hydrography Dataset
NRCS	Natural Resources Conservation Service
NWI	National Wetlands Inventory
RWQCB	Regional Water Quality Control Board
SJKF	San Joaquin Kit Fox
SWHA	Swainson's Hawk
USACE	U.S. Army Corps of Engineers

**EXECUTIVE SUMMARY**

Quad Knopf, Inc. (QK) has prepared this Biological Analysis Report (BAR) to evaluate the potential for sensitive biological resources to be impacted by the construction of the Iron Ridge I and Iron Ridge II subdivision projects (Project) within the City of Visalia, Tulare County, California.

The proposed project is located on the Central Valley floor in East Tulare County, California, two miles northeast of the Highway 99 and State Route 198 intersection. D.R. Horton, America's Builder (the Applicant) proposes to develop approximately 50 acres to create residential lots and the appurtenant infrastructure consistent with the General Plan designation of Residential Low Density. Along the adjacent Shirk Street, a ten-foot-wide landscape strip with masonry wall and required building setbacks will serve as the buffer between residential development and Shirk Street as required by the of Visalia City Municipal Code. A 3.82-acre linear park will extend across the north edge of the Project site which will include an approximately 2,000-foot public trail with exercise stations.

A database review and reconnaissance site visit were completed by QK Environmental Scientists to characterize existing conditions and determine the potential for special-status species and other sensitive biological resources to occur on-site that may be impacted by the Project.

The sensitive biological resource database and literature search identified four (4) natural communities, 21 plant species, and 34 animal species with potential to occur on the Project. Of those, all but three animal species were eliminated from consideration due to lack of habitat or otherwise unsuitable conditions. No special plant species or natural communities are expected to occur on or near the Project area.

Direct and indirect impacts of the Project to these and other potentially occurring species could include injury or mortality of individuals and loss of habitat. Avoidance minimization measures are recommended which, when implemented, would reduce Project impacts to biological resources to less than significant levels.

## **SECTION 1 - INTRODUCTION**

Quad Knopf, Inc. (QK) has prepared this Biological Analysis Report (BAR) to evaluate the potential for sensitive biological resources to be impacted by the construction of the Iron Ridge I and Iron Ridge II subdivision projects (Project) within the City of Visalia, Tulare County, California.

### **1.1 - Project Location**

The Iron Ridge Project is a 50.31-acre residential development project proposed to be constructed within the City of Visalia. The Project is located two miles northeast of the Highway 99 and State Route 198 intersection, west of North Shirk Road, east of Road 88, and 0.25 miles south of W Goshen Avenue (Figures 1-1 and 1-2). The Project is within Section 28, Township 18S, Range 24E, Mount Diablo Base and Meridian.

### **1.2 - Project Description**

D.R. Horton, America's Builder (the Applicant) proposes to develop approximately 50 acres to create residential lots and the appurtenant infrastructure consistent with the City of Visalia General Plan designation of Residential Low Density. The approximate density is 4.73 dwelling units per gross acre. The Project proposed to remove the Very Low Density Residential (and subsequent R-1-20 zone) and replace it with Low Density Residential (R-1-5 zone) in order to create a homogenous neighborhood. The Project will be built in two Phases (Phase I and Phase II).

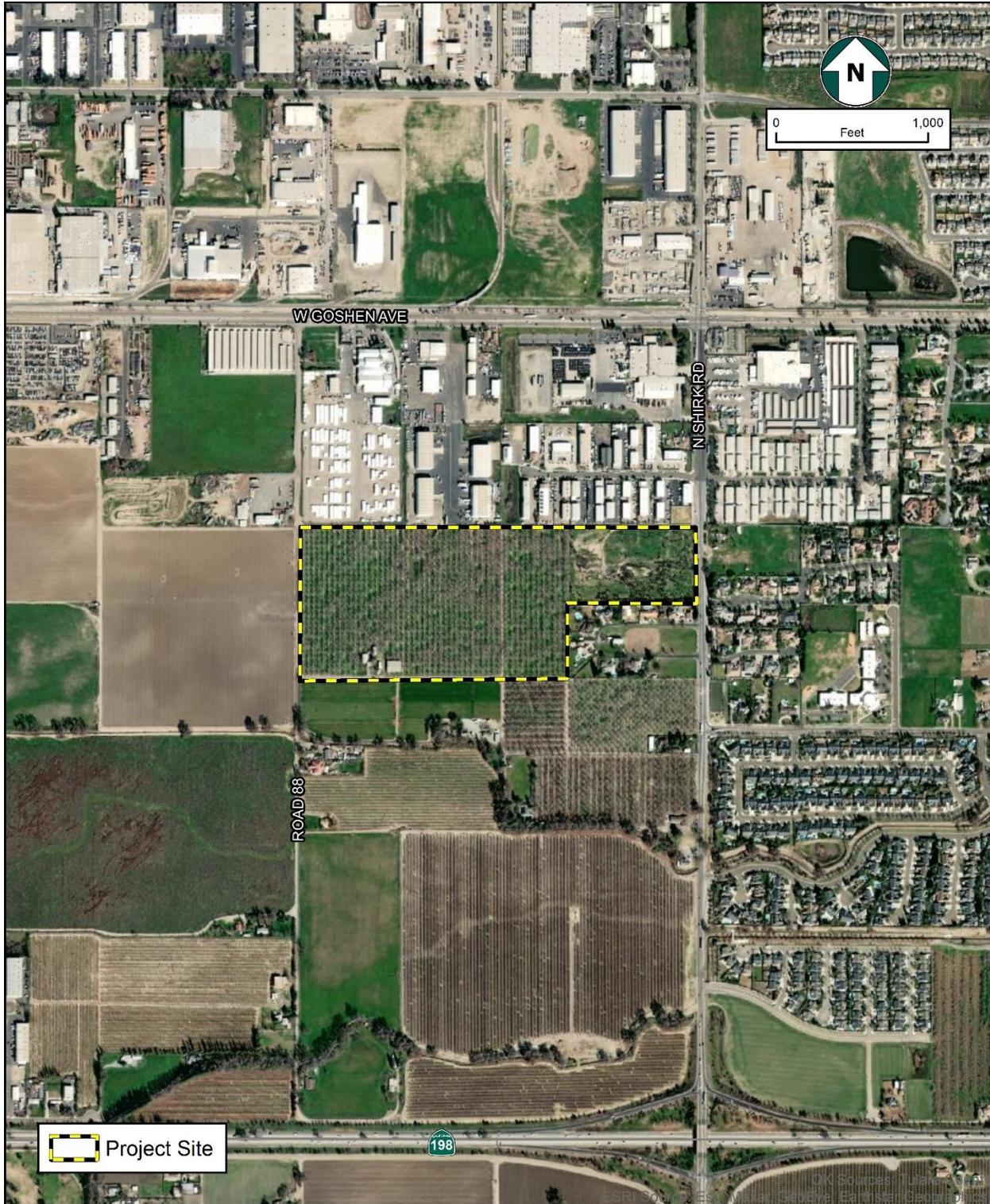
Phase I includes the 10-acre parcel in the northeast of the Project site and will include the construction of 41 residential lots, and Phase II includes the 40-acre parcel to the west and will include the construction of 197 residential lots. Along the adjacent Shirk Street and Road 88, ten-foot-wide landscape strips with masonry wall and required building setbacks will serve as buffers between residential development and Shirk Street and Road 88. A 3.82-acre linear park will extend across the north edge of the Project site which will include an approximately 2,000-foot public trail with exercise stations. The linear park and adjacent light industrial properties to the north will be separated by a 6-foot block wall as required by the City's Municipal Code.

### **1.3 - Purpose, Goals, and Objectives**

The purpose of this BAR is to identify where potential special-status biological resources may occur within the Project site, determine how those resources may be impacted by the proposed Project, and recommend avoidance, minimization, and mitigation measures to reduce the potential for impact to those resources to a less than significant level. This BAR has been prepared to support an analysis of biological conditions as required by the California Environmental Quality Act (CEQA). Information contained in this BAR would, at least partially, support an analysis of project effects required by the National Environmental Policy Act (NEPA) and to support regulatory permit applications, if needed.







**Figure 1-2**  
**Project Location Map**  
**Iron Ridge, Visalia, California**

## **SECTION 2 - METHODS**

### **2.1 - Definition of Biological Study Area**

The Biological Study Area (BSA) consists of the proposed Project and a surrounding 250-foot buffer (Figure 2-1).

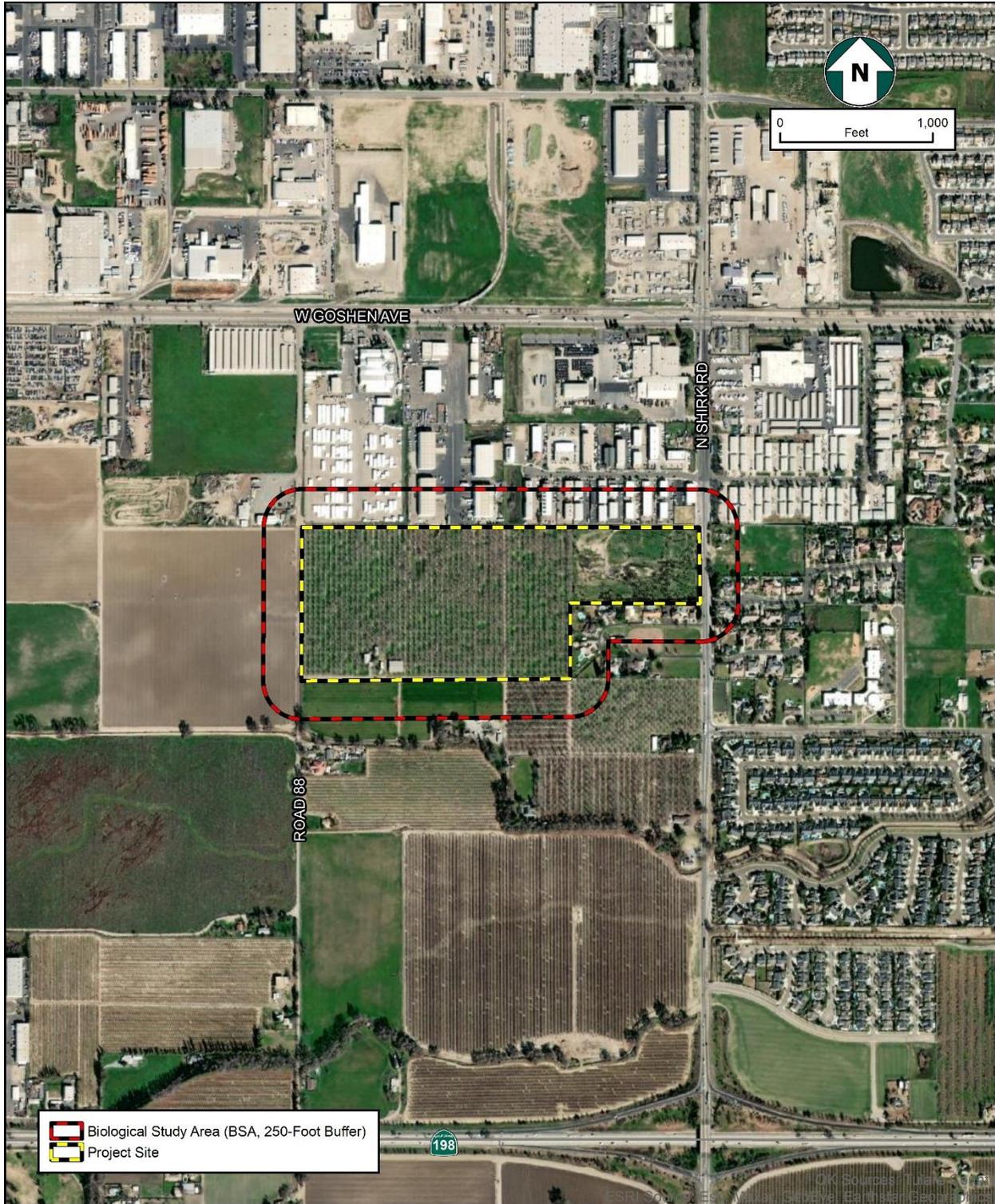
### **2.2 - Definition of Special-Status Species**

Special-status species evaluated in this BAR include:

- Species listed as threatened or endangered under the Federal Endangered Species Act (FESA); species that are under review may be included if there is a reasonable expectation of listing within the life of the project,
- Species listed as candidate, threatened, or endangered under the California Endangered Species Act (CESA),
- Species designated as Fully Protected, Species of Special Concern, or Watch List by the California Department of Fish and Wildlife (CDFW),
- Other species included on the CDFW's Special Animals List,
- Plant species with a California Rare Plant Rank (CRPR), and
- Species designated as locally important by the Local Agency and/or otherwise protected through ordinance or local policy.

The potential for each special-status species to occur in the study area was evaluated according to the following criteria:

- **No Potential to Occur.** Habitat on and adjacent to the site is clearly unsuitable to meet the needs of the species (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime), and species would have been identified on-site if present (e.g., oak trees).
- **Yes, Potential to Occur.** Conditions on the site may, in some way, support a portion of the species ecology (foraging, reproduction, movement/migration). Negative survey results independent of other information does not exclude the potential for a species to occur.
- **Present.** Species was observed on the site or has been recorded (e.g., California Natural Diversity Database, California Native Plant Society) on the site recently (within the last 5 years).



 **Figure 2-1**  
**Biological Study Area**  
**Iron Ridge, Visalia, California**

### 2.3 - Literature Review and Database Analysis

The following sources were reviewed for information on sensitive biological resources in the Project vicinity:

- CDFW's California Natural Diversity Database (CDFW 2021a)
- CDFW's Biogeographic Information and Observation System (CDFW 2021b)
- CDFW's Special Animals List (CDFW 2021c)
- CDFW's California Wildlife Habitat Relationships (CWHR) System (Mayer and Laudenslayer 1988)
- California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants of California (CNPS 2021)
- USFWS Information for Planning and Consultation system (USFWS 2021a)
- USFWS Critical Habitat Mapper (USFWS 2021b)
- USFWS National Wetlands Inventory (USFWS 2021c)
- USGS National Hydrography Dataset (USGS 2021a)
- Federal Emergency Management Agency (FEMA) flood zone maps (FEMA 2021)
- U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS) Web Soil Survey (NRCS 2021a)
- NRCS List of Hydric Soils (NRCS 2021b)
- Current and historical aerial imagery (Google LLC 2020, Netronline 2021)
- Topographic maps (USGS 2021b)

For each of these data sources, the search was focused on the *Visalia* and *Goshen* USGS 7.5-minute quadrangles in which the Project is located, plus the surrounding ten (10) quadrangles: *Monson*, *Ivanhoe*, *Exeter*, *Cairns Corner*, *Tulare*, *Paige*, *Traver*, *Burriss Park*, *Remnoy*, and *Waukena*.

The California Natural Diversity Database (CNDDDB) provides element-specific spatial information on individually documented occurrences of special-status species and sensitive natural communities. Some of the information available for review in the CNDDDB is still undergoing review by the CDFW; these records are identified as unprocessed data. The CNPS database provides similar information as the CNDDDB, but at a much lower spatial resolution. Much of this information in these databases is submitted opportunistically and is often focused on protected lands or on lands where various developments have been proposed. Neither database represents data collected during comprehensive surveys for special-status resources in the region. As such, the absence of recorded occurrences in these databases at any specific location does not preclude the possibility that a special-status species could be present. The National Wetlands Inventory (NWI), National Hydrography Dataset (NHD), and Web Soil Survey provide comprehensive data, but at a low resolution that requires confirmation in the field. The CDFW Special Animals List and USFWS Information for Planning and Consultation system provide no spatial data on wildlife occurrences and provide only lists of species that might potentially be present.

The results of database inquiries were reviewed to develop a comprehensive list of sensitive biological resources that may be present in the vicinity of the Project. This list was then evaluated against existing conditions observed during the site visit of the BSA to determine which sensitive resources are or could be present, and then the potential for impacts to those resources to occur from Project implementation.

## **2.4 - Reconnaissance-Level Field Surveys**

A reconnaissance survey of the BSA was conducted on August 30, 2021, by QK Environmental Scientists Courtney Chaney and Shannon Gleason (Table 2.1). The survey consists of walking meandering pedestrian transects throughout the BSA, where feasible. A portion of the buffer was inaccessible because it overlapped with private residential and industrial properties. Those areas were surveyed visually with the aid of binoculars to gather a representative inventory of the plant and wildlife species present. The entire Project area was surveyed on foot.

**Table 2-1  
Reconnaissance Survey Personnel and Timing  
Wonderful: Lost Hills Expansion Project, Kern County, California**

<b>Date</b>	<b>Personnel</b>	<b>Time</b>	<b>Weather Conditions</b>	<b>Temperature</b>
August 30, 2021	Courtney Chaney, Shannon Gleason	1122-1305	Sunny, hazy	89.5-100.0°F

General tasks completed during the survey included an inventory of plant and animal species observed, characterization of vegetation associations and habitat conditions, evaluation for presence of wetlands and waters within the BSA, an assessment of the potential for federal- and State- listed and special-status plant and wildlife species to occur on and near the Project site, and assessment for migratory birds and raptors to nest on and near the Project site. All locational data was recorded using ESRI Collector for ArcGIS software installed on an iPad and site conditions were documented with representative photographs.

### **SECTION 3 - REGULATORY SETTING**

Regulated or sensitive resources that were studied and analyzed include special-status plant and animal species, nesting birds and raptors, sensitive plant communities, jurisdictional waters and wetlands, wildlife movement areas, and locally protected resources such as protected trees. Regulatory authority over biological resources is shared by federal, State, and local authorities. Primary authority for regulation of general biological resources lies within the land use control and planning authority of local jurisdictions (in this instance, City of Visalia).

Potential impacts to biological resources were analyzed based on the following list of statutes. Summaries of these statutes are provided in Appendix A.

- CEQA
- FESA
- CESA
- Federal Clean Water Act
- California Fish and Game Code
- Migratory Bird Treaty Act
- The Bald and Golden Eagle Protection Act
- Porter-Cologne Water Quality Control Act
- City of Visalia General Plan

## **SECTION 4 - ENVIRONMENTAL SETTING**

This section identifies the regional and local environmental setting of the Project site and BSA and describes existing baseline conditions. The environmental setting of the BSA was obtained from various sources of literature, databases, and aerial photographs. Information on site conditions was gathered during a survey of the Project site conducted by QK biologists.

### **4.1 - Physical Characteristics**

The BSA is in a region dominated by agricultural orchards and urban development. The BSA is located on the eastern San Joaquin Valley floor, west of the Sierra Nevada Mountain range. Residential development is located to the east and south of the Project site, light industrial is located to the north, and agricultural land is located to the south and west. The Project is located on the west section of the City of Visalia, Tulare County, a census-designated place. Land use within the Project site boundary contained two types of vegetative cover. The 40-acre parcel on the west portion of the Project site is currently contained an orchard of walnut trees. The 10-acre parcel on the east side of the Project site has been previously disturbed and is predominately barren but had sparse patches of non-native vegetation. Representative photographs of the current conditions of the BSA are included in Appendix B.

#### **4.1.1 - TOPOGRAPHY**

The Project site is on the floor of the San Joaquin Valley west of the Sierra Nevada foothills. The topography on the site is relatively flat, with an elevation range of approximately 300 to 320 feet above mean sea level.

#### **4.1.2 - CLIMATE**

The region in which the BSA is located is characterized by a Mediterranean climate of hot summers and wet, mild winters. Average high temperatures range from 56.0°F in January to 97.5°F in July, and it is not uncommon for temperatures to exceed 100°F during the summer (WRCC, 2021). Average low temperatures range from 36.8°F in December to 63.5°F in July. Precipitation occurs primarily as rain, most of which falls between November and April. Precipitation may also occur as dense fog during the winter known as Tule Fog. Rain rarely falls during the summer months and there have been numerous years of drought conditions for region resulting in lower-than-average rainfall.

#### **4.1.3 - LAND USE**

Land use surrounding the Project area consist of urban development, light industrial, fallow agriculture, orchards, non-native grassland, and barren land. Land use within the Project boundary consists of annual grassland, barren land, and deciduous orchards. The Project is bounded by paved and unpaved streets and private residences. The Project site is bounded by light industrial development to the north, North Shirk Road and residential development

to the east, an unnamed dirt road, residential, orchards, and fallow agriculture with non-native grassland to the south, and Road 88 and fallow agriculture to the west.

#### **4.1.4 - SOILS**

The BSA is underlain by two soil types: Colpien loam and Akers-Akers (Figure 4-1).

The Colpien series consists of very deep, moderately well drained soils on terraces that formed in alluvium derived mainly from granitic rocks. These soils are artificially drained. Slopes are 0 to 2 percent. The average annual precipitation is about 10 inches and the average annual temperature is about 63 degrees F. This soil is used for irrigated cropland to grow cotton, corn, wheat, grapes, stone fruits, walnuts, and alfalfa. It is also used for dairy and cattle production and building site development. This soil is considered nonhydric (NRCS 2021).

The Akers series consist of very deep, well drained soils formed in alluvium derived from granitic rock. Akers soils are on terraces. Slopes are 0 to 2 percent. The mean annual precipitation is about 10 inches, and the mean annual temperature is about 63 degrees F. This soil is used for irrigated cropland to grow cotton, corn, wheat, table grapes, walnuts, plums, and alfalfa. It is also used for dairy and cattle production and building site development.

#### **4.1.5 - HYDROLOGY**

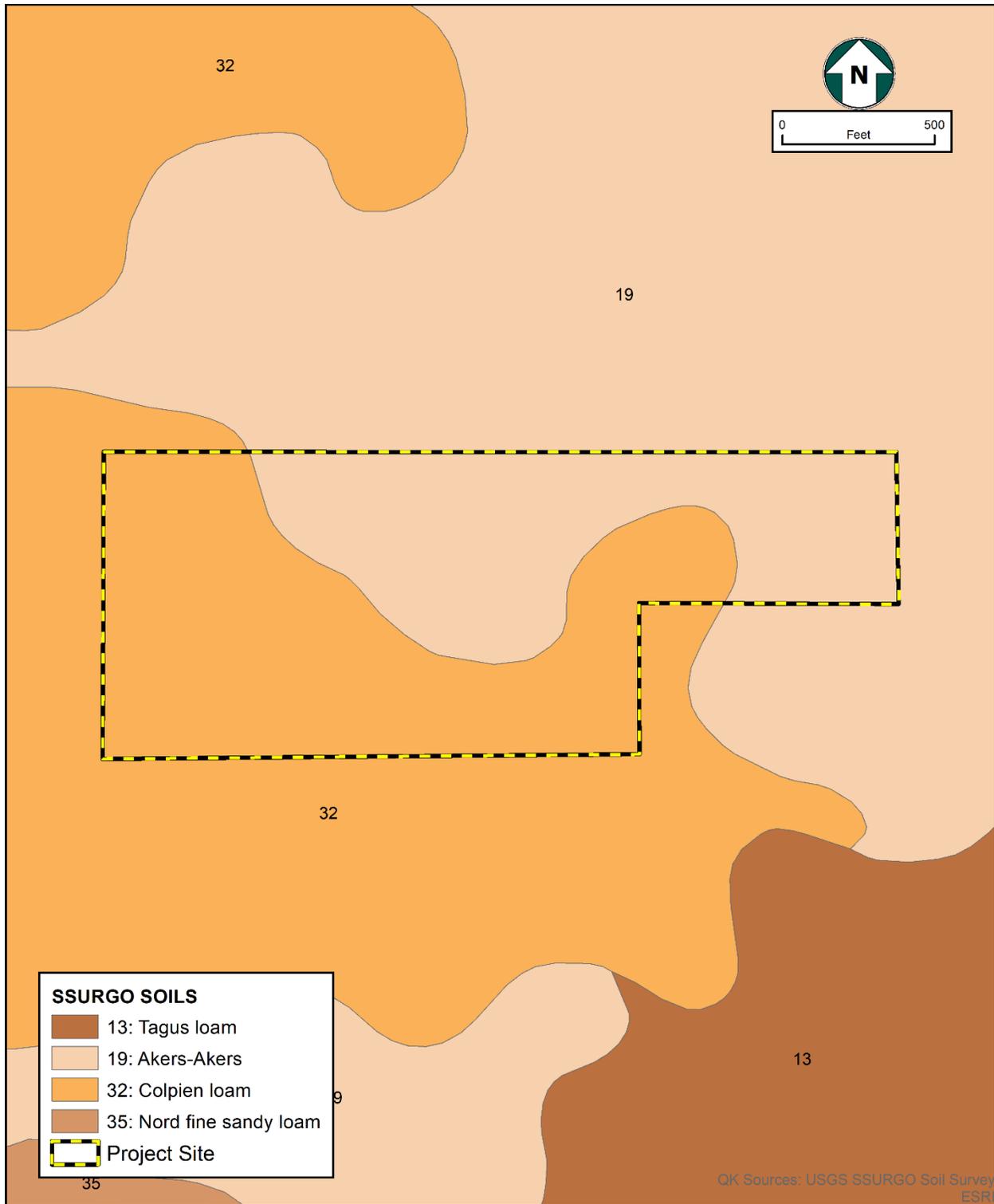
The NWI and NHD showed three waterways in the vicinity of the Project, and none were observed on site during the reconnaissance survey (USFWS 2021C; USGS 2021). One aquatic resource to the south, Mill Creek Ditch, was dry at the time of the survey. Two freshwater ponds to the north of the Project site were field verified to no longer be present. (Figure 4-2) The Project is situated within areas of 1% Annual Chance Flood Hazard and 0.2% Annual Chance Flood Hazard as designated by FEMA (FEMA 2021) (Figure 4-3).

## **4.2 - Vegetation and Other Land Cover**

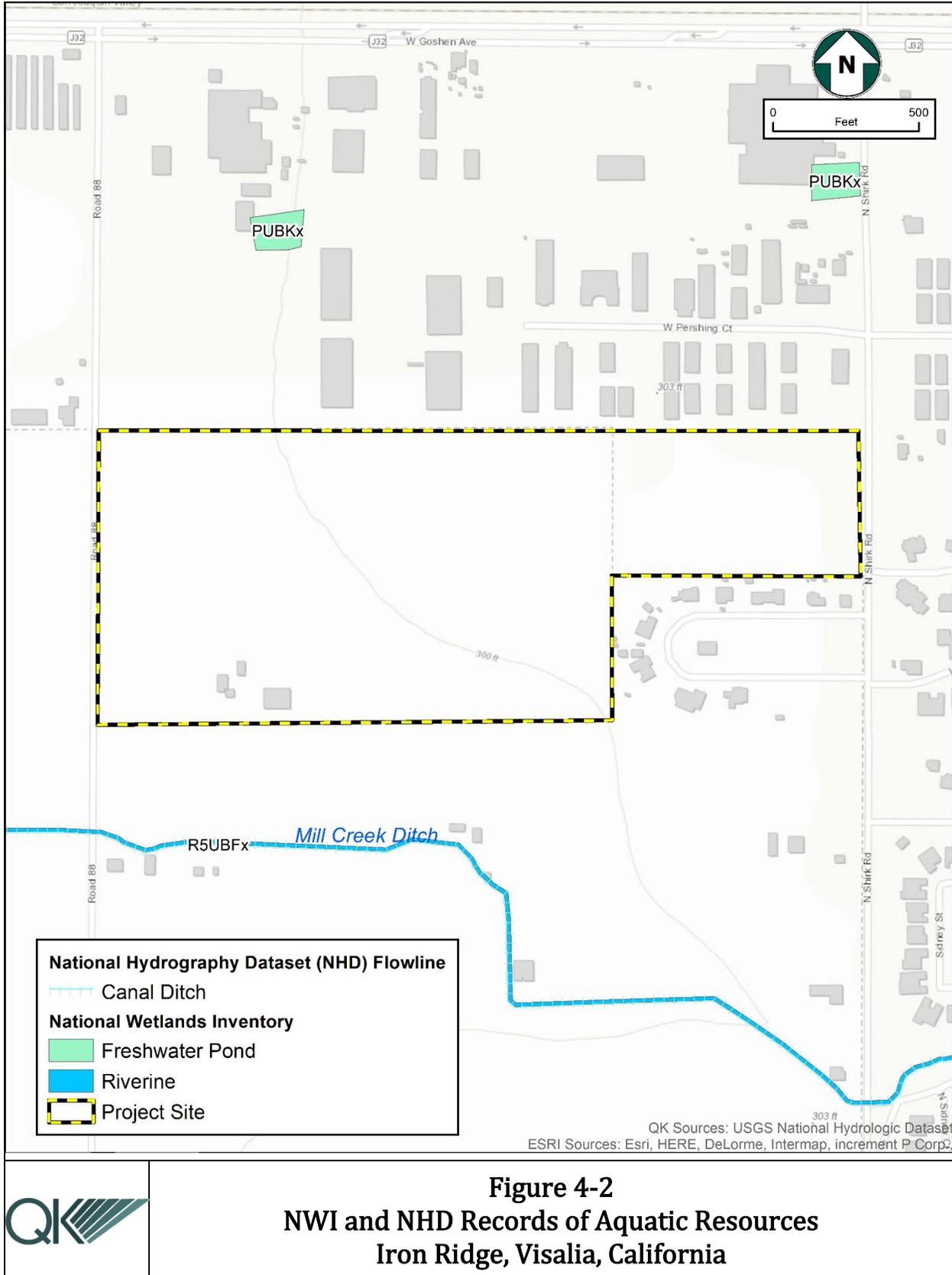
Four habitat types were observed within the BSA: Orchard, Annual Grassland, Urban, and Barren (Figure 4-4). The habitats observed on-site have been described in the context of the CWHR (Mayer and Laudenslayer 1988).

**Table 4-1  
Habitat Acreages Observed On-Site**

<b>Habitat Type</b>	<b>BSA Acreages</b>
Orchard	42.80
Urban	28.09
Annual Grassland	18.29
Barren	6.80



 **Figure 4-1**  
**Soils Mapped within the BSA**  
**Iron Ridge, Visalia, California**





**Figure 4-3**  
**FEMA Flood Zone Map**  
**Iron Ridge, Visalia, California**



#### **4.2.1 - URBAN**

Mayer and Laudenslayer (1988) describe Urban as a developed habitat with five types of vegetative structure including tree grove, street strip, shade tree/lawn, lawn, and shrub cover. Common in city parks, green belts, and cemeteries, tree groves vary in height, tree spacing, crown shape, and understory conditions, depending on species planted and landscape design. Street tree strips show variation in spacing of trees, depending upon species and design considerations, and are typically planted in grass. Shade trees/lawns are typical of residential areas and reminiscent of natural savannas. Lawns are structurally the most uniform vegetative units of the Urban habitat and shrub cover, including hedges, is more limited in distribution. Species composition in Urban habitats varies with planting design and climate and monoculture is commonly observed in tree groves and street tree strips. Three urban categories relevant to wildlife are distinguished: downtown, urban residential, and suburbia. Downtown has the lowest diversity comprised of over 90 percent avian density and biomass including rock dove, European starling, and house sparrow. Wildlife that utilize urban residential scrub jay, mockingbird, house finch, raccoon, opossum, striped skunk, and California slender salamander. Wrentits, bushtits, plain titmouse, chestnut-backed chickadee, California quail, black-tailed deer, ringtail, black-tailed jackrabbit, gopher snake and western fence lizard typically occur in suburban areas. Urban habitat is the result of modifying pre-settlement vegetation and introducing new species. They are not limited to any particular physical setting and occur throughout California.

The BSA contains urban habitat in the 250-foot buffer surrounding the Project site, consisting of light industrial development to the north and residential properties to the east. There is a residential property on the Project site along its southern boundary.

#### **4.2.2 - DECIDUOUS ORCHARD**

Mayer and Laudenslayer (1988) describe Orchards as manmade habitats that are typically monoculture operations. Deciduous orchards include trees, such as, almonds, apples, apricots, cherries, figs, nectarines, peaches, pears, pecans, pistachios, plums, pomegranates, prunes, and walnuts. Trees range in height at maturity for many species from 15 to 30 feet, or 60 feet or more in pecans and walnuts. Crowns usually touch and are usually in a linear pattern. Spacing between trees is uniform depending on desired spread of mature trees. Understory vegetation is usually composed of low-growing grasses, legumes, and other herbaceous plants, but may be managed to prevent understory growth totally or partially, such as along tree rows. Small mammals are often found along orchard rows or adjacent to fence posts. Nests in orchard trees are uncommon but birds may use orchards for perching or hunting. Other animals may traverse these lands, but limited foraging, breeding, and sheltering occurs here. Orchards are placed on both flat and sloped land and are often found adjacent to similar habitats. These habitats are extremely common across the Central Valley, the central coast, and parts of southern California.

The 40-acre rectangular parcel on the western side of the Project site is dominated by Orchard habitat containing mature walnut trees. Limited understory vegetation was present at the time of survey consisting of low-lying grasses and herbs.

### **4.2.3 - BARREN**

Mayer and Laudenslayer (1988) describe Barren habitat as a permanently non-vegetated habitat, which is any habitat with <2% total vegetation cover by herbaceous, desert, or non-wildland species and <10% cover by tree or shrub species is defined this way. Barren habitat may be found in combination with many different habitats, depending on the region of the state. Where there is little or no vegetation, structure of the non-vegetated substrate becomes a critical component of the habitat. Certain bird species including cormorants, hawks, and falcons nest on rock ledges and other species including plovers, stilts, avocets, gulls, terns, nighthawks, and poorwills rely on open ground covered with sand or gravel to construct scrape nests and bank swallows will use vertical cliffs along river corridors to nest and seek cover. Rocky canyon walls above open water are preferred foraging habitat for many species of bats. Some lizard species rely on open sandy soils in the desert for burrowing and laying eggs and some mammals rely on alpine talus slopes for cover. Barren habitat typically consists of an inhospitable environment for plants including extreme temperatures, near-vertical slopes, impermeable substrate, either natural or anthropogenic constant disturbances, or soil lacking or containing excessive organic matter or minerals. Barren habitat can occur throughout California at any elevation.

Barren habitat exists in the 250-foot buffer to the west of the Project site, consisting of recently tilled fallow agricultural fields. The area consists of disturbed soil with little to no vegetation.

### **4.2.4 - ANNUAL GRASSLAND**

Annual Grassland is described by Mayer & Laudenslayer (1988) as open grasslands composed primarily of annual plant species, which also will occur as understory plants in woodland habitats. Structure is dependent largely on weather patterns and livestock grazing, and large quantities of dead material can be found in summer months. Plant species found include introduced annual grasses such as brome (*Bromus* sp.) and wild oats (*Avena* sp.), and forbs such as red-stemmed filaree (*Erodium cicutarium*) and turkey mullein (*Croton setigerus*). Many wildlife species use annual grassland habitat for foraging, but some require special habitat features such as cliffs, ponds, and woodlands for breeding and refuge. Characteristic species for annual grasslands includes; western fence lizard, western rattlesnake, California ground squirrel (CAGS), coyote, turkey vulture, burrowing owl, and horned lark.

Annual grassland habitat exists within the sparsely vegetated 10-acre rectangular section on the northeast side of the project site. Additionally, non-native grassland habitat exists within the 250-foot buffer to the south of the Project site, existing on abandoned agricultural land.

### ***4.3 - General Wildlife Observations***

Wildlife occurring within the BSA was typical for the habitats that were present. A complete list of wildlife observations is included in Appendix C.

## SECTION 5 - SENSITIVE BIOLOGICAL RESOURCES

Local, State, and federal agencies regulate special-status species and other sensitive biological resources and require an assessment of their presence or potential for presence to be on-site prior to the approval of proposed development on a property. This section discusses sensitive biological resources observed on the project site and evaluates the potential for the Project site to support additional sensitive biological resources. Assessments for the potential occurrence of special-status species are based upon known ranges, habitat preferences for the species, species occurrence records from the CNDDDB and CNPS, species occurrence records from other sites in the vicinity of the survey area, previous reports for the project site, and the results of surveys of the Project site.

### 5.1 - Special-Status Species

There were no special-status plant species identified within the Project site or survey buffer and based on historical disturbance and current conditions none are expected to occur. However, three special-status animal species were determined to have potential to occur on-site and potentially be affected by the Project (Table 5-1). The complete list of species identified by the database search (CNDDDB, IPaC CNPS, available literature, etc.) and evaluated for this Project is included in Appendix D. Each species with potential to occur on the site is further discussed in the subsections below.

Table 5-1  
Special-Status Species with Potential to Occur On-Site

Scientific Name	Status	Potentially Affected	Viability Threat?
Common Name	Fed/State ESA CRPR/CDFW	by Project? Yes/No	Yes/No
<i>Athene cunicularia</i> burrowing owl	-/- -/SSC	Yes	No
<i>Buteo swainsoni</i> Swainson's hawk	-/ST -/-	Yes	No
<i>Vulpes macrotis mutica</i> San Joaquin kit fox	FE/ST -/-	Yes	No

FE	Federally Endangered	SC	State Candidate
FT	Federally Threatened	SS	State Sensitive
FC	Federal Candidate Species	SSC	State Species of Special Concern
FS	Federally Sensitive	SFP	State Fully Protected
SE	State Endangered	SR	State Rare
ST	State Threatened		

#### 5.1.1 - SPECIAL-STATUS PLANT SPECIES

The literature and database review identified twenty-one (21) special-status plant species known to occur or with potential to occur within the vicinity of the Project (See evaluation table in Appendix D). None of those species were determined to have potential to occur

within the BSA because all areas have been previously disturbed and/or are developed and no longer support suitable habitat for those species, outside of the know range of the species, habitat that does not support the species, or other environmental conditions.

### **5.1.2 - SPECIAL-STATUS ANIMAL SPECIES**

The literature review identified 32 special-status animal species known or with potential to occur in the vicinity of the project (see the evaluation table in Appendix D). Of those, three (3) were determined to have the potential to occur on-site.

#### **Swainson's Hawk**

**BUTEO SWAINSONI**

Status: State Threatened

Swainson's hawks occur in grassland, desert, and agricultural landscapes throughout the Central Valley and Antelope Valley (Bechard et al. 2010, Zeiner et al. 1990). Some hawks may be resident, especially in the southern portion of their range, while others may migrate between winter and breeding habitats. They prefer larger isolated trees or small woodlots for nesting, usually with grassland or dry-land grain fields nearby for foraging and have been known to nest in large eucalyptus trees along heavily traveled freeway corridors. Swainson's hawks forage in grassland, open scrub, pasture, and dryland grain agricultural habitats, primarily for rodents. Swainson's hawks exhibit a moderate to high nest site fidelity for successful nest sites.

The nearest occurrence was recorded in 2017, 1.2 miles west of the Project, where a stick nest was observed in an oak tree adjacent to agricultural fields and a commercial area (EONDX 109959; CDFW 2021b).

Based on information from the reconnaissance site visit, there are large walnut trees in the orchard on the western portion of the site that could potentially support nesting Swainson's hawks, in addition to large planted trees in urban areas in the vicinity of the Project. The annual grassland on the Project site and within the BSA could potentially provide foraging opportunities for the Swainson's hawk. However, the high density of residential neighborhoods, traffic, and lack of other potential foraging habitat in the area would decrease the likelihood of Swainson's hawk nesting activity on the Project site.

#### **Western Burrowing Owl**

**ATHENE CUNICULARIA**

Status: CDFW Species of Special Concern

The western burrowing owl is a small ground-dwelling owl that can be found throughout western North America (Klute et al. 2003). This species can be found in a variety of habitat types including grasslands, deserts, or other open habitats where food resources are available and contain treeless areas with low vegetation cover and gently sloping terrain (Rodewald 2015). Burrowing owls use earthen burrows, typically relying on other fossorial mammals to construct their burrows such as CAGS or American badger (USFWS 1998). In

California, they are most often associated with CAGS Winchell 1994. They use a burrow throughout the year for temperature regulation, offspring rearing, shelter, and escape from predators. While burrows are most often earthen, they also use atypical burrows such as pipes, culverts, and other man-made structures, most often as shelter (Shuford and Gardali 2008). Burrowing owls can have several burrows close to one other that they may frequently move among to avoid predators.

The nearest CNDDDB occurrence is from 1998 and was located approximately 5.6 miles northwest of the Project site (EONDX 35403). No western burrowing owl or diagnostic sign (e.g., burrows, whitewash, pellets, prey remains) were observed during the survey. Burrowing owls are present year-round in the Central Valley and typically use multiple burrows within their ranges. Burrowing owls have also been known to occur in urban and agriculturally developed areas. The prey base (i.e., insects and lizards) within the Project site is marginal, however it is still possible that burrowing owls may become established in the existing CAGS burrows or pass through the Project site as transients.

### **San Joaquin kit fox**

*VULPES MACROTIS MUTICA*

Status: Federally Endangered, State Threatened

The San Joaquin kit fox (SJKF) is a subspecies of kit fox that is endemic to the San Joaquin Valley, Carrizo Plain, and Cuyama Valley, as well as other small valleys in the western foothills of the Central Valley of California (USFWS 1998). They are only found west of the Sierra Nevada crest. They occupy arid to semi-arid grasslands, open shrublands, savannahs, and grazed lands with loose-textured soils. SJKF are well-established in some urban areas and are highly adaptable to human-altered landscapes. They generally avoid intensively maintained agricultural land but forage well into croplands from surrounding habitat. SJKF uses subterranean dens year-round for shelter and pup-rearing. They are nocturnally active but may be above ground near their dens during the day, particularly in the spring. They feed primarily on small mammals, but will consume a variety of prey, and will scavenge for human food.

The nearest CNDDDB occurrence (EONDX 55307) is from 2003 and approximately 3.4 miles northwest of the Project and is presumed extant (CDFW 2021a). No SJKF were observed during the survey. No kit fox or diagnostic sign (e.g., tracks, scat, prey remains, or dens) were observed during the reconnaissance survey. This species is a highly mobile transient forager which preys on small burrowing mammals and has adapted well to urbanized settings, even feeding on anthropogenic food sources. Suitable foraging and denning habitat are present within the BSA and the species may pass through as a transient.

## **5.2 - Sensitive Natural Communities**

Sensitive natural communities are designated by various resource agencies including the CDFW, USFWS, Bureau of Land Management, U.S. Forest Service, or are designated by local

agencies through policies, ordinances, and regulations. Sensitive natural communities generally have important functions or values for plants and wildlife or are recognized as declining in extent or distribution and warrant some level of protection

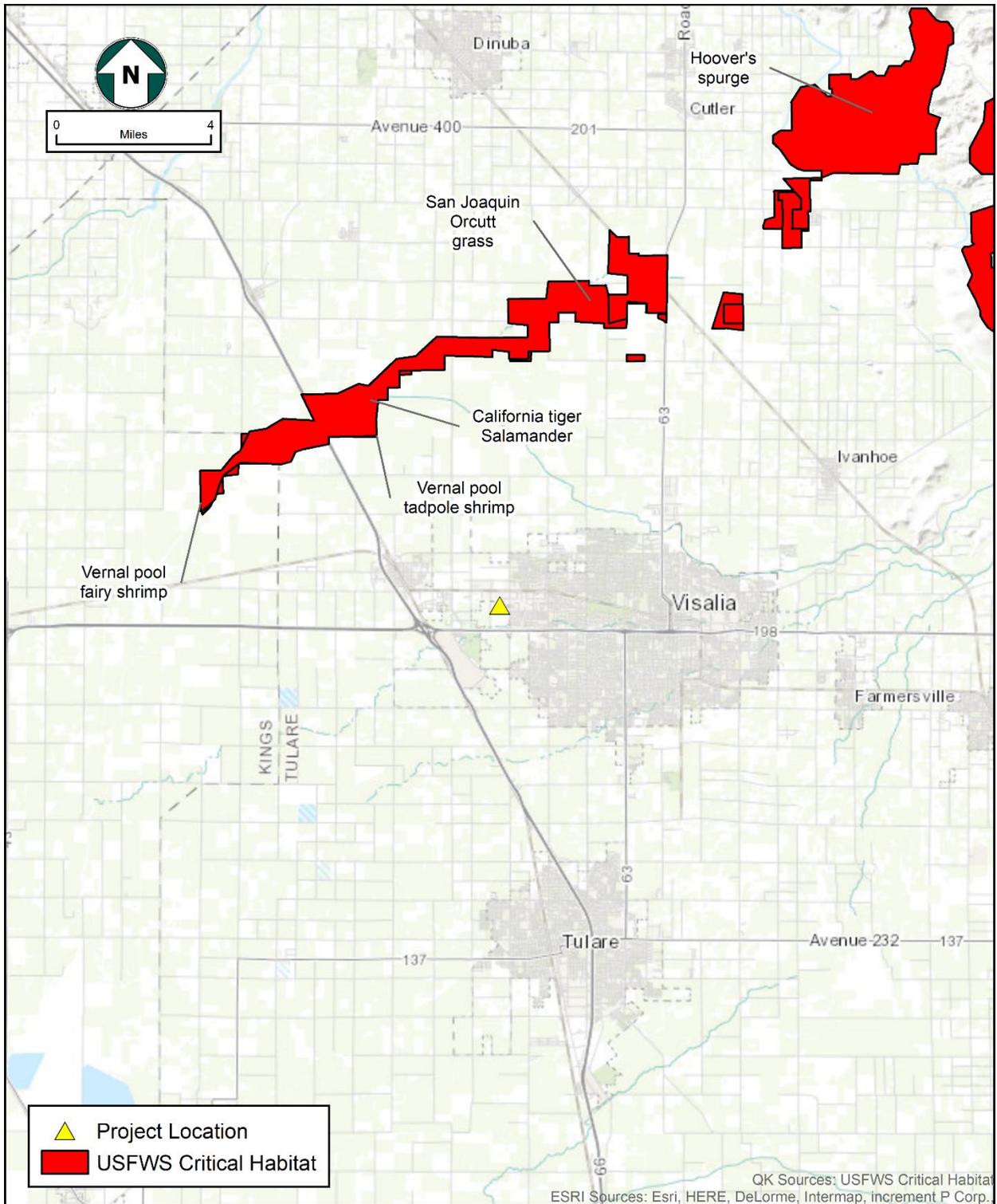
### **5.2.1 - SENSITIVE PLANT COMMUNITIES**

The CNDDDB search resulted in four sensitive natural communities occurring in the region of the Project: Northern Claypan Vernal Pool, Northern Hardpan Vernal Pool, Valley Sacaton Grassland, and Great Valley Oak Riparian Forest. None of these communities were determined to have potential to occur within the BSA because all areas have been previously disturbed and/or are developed and no longer support suitable habitat for those communities.

### **5.2.2 - CRITICAL HABITATS**

Habitat may be designated as Critical Habitat by the USFWS, which are blocks of habitat that may or may not be currently occupied by species, but which are of the highest priority for the survival, conservation, and recovery of threatened or endangered species.

There are no mapped Critical Habitats on or near the Project. The nearest Critical Habitat is located approximately 10-miles north-northwest of the Project for the vernal pool fairy shrimp, vernal pool tadpole shrimp, and California tiger salamander. Further to the northeast is critical habitat for San Joaquin Orcutt grass and Hoover's Spurge. None of these species are present on the Project site nor does the site provide suitable habitat for these species (Figure 5-2).



**Figure 5-1**  
**Critical Habitat in the Project Vicinity**  
**Iron Ridge, Visalia, California**

### **5.3 - Jurisdictional Aquatic Resources**

No water or wetland features are present on the Project site. The literature review, NHD, and NWI identified three Waters of the U.S. or wetland features in the vicinity of the Project site, however none were observed within the Project site during the reconnaissance survey. One aquatic resource to the south, Mill Creek Ditch, was dry at the time of the survey. Two freshwater ponds to the north of the Project site are no longer be present.

### **5.4 - Wildlife Movement**

Wildlife movement corridors, also referred to as dispersal corridors or landscape linkages, are generally defined as linear features along which animals can travel from one habitat or resource area to another. Wildlife movement corridors can be large tracts of land that connect regionally important habitats that support wildlife in general, such as stop-over habitat that supports migrating birds or large contiguous natural habitats that support animals with very large home ranges (e.g., coyotes [*Canis latrans*], mule deer [*Odocoileus hemionus californicus*]). They can also be small scale movement corridors, such as riparian zones, that provide connectivity and cover to support movement at a local scale.

The literature review and database search did not identify any wildlife movement corridors on or near the Project site.

### **5.5 - Resources Protected by Local Policies and Ordinances**

The City of Visalia General Plan contains policies aimed at the preservation of biological resources and promotes coordination with federal and State resource agencies. These policies are listed in Appendix A. The General Plan outlines a work plan with implementation measure by which to uphold these policies, including biological resource review for proposed projects and development of mitigation measures for these projects. The City of Visalia Valley Oak Ordinance establishes policies for care, trimming, and removal of Valley Oaks.

### **5.6 - Habitat Conservation Plans**

The Project is located within an area covered by the PG&E San Joaquin Valley Operation and Maintenance Habitat Conservation Plan (HCP). This HCP applies to maintenance and operations of PG&E facilities only and does not apply to the Project.

## **SECTION 6 - IMPACT ANALYSIS AND RECOMMENDED MITIGATION MEASURES**

This section provides an analysis of the potential for special-status biological resources to be impacted by the proposed Project. The analysis was developed using the CEQA Appendix G questions, but also provides sufficient information to support NEPA) documentation. In addition to the standard CEQA analysis topics, we have added another topic that could result in impacts to wildlife, which is an analysis of the quality of irrigation reuse water and the potential effect on wildlife of its reuse within the Land Application Area.

### **6.1 - Special-Status Species**

The proposed project would have a significant effect on biological resources if it would:

- a) *Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.*

Avoidance and minimization measures are designed to reduce or eliminate impacts to special-status species during Project construction activities. Detailed specific measures are outlined below for each special-status species that may occur on the Project footprint.

#### **6.1.1 - PROJECT IMPACTS TO SPECIAL-STATUS PLANT SPECIES**

There is no suitable habitat for any of the twenty-one (21) special-status plant species with potential to occur in the vicinity of the Project. Mitigation and minimization measures are not warranted for these species.

#### **6.1.2 - PROJECT IMPACTS TO SPECIAL-STATUS ANIMAL SPECIES**

Thirty-two (32) special-status wildlife species have potential to occur within the BSA or in its vicinity. Of these, three were determined to potentially occur on the BSA based on current habitat conditions and literature review: western burrowing owl, Swainson's hawk, and San Joaquin kit fox. Potential impacts to these species are described below.

##### **Western Burrowing Owl**

No burrowing owls or sign of the species was observed during the reconnaissance survey. However, there is suitable habitat for the species within the BSA in the Annual Grassland within the BSA where there are also California ground squirrel burrows suitable for the species. The species is known to inhabit the region and may become an established resident in suitable habitat within the BSA or pass through as a transient at any time.

Direct and/or indirect impacts to burrowing owl could occur if there is an active burrow within the BSA during the period of construction activities. Construction activities could

result in crushing or destroying a burrow, with or without a burrowing owl inside. Noise, vibration, and increased human activity resulting from Project construction activities could alter the daily behaviors of individual owls and affect foraging success, displace owls from their burrows, or lead to nest failure. Suitable nesting and foraging habitat would be lost as a result of the Project. Implementation of mitigation measures BIO-1 through BIO-3, and BIO-6 through BIO-8 as listed below, would reduce any potential impacts.

### **Swainson's Hawk**

No SWHA were observed during the survey. While not ideal habitat, the walnut orchard on site could provide possible nesting habitat for the SWHA. Additionally, suitable nesting sites are located within 0.5-mile associated with ornamental trees on surrounding residential areas and commercial landscaping. The current condition of the Project site provides marginal foraging habitat due to a low-volume prey base (i.e., insects, lizards, and CAGS).

Impacts to individual nesting SWHA outside of the Project site could occur if construction activities occur near an active nest. Noise and vibration from construction of the Project, and the presence of construction workers, could alter the normal behaviors of nesting adults and affect reproductive success within 0.5-mile of the nest site.

Implementation of Measures BIO-4 through BIO-8 would reduce impacts to this species.

### **San Joaquin Kit Fox**

There is no evidence that San Joaquin kit fox is present within the BSA, but the Annual Grassland habitat could provide potential denning and foraging habitat. The presence of CAGS within the orchard could provide foraging habitat as well. Because this species is highly mobile, there is a potential that San Joaquin kit fox could become established in these areas or be present from time to time throughout the BSA as transient foragers.

Potential impacts to this species could occur if there is an active San Joaquin kit fox den or transient individual within or near the area of development during construction activities. Potential direct impacts resulting in injury, death, or entrapment in dens, trenches, or pipes could occur if a San Joaquin kit fox occupies the construction area or travels through. Noise, vibration, and the presence of construction workers could alter normal behaviors if kit foxes are present, which could affect reproductive success and overall fitness. Implementation of mitigation measures BIO-1 through BIO-3, BIO-7, and BIO-8 as listed below, would reduce any potential impacts to San Joaquin kit fox.

### **Nesting Birds**

No bird nests were identified during the reconnaissance survey. However, the BSA supports several habitats for nesting birds, which may nest on trees and shrubs, man-made structures, and directly on the ground. Migratory birds could nest throughout the entire BSA.

Construction activities and vegetation removal could lead to the destruction of nests. Construction-related vibration, noise, and dust production, and human presence could alter the normal behaviors of nesting birds in the vicinity of the Project and lead to nest failure.

To avoid and minimize impacts to migratory birds including special-status bird species, mitigation measures BIO-4 through BIO-8, listed below, should be implemented during construction to reduce impacts to nesting birds.

### **Avoidance and Minimization Measures**

Implementation of the avoidance and minimization measures listed below would reduce impacts of the Project to special-status wildlife species to level that would be less than significant.

**BIO-1 Avoidance of Burrows for Burrowing Owl and San Joaquin Kit Fox.** Within 14 days prior to the start of Project ground-disturbing activities, a pre-activity survey with a 500-foot buffer, where land access is permitted, should be conducted by a qualified biologist knowledgeable in the identification of these species and approved by the CDFW. If dens/burrows that could support any of these species are discovered during the pre-activity survey, the avoidance buffers outlined below should be established. No work would occur within these buffers unless the biologist approves and monitors the activity.

Burrowing Owl (active burrows)

- Non-breeding season: September 1 – January 31 – 160 feet
- Breeding season: February 1 – August 31 – 250 feet

American Badger/SJKF

- Potential or Atypical den – 50 feet
- Known den – 100 feet
- Natal Den –Contact CDFW for consultation

**BIO-2 Burrowing Owl and San Joaquin Kit Fox Avoidance.** A qualified biologist should remain on-call throughout the construction phase if a burrowing owl, American badger, or SJKF occurs on the site during construction. If one of these species occurs on-site, the biologist should be contacted immediately to determine whether biological monitoring or the implementation of avoidance buffers may be warranted.

**BIO-3 Standard Avoidance and Minimization Measures for the protection of San Joaquin Kit Fox and Western Burrowing Owl.**

The following avoidance and minimization measures should be implemented during all phases of the Project to reduce the potential for impact from the Project. They are modified from the *U.S. Fish and Wildlife Service Standardized Recommendations for Protection of the Endangered SJKF Prior to or During Ground Disturbance* (USFWS 2011, Appendix E).

- a. All food-related trash items such as wrappers, cans, bottles, and food scraps shall be disposed of in securely closed containers and removed at least once a week from the construction or Project Site.
- b. Construction-related vehicle traffic shall be restricted to established roads and predetermined ingress and egress corridors, staging, and parking areas. Vehicle speeds shall not exceed 20 miles per hour (mph) within the Project Site.
- c. To prevent inadvertent entrapment of kit fox or other animals during construction, the contractor shall cover all excavated, steep-walled holes or trenches more than two feet deep at the close of each workday with plywood or similar materials. If holes or trenches cannot be covered, one or more escape ramps constructed of earthen fill or wooden planks shall be installed in the trench. Before such holes or trenches are filled, the contractor shall thoroughly inspect them for entrapped animals. All construction-related pipes, culverts, or similar structures with a diameter of four-inches or greater that are stored on the Project Site shall be thoroughly inspected for wildlife before the pipe is subsequently buried, capped, or otherwise used or moved in anyway. If at any time an entrapped or injured kit fox is discovered, work in the immediate area shall be temporarily halted and USFWS and CDFW shall be consulted.
- d. Kit foxes are attracted to den-like structures such as pipes and may enter stored pipes and become trapped or injured. All construction pipes, culverts, or similar structures with a diameter of four inches or greater that are stored at a construction site for one or more overnight periods shall be thoroughly inspected for kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a kit fox is discovered inside a pipe, that section of pipe shall not be moved until the USFWS and CDFW have 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.
- e. No pets, such as dogs or cats, shall be permitted on the Project Sites to prevent harassment, mortality of kit foxes, or destruction of dens.
- f. Use of anti-coagulant rodenticides and herbicides in Project Sites shall 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 shall observe label and other restrictions mandated by the U.S. Environmental Protection Agency, California Department of Food and Agriculture, and other State and Federal legislation, as well as additional Project-related restrictions deemed necessary by the USFWS and CDFW. If rodent control must be conducted, zinc phosphide shall be used because of the proven lower risk to kit foxes.
- g. A representative shall 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 shall be identified during the employee education program and their name and telephone number shall be provided to the USFWS.

- h. The Sacramento Fish and Wildlife Office of USFWS and CDFW shall be notified in writing within three working days of the accidental death or injury to a SJKF 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. The USFWS contact is the Chief of the Division of Endangered Species, at the addresses and telephone numbers below. The CDFW contact can be reached at (559) 243-4014 and R4CESA@wildlifeca.gov.
- i. All sightings of the SJKF shall be reported to the California Natural Diversity Database (CNDDDB). A copy of the reporting form and a topographic map clearly marked with the location of where the kit fox was observed shall also be provided to the Service at the address below.
- j. Any Project-related information required by the USFWS or questions concerning the above conditions, or their implementation may be directed in writing to the U.S. Fish and Wildlife Service at: Endangered Species Division, 2800 Cottage Way, Suite W 2605, Sacramento, California 95825-1846, phone: (916) 414-6620 or (916) 414-6600.

**BIO-4 Pre-activity Surveys for Swainson's Hawk Nests.** If Project construction activities must occur during the Swainson's hawk nesting season (February 15 to August 31), pre-construction activity surveys should be conducted over the Project area and within 0.5-mile for Swainson's hawk nests in accordance with the *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley*, Swainson's Hawk Technical Advisory Committee (CDFG 2000).

**BIO-5 Swainson's Hawk Nest Avoidance.** If an active Swainson's hawk nest is discovered at any time within 0.5-mile of active construction, a qualified biologist should complete an assessment of the potential for current construction activities to impact the nest. The assessment would consider the type of construction activities, the location of construction relative to the nest, the visibility of construction activities from the nest location, and other existing disturbances in the area that are not related to construction activities of this Project. Based on this assessment, the biologist will determine if construction activities can proceed, and the level of nest monitoring required. Construction activities should not occur within 500 feet of an active nest but depending upon conditions at the site this distance may be reduced. Full-time monitoring to evaluate the effects of construction activities on nesting Swainson's hawks may be required. The qualified biologist should have the authority to stop work if it is determined that Project construction is disturbing the nest. These buffers may need to increase depending on the sensitivity of the nesting Swainson's hawk to disturbances and at the discretion of the qualified biologist.

**BIO-6 Pre-activity Surveys for Nesting Birds.** If Project construction activities will be initiated during the nesting season (February 1 to September 15), a pre-activity

nesting bird survey should be conducted within 14 days prior to the start of construction. The surveys should encompass the Project footprint and accessible areas or land visible from accessible areas within a 250-foot buffer for songbirds and a 500-foot buffer for raptors. If no active nests are found, no further action is required. However, existing nests may become active and new nests may be built at any time prior to and throughout the nesting season, including when construction activities are in progress.

If active nests are found during the survey or at any time during construction of the Project, an avoidance buffer ranging from 50 feet to 500 feet may be required, with the avoidance buffer from any specific nest being determined by a qualified biologist. The avoidance buffer will remain in place until the biologist has determined that the young are no longer reliant on the adults or the nest, or if breeding attempts have otherwise been unsuccessful. Work may occur within the avoidance buffer under the approval and guidance of the biologist, but full-time monitoring may be required. The biologist shall have the ability to stop construction if nesting adults show any sign of distress.

**BIO-7 Preconstruction Clearance Survey.** Within 14 days prior to the start of ground disturbance activities, a pre-activity survey should be conducted by a qualified biologist knowledgeable in the identification of all special-status plant and wildlife species with potential to occur in the vicinity of the Project. All suitable burrows that could support blunt-nosed leopard lizard, Tipton kangaroo rat, short-nosed kangaroo rat, Tulare grasshopper mouse, or other special-status wildlife species will be avoided during construction in accordance with BIO-5 and BIO-6, unless verification surveys have indicated that the species are not present. Consultation with the USFWS and CDFW may be required if listed or fully protected species are detected during the survey.

**BIO-8 Worker Environmental Awareness Training.** Prior to the initiation of construction activities, all construction personnel should attend a Worker Environmental Awareness Training program developed by a qualified biologist. Any personnel associated with construction that did not attend the initial training shall be trained by the authorized biologist prior to working on the project site. Any employee responsible for the operations and maintenance or decommissioning of the project facilities shall also attend the Worker Environmental Awareness Training program prior to starting work on the project and on an annual basis. The Program shall be developed and presented by the project qualified biologist(s) or designee approved by the qualified biologist(s). The program should include information on the life histories of special-status species with potential to occur on the Project, their legal status, course of action should these species be encountered on-site, and avoidance and minimization measures to protect these species. It shall include the components described below:

- a. Information on the life history and identification of special-status species that may occur or that may be affected by Project activities. The program shall also

discuss the legal protection status of each such species, the definition of “take” under the Federal Endangered Species Act and California Endangered Species Act, measures the Project proponent/operator shall implement to protect the species, reporting requirements, specific measures for workers to avoid take of special-status plant and wildlife species, and penalties for violation of the requirements outlined in the California Environmental Quality Act mitigation measures and agency permit requirements.

- b. An acknowledgement form signed by each worker indicating that the Worker Environmental Awareness Training and Education Program has been completed shall be kept on file at the construction site.
- c. A copy of the training transcript and/or training video, as well as a list of the names of all personnel who attended the Worker Environmental Awareness Training and Education Program and signed acknowledgement forms shall be submitted to the City of Tulare Planning Department.
- d. A copy of the training transcript, training video or informational binder for specific procedures shall be kept available for all personnel to review and be familiar with, as necessary.
- e. A sticker shall be placed on hard hats indicating that the worker has completed the Worker Environmental Awareness Training and Education Program. Construction workers shall not be permitted to operate equipment within the construction areas unless they have attended the Worker Environmental Awareness Training and Education Program and are wearing hard hats with the required sticker.

The construction crews and contractor(s) shall be responsible for preventing unauthorized impacts from project activities to sensitive biological resources that are outside the areas defined as subject to impacts by Project permits. Unauthorized impacts may result in project stoppage, and/or fines depending on the impact and coordination with the California Department of Fish and Wildlife and/or U.S. Fish and Wildlife Service.

## **6.2 - Sensitive Natural Communities and Critical Habitat**

There are no sensitive natural communities present on the Project and there would be *no impacts* to sensitive natural communities.

## **6.3 - Jurisdictional Aquatic Resources**

There are no identified water features or federal waters, or wetlands located on or near the Project. Therefore, the Project will result in *no impacts* to any waters or wetlands.

## **6.4 - Wildlife Movement**

There are no identified movement corridors on or near the Project site. The Project site may be used by transient foragers such as SJKF. The open landscape creates a foraging habitat, which may be used from time to time by these species. The Project will result in *no impacts* to fish or wildlife movement corridors, linkages or nurse sites.

### **6.5 - Local Policies and Ordinances**

The Project does not conflict with the City of Visalia General Plan, the Valley Oak Tree Ordinance, or any other local ordinances. Therefore, there are no impacts with respect to local policies and ordinance and no measures are warranted Adopted or Approved Plans.

### **6.6 - Adopted or Approved Plans**

The proposed project would have a significant effect on biological resources if it would:

- b) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or state habitat conservation plan.*

The Project is located within an area covered by the PG&E San Joaquin Valley Operation and Maintenance HCP. This HCP applies only to PG&E's activities and does not apply to this Project. No Project impacts related to adopted or approved plans would occur, and no measures are warranted.

## **SECTION 7 - LIMITATIONS, ASSUMPTIONS, AND USE RELIANCE**

This Biological Analysis Report has been performed in accordance with professionally accepted biological investigation practices conducted at this time and in this geographic area. The findings and opinions conveyed in this report are based upon on-site field examinations, jurisdictional areas, and specified historical and literature sources. The biological investigation is limited by the scope of work performed. Biological surveys conducted as part of this assessment may not have been performed during a particular blooming period, nesting period, or particular portion of the season when positive identification of certain taxa would be expected if present, and therefore cannot be considered definitive. The biological surveys are limited also by the environmental conditions present at the time of the surveys. In addition, general biological (or protocol) surveys do not guarantee that the organisms are not present and will not be discovered in the future within the site. In particular, mobile animal species could occupy the site on a transient basis or re-establish populations in the future. No other guarantees or warranties, expressed or implied, are provided.

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## **SECTION 9 - LIST OF PREPARERS**

### **QK Inc.**

#### Primary Author

- Courtney Chaney, Associate Environmental Scientist

#### Secondary Author

- Name, Title

#### Technical Review

- Name, Title

#### Graphics

- Karissa Denney, Associate Environmental Scientist

#### Production

- Name, Title

#### Field Reconnaissance Survey

- Courtney Chaney, Associate Environmental Scientist
- Shannon Gleason, Associate Environmental Scientist

#### Jurisdictional Evaluation

- Name, Title

**APPENDIX A**  
**REGULATORY SETTING**

## **Regulatory Setting**

### **Federal Laws and Regulations**

#### **FEDERAL ENDANGERED SPECIES ACT OF 1973 (USC, TITLE 16, SECTIONS 1531 -1543)**

The federal Endangered Species Act (FESA) and subsequent amendments provide guidance for the conservation of endangered and threatened species and the ecosystems upon which they depend. The FESA defines species as threatened or endangered and provides regulatory protection for listed species. The FESA provides a program for the conservation and recovery of threatened and endangered species as well as the protection of designated critical habitat that USFWS determines is required for the survival and recovery of listed species.

Section 9 lists actions that are prohibited under the FESA. Although take of a listed species is prohibited, it is allowed when it is incidental to an otherwise legal activity. Section 9 prohibits take of listed species of fish, wildlife, and plants without special exemption. The definition of “harm” includes significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns related to breeding, feeding, or shelter. “Harass” is defined as actions that create the likelihood of injury to listed species by disrupting normal behavioral patterns related to breeding, feeding, and shelter significantly.

Section 7 of the FESA requires federal agencies, in consultation with and assistance from the Secretary of the Interior or the Secretary of Commerce, as appropriate, 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 of adverse modification of critical habitat for these species. The USFWS and National Marine Fisheries Service (NMFS) share responsibilities for administering the FESA. Regulations governing interagency cooperation under Section 7 are found in California Code of Regulations (CCR) Title 50, Part 402. If an activity could result in "take" of a listed species as an incident of an otherwise lawful activity, then a biological opinion can be issued with an incidental take statement that exempts the activity from FESA's take prohibitions.

Section 10 provides a means whereby a nonfederal action with the potential to result in take of a listed species can be allowed under an incidental take permit. Application procedures are found at CFR Title 50, Sections 13 and 17 for species under the jurisdiction of USFWS and CFR, Title 50, Sections 217, 220, and 222 for species under the jurisdiction of NMFS. Section 10 would apply to the Project if take of a species (as defined in Section 9) were determined to occur.

Section 4(a)(3) and (b)(2) of the FESA requires the designation of critical habitat to the maximum extent possible and prudent based on the best available scientific data and after considering the economic impacts of any designations. Critical habitat is defined in section 3(5)(A) of the FESA: 1) areas within the geographic range of a species that are occupied by individuals of that species and contain the primary constituent elements (physical and biological features) essential to the conservation of the species, thus warranting special

management consideration or protection; and 2) areas outside of the geographic range of a species at the time of listing but that are considered essential to the conservation of the species.

### ***MIGRATORY BIRD TREATY ACT (USC, TITLE 16, SECTIONS 703 - 711)***

The MBTA, first enacted in 1918, is a series of treaties that the United State has with Great Britain (on behalf of Canada), Mexico, Japan, and the former Soviet Union that provide for international migratory bird protection. The MBTA authorizes the Secretary of the Interior to regulate the taking of migratory birds. The act provides that it shall be unlawful, except as permitted by regulations, “to pursue, take, or kill any migratory bird, or any part, nest or egg of any such bird” (U.S. Code Title 16, Section 703). The MBTA currently includes several hundred species and includes all native birds.

### ***BALD AND GOLDEN EAGLE PROTECTION ACT OF 1940 (USC, TITLE 16, SECTION 668)***

The Bald and Golden Eagle Protection Act (BGEPA) of 1940 protects bald eagles (*Haliaeetus leucocephalus*) and golden eagle (*Aquila chrysaetos*) by prohibiting the taking, possession, and commerce of these species and established civil penalties for violation of this act. Take of bald and golden eagles includes to “pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb.” To disturb means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially inferring with normal breeding, feeding, or sheltering behavior. (Federal Register [FR], volume 72, page 31132; 50 CFR 22.3).

### ***FEDERAL CLEAN WATER ACT (USC, TITLE 33, SECTIONS 1521 - 1376)***

The Federal Clean Water Act (CWA) provides guidance for the restoration and maintenance of the chemical, physical, and biological integrity of the nation’s waters. Section 401 requires that a Project applicant that is pursuing a federal license or permit allowing a discharge to waters of the U.S. to obtain State Certification of Water Quality, thereby ensuring that the discharge will comply with provisions of the CWA. The Regional Water Quality Control Board (RWQCB) administers the certification program in California. Section 402 establishes a permitting system for the discharge of any pollutant (except dredged or fill material) into waters of the U.S. Section 404 establishes a permit program administered by the United States Army Corps of Engineers (USACE) that regulates the discharge of the dredged or fill material into waters of the U.S., including wetlands. The USACA implementing regulations are found in CFR, Title 33, Sections 320 and 330. Guidelines for implementation are referred to as the Section 404(b)(1) Guidelines, which were developed by the United States Environmental Protection Agency (EPA) in conjunction with USACE (40 CFR 230). The guidelines allow the discharge of dredged or fill material into the aquatic system only if there is no practicable alternative that would have less adverse impacts.

## ***Applicable State Laws and Regulations***

### ***CALIFORNIA ENVIRONMENTAL QUALITY ACT (CALIFORNIA PUBLIC RESOURCES CODE, SECTIONS 21000 - 21178, AND TITLE 14 CCR, SECTION 753, AND CHAPTER 3, SECTIONS 15000 - 15387)***

The California Environmental Quality Act (CEQA) is California's broadest environmental law. CEQA helps guide the issuance of permits and approval of projects. Courts have interpreted CEQA to afford the fullest protection of the environment within the reasonable scope of the statutes. CEQA applies to all discretionary projects proposed to be conducted or approved by a State, County, or City agency, including private projects requiring discretionary government approval.

The purpose of CEQA is to disclose to the public the significant environmental effects of a proposed discretionary project; prevent or minimize damage to the environment through development of project alternatives, mitigation measures, and mitigation monitoring; disclose to the public the agency decision making process to approve discretionary projects; enhance public participation in the environmental review process; and improve interagency coordination.

State CEQA Guidelines Section 15380(b) provides that a species not listed on the federal or State list of protected species nonetheless may be considered rare or endangered for purposes of CEQA if the species can be shown to meet certain specified criteria. These criteria have been modeled after the definition in FESA and the section of the California Fish and Game Code dealing with rare or endangered plants or animals.

### ***CALIFORNIA ENDANGERED SPECIES ACT (CALIFORNIA FISH AND GAME CODE SECTION 2050 ET SEQ.)***

The California Endangered Species Act (CESA) establishes the policy of the State to conserve, protect, restore, and enhance threatened or endangered species and their habitats. The CESA mandates that State agencies should not approve Projects that would jeopardize the continued existence of threatened or endangered species if reasonable and prudent alternatives are available that would avoid jeopardy. For Projects that would result in take of a species listed under the CESA, a project proponent would need to obtain a take permit under Section 2081(b). Alternatively, the CDFW has the option of issuing a Consistency Determination (Section 2080.1) for Projects that would affect a species listed under both the CESA and the FESA, as long as compliance with the FESA would satisfy the “fully mitigate” standard of CESA, and other applicable conditions.

### ***PORTER-COLOGNE WATER QUALITY CONTROL ACT***

Under Section 401 of the CWA, the RWQCB must certify that actions receiving authorization under Section 404 of the CWA also meet State water quality standards. The RWQCB regulates waters of the State under the authority of the Porter-Cologne Water Quality Control Act (Porter Cologne Act). The RWQCB requires Projects to avoid impacts to wetlands whenever feasible and requires that Projects do not result in a net loss of wetland acreage or a net loss

of wetland function and values. The RWQCB typically requires compensatory mitigation for impacts to wetlands and/or waters of the State. The RWQCB has jurisdiction over waters deemed 'isolated' or not subject to Section 404 jurisdiction under the Solid Waste Agency of Northern Cook County (SWANCC) decision. Dredging, filling, or excavation of isolated waters constitutes a discharge of waste into waters of the State, and such discharges are authorized through an Order of Waste Discharge (or waiver of discharge) from the RWQCB.

## ***VARIOUS SECTIONS OF THE CALIFORNIA STATE AND FISH AND GAME CODE***

### ***Section 460 and Sections 4000-4003***

Chapter 5 of the California Fish and Game Code (FGC) describes regulations concerning the take of furbearing mammals, including defining methods of take, seasons of take, bag and possession limits, and areas of the State where take is allowed. Section 4000-4003 defines furbearing mammals, and the issuance of permits by the Department. Sections 460 and 4000 identifies fisher, marten, river otter, desert kit fox and red fox as furbearing mammals, and Section 460 prohibits take of these species at any time. This section of the California Fish and Game Code (FGC) has historically been interpreted to apply to restriction on furbearer trapping permit but has recently been expanded by CDFW to apply to any forms of take and treated as if these species were listed under CESA.

### ***Sections 1600 through 1616***

Under these sections of the FGC, a Project operator is required to notify CDFW prior to any Project that would divert, obstruct, or change the natural flow, bed, channel, or bank of any river, stream, or lake. Pursuant to the California Code of Regulations, a "stream" is defined as a body of water that flows at least periodically, or intermittently, through a bed or channel having banks and supporting fish or other aquatic life. Based on this definition, a watercourse with surface or subsurface flows that supports or has supported riparian vegetation is a stream and is subject to CDFW jurisdiction. Altered or artificial watercourses valuable to fish and wildlife are subject to CDFW jurisdiction. CDFW also has jurisdiction over dry washes that carry water during storm events. Preliminary notification and Project review generally occur during the environmental process. When an existing fish or wildlife resource may be substantially adversely affected, CDFW is required to propose reasonable Project changes to protect the resource. These modifications are formalized in a Streambed Alteration Agreement.

### ***Sections 3511, 4700, 5050, and 5515***

The protection of fully protected species is described in Sections 3511, 4700, 5050, and 5515 of the FGC. These statutes prohibit take or possession of fully protected species. CDFW is unable to authorize incidental take of fully protected species, except as allowed for in an approved Natural Communities Conservation Plan (NCCP), or through direct legislative action.

## **Sections 1900 through 1913 - Native Plant Protection Act**

California's Native Plant Protection Act (NPPA) requires all State agencies to use their authority to carry out programs to conserve endangered and rare native plants. Provision of the NPPA prohibit that taking of listed plants from the wild and require notification of CDFW at least ten days in advance of any change in land use. This allows CDFW to salvage listed plant species that otherwise would be destroyed. A Project proponent is required to conduct botanical inventories and consult with CDFW during Project planning to comply with the provisions of this act and sections of CEQA that apply to rare or endangered plants.

## **Local and Regional Laws, Regulations, and Policies**

### **CITY OF VISALIA GENERAL PLAN**

The Visalia General Plan is a document required under State law to address issues related to physical development and conservation of resources. The plan also includes local, regional, State, and federal programs and regulation as well as a comprehensive set of guiding and implementation policies. The City of Visalia Valley Oak Ordinance establishes policies for the care, trimming and removal of Valley Oaks. The City of Visalia General Plan sets forth the following goals and policies relevant to biological resources;

**OSC-P-27** Establish a “no net loss” standard for sensitive habitat acreage, including wetlands and vernal pools potentially affected by development.

**OSC-P-30** Require assessments of biological resources prior to approval of any discretionary development projects involving riparian habitat, wetlands, or special status species habitat. Early in the development review process, consult with California Department of Fish and Game, U.S. Fish and Wildlife Service, and other agencies.

**APPENDIX B**

**REPRESENTATIVE PHOTOGRAPHS**



**Photograph 1:** View of the northeast section of the Project site.  
36.338193, -119.367892 facing west  
Photograph taken by Courtney Chaney on August 30, 2021.



**Photograph 2:** View of 10-acre parcel in the northeast section of the Project site.  
36.336930, -119.367973 facing north  
Photograph taken by Courtney Chaney on August 30, 2021.



**Photograph 3:** View of 10-acre parcel in the northeast section of the Project site.  
36.336930, -119.367973 facing west  
Photograph taken by Courtney Chaney on August 30, 2021.



**Photograph 4:** View of 10-acre parcel in the northeast section of the Project site.  
36.337492, -119.369125 facing west  
Photograph taken by Courtney Chaney on August 30, 2021.



**Photograph 5:** Walnut orchard habitat in the 40-acre parcel in the western side of the Project site.  
36.337330, -119.371253 facing south  
Photograph taken by Courtney Chaney on August 30, 2021.



**Photograph 6:** Walnut orchard habitat in the 40-acre parcel in the western side of the Project site.  
36.337329, -119.374045 facing east  
Photograph taken by Courtney Chaney on August 30, 2021.



**Photograph 7:** Project boundary. Project site with orchard to the right, buffer area to the left.  
36.335458, -119.372422 facing west  
Photograph taken by Courtney Chaney on August 30, 2021.



**Photograph 8:** View of the fallow agricultural field west of the Project site.  
36.335583, -119.376573 facing west  
Photograph taken by Courtney Chaney on August 30, 2021.



**Photograph 9:** Representative small mammal burrows observed within the orchard.  
36.336751, -119.372436

Photograph taken by Courtney Chaney on August 30, 2021.



**Photograph 10:** California ground squirrel burrows located along the dirt road south of the orchards.  
36.335466, -119.375790

Photograph taken by Courtney Chaney on August 30, 2021.

**APPENDIX C**

**PLANT AND ANIMAL SPECIES OBSERVED WITHIN THE BIOLOGICAL STUDY AREA**

**Table C-1**  
**Plant Species Observed within the Biological Study Area on 08/30/2021**  
**Iron Ridge, Visalia, California**

Scientific Name	Common Name	Status	Native or Introduced
<b>Trees</b>			
<i>Juglans nigra</i>	Black walnut	None	Introduced
<i>Washingtonia robusta</i>	Mexican fan palm	None	Introduced-Cal-IPC Moderate
<i>Juglans regia</i>	English walnut	None	Introduced
<i>Nerium oleander</i>	oleander	None	Introduced
<b>Shrubs</b>			
<i>Helianthus gracilentus</i>	Slender sunflower	None	Native
<i>Datura wrightii</i>	Jimson weed	None	Native
<b>Herbs</b>			
<i>Salsola tragus</i>	Russian thistle	None	Introduced- Cal-IPC Limited
<i>Chenopodium album</i>	Lambs quarters	None	Introduced
<i>Amsinckia</i> sp.	fiddleneck	None	Native
<i>Lactuca serriola</i>	Prickly lettuce	None	Introduced
<i>Tribulus terrestris</i>	puncturevine	None	Introduced- Cal-IPC Limited
<i>Erodium cicutarium</i>	red-stemmed filaree	None	Introduced- Cal-IPC Limited
<i>Convolvulus arvensis</i>	Field bindweed	None	Introduced
<i>Sisymbrium irio</i>	London rocket	None	Introduced- Cal-IPC Limited
<i>Melilotus indicus</i>	Annual yellow clover	None	Introduced
<i>Portulaca oleracea</i>	Common purslane	None	Introduced
<i>Erigeron canadensis</i>	horseweed	None	Native
<i>Malva parviflora</i>	cheeseweed	None	Introduced
<b>Grasses</b>			
<i>Bromus diandrus</i>	Ripgut brome	None	Introduced- Cal-IPC Moderate
<i>Avena fatua</i>	Wild oat	None	Introduced
<i>Digitaria sanguinalis</i>	crabgrass	None	Introduced
<i>Bromus madritensis</i> <i>ssp. Rubens</i>	Red brome	None	Introduced- Cal-IPC High
<i>Polypogon</i> sp.	Beard grass	None	Introduced- Cal-IPC Limited
<i>Sorghum halepense</i>	Johnson grass	None	Introduced

\*Cal-IPC = California Invasive Plant Council.

**Rating system:** **High** = several ecological impacts; **Moderate** = substantial but not severe ecological impacts; **Limited** = minor ecological impacts or not enough information to justify higher score; **Alert** = species ranked as High or Moderate with limited distribution, but potential to spread; **Watch** = could pose a high risk of becoming invasive in the future.

**Table C-2**  
**Animal Species Observed within the Biological Study Area on 08/30/2021**  
**Iron Ridge, Visalia, California**

Scientific Name	Common Name	Status	Native or Introduced
<b>Reptiles</b>			
<i>Uta</i>	Side-blotched lizard	None	Native
<i>Sceloporus occidentalis</i>	Western fence lizard	None	Native
<b>Birds</b>			
<i>Tyto alba</i>	Barn owl	None	Native
<i>Sayornis nigricans</i>	Black phoebe	None	Native
<i>Melanerpes formicivorus</i>	Acorn woodpecker	None	Native
<i>Picoides villosus</i>	Hairy woodpecker	None	Native
<i>Aphelocoma californica</i>	California scrub jay	None	Native
<i>Zenaida macroura</i>	Mourning dove	None	Native
<i>Buteo jamaicensis</i>	Red tailed hawk	None	Native
<b>Mammals</b>			
<i>Procyon lotor</i>	Raccoon*	None	Native
<i>Canis lupus familiaris</i>	Domestic dog*	None	Introduced
<i>Felis catus</i>	Domestic cat*	None	Introduced
<i>Otospermophilus beecheyi</i>	California ground squirrel	None	Native

**APPENDIX D**

**SPECIAL-STATUS SPECIES DATABASE SEARCH RESULTS**

**Table D-1**  
**Special-Status Plant Species in the Regional Vicinity of the Project Site**  
**Iron Ridge, Visalia, California**

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
<b>Sensitive Natural Communities</b>				
Northern Claypan Vernal Pool	-/- -/-	This community consists of a low, herbaceous community dominated by annual herbs and grasses. Germination and growth begin with winter rains, often continuing even when inundated. Rising spring temperatures evaporate the pools, leaving concentric bands of vegetation. Claypan vernal pools are typically small and contain less cover than northern hardpan vernal pools.	No	Habitat to support this community is absent from the Project site.
Northern Hardpan Vernal Pool	-/- -/-	This community occurs on old, very acidic, Fe-Si cemented hardpan soils (Redding, San Joaquin, and similar series). The microrelief on these soils typically is hummocky, with mounds intervening between localized depressions. Winter rainfall perches on the hardpan, forming pools in the depressions. Evaporation (not runoff) empties pools in the spring.	No	Habitat to support this community is absent from the Project site.
Valley Sacaton Grassland	-/- -/-	This community is dominated by alkali sacaton, a tuft formed grass. It is found in areas with fine textured, poorly drained, and usually alkaline soils with high water tables, or that are flooded during winter months.	No	Habitat to support this community is absent from the Project site.

Great Valley Valley Oak Riparian Forest	-/- -/-	This community occurs in relatively fine-textured alluvium, somewhat back from active river channels. These sites experience overbank flooding (with abundant alluvial deposition and groundwater recharge) without severe physical battering or erosion.	No	Habitat to support this community is absent from the Project site.
<b>Plants</b>				
<i>Amaranthus watsonii</i> Watson's amaranth				
<i>Atriplex cordulata</i> var. <i>cordulata</i> heartscale	-/- 1B.2	This endemic annual herb blooms from April to October. It occurs on saline and alkaline soils in chenopod scrub, meadows and seeps, and valley foothill grassland habitats at elevations from approximately sea level to 1,835 feet. It is threatened by competition from non-native plants and grazing.	No	Habitat to support this species is absent from the BSA
<i>Atriplex cordulata</i> var. <i>erecticaulis</i> Earlimart orache	-/- 1B.2	This annual herb blooms from August to September, sometimes into November. It occurs in low-lying, sparsely vegetated valley and foothill grasslands and on mounds between vernal pools at elevations between approximately 130 and 330 feet. It is known primarily from the valley floor in Kings, Kern, and Tulare counties and is threatened by vehicles and possibly development and competition from non-native plants.	No	Habitat to support this species is absent from the BSA
<i>Atriplex depressa</i> brittlescale	-/- 1B.2	This is an annual herb that is endemic to California and blooms April to October. It occurs on alkaline and clay soils in chenopod scrub, meadows and seeps, playas, vernal pools, and valley and foothill grassland. It occurs at elevations ranging from sea level to 1,050 feet and is known to occur in	No	Habitat to support this species is absent from the BSA

		Alameda, Contra Costa, Colusa, Fresno, Glenn, Kern, Merced, Solano, Stanislaus, Tulare, and Yolo counties. It is threatened by development, grazing, and trampling; documented on Central Valley floor, foothills, and lower mountains.		
<i>Atriplex minuscula</i> lesser saltscale	-/- 1B.1	This annual herb blooms from May to October. It occurs on alkaline, sandy soils in chenopod scrub, playas, and valley and foothill grassland at elevations between approximately 50 and 655 feet. It has been documented primarily on Central Valley floor, with some lower foothill occurrences. It is threatened by agriculture and solar energy development.	No	Habitat to support this species is absent from the BSA
<i>Atriplex persistens</i> Vernal pool smallscale	-/- 1B.2	This is an annual herb that blooms from June to August, sometimes as late as October. It is restricted to alkaline vernal pools on the floor of the San Joaquin Valley and is endemic to California. It occurs at elevations ranging from approximately 30 to 375 feet and is known to occur in Colusa, Glenn, Madera, Merced, Solano, Stanislaus, and Tulare counties. This species is threatened by agriculture and flood control activities. It is documented primarily on Central Valley floor.	No	Habitat to support this species is absent from the BSA
<i>Atriplex subtilis</i> Subtle orache	-/- 1B.2	This is an annual herb that is endemic to California and blooms June, August, September, and possibly October. It occurs on alkaline soils in valley and foothill grassland habitats. It occurs at elevations ranging from approximately 130 to 330 feet and is known to occur in Butte, Fresno, Kings, Kern, Madera,	No	Habitat to support this species is absent from the BSA

		Merced, Stanislaus, and Tulare counties. This species is threatened by agriculture and possibly solar energy development and is documented primarily on Central Valley floor.		
<i>Caulanthus californicus</i> California jewelflower	FE/SE 1B.1	This annual herb blooms from February to May. It occurs in slightly alkaline, sandy soils in chenopod scrub, valley and foothill grassland, and pinyon and juniper woodland at elevations from approximately 200 to 3,280 feet. It is found in the San Joaquin Valley, Carrizo Plain, and Cuyama Valley from Fresno County south to Santa Barbara County. Many documented occurrences are now presumed extirpated due to development, grazing, and competition from non-native plants.	No	Habitat to support this species is absent from the BSA
<i>Delphinium recurvatum</i> recurved larkspur	-/- 1B.2	This perennial herb blooms from March to June. It occurs in alkaline conditions in chenopod scrub, cismontane woodland, and valley and foothill grassland at elevations from approximately 10 to 2,590 feet. It occurs throughout the Central Valley and Coast Ranges from Butte County southwards. It is threatened by agriculture and competition from non-native plants.	No	Habitat to support this species is absent from the BSA
<i>Delphinium hansenii</i> ssp. <i>Ewanianum</i> Ewan's larkspur	-/- 4.2	This is a perennial herb that blooms from March to May. It occurs on rocky soils in cismontane woodland and valley and foothill grassland. It occurs at elevations ranging from approximately 196 to 1,970 feet. Populations are very local and is documented primarily in Sierra Nevada foothills. This species is threatened by development.	No	Habitat to support this species is absent from the BSA

<p><i>Eryngium spinosepalum</i> Spiny-sepaled button-celery</p>		<p>This annual or perennial herb is endemic to California and blooms from April to June. It occurs in vernal pools and moist areas in valley and foothill grasslands at elevations between 260 and 3,200 feet. It has been documented primarily in the foothills of the Sierra Nevada mountains with scattered occurrences on the Central Valley floor and western foothills and lower mountains. The species is threatened by development, grazing, road maintenance, hydrological alterations, and agriculture.</p>	<p>No</p>	<p>Habitat to support this species is absent from the BSA</p>
<p><i>Euphorbia hooveri</i> Hoover's spurge</p>	<p>-/- 1B.2</p>	<p>This annual herb is endemic to California and blooms from July to September, occasionally into October. It is found in vernal pool habitats at elevations between 80 and 820 feet. There are scattered occurrences of the species throughout the Central Valley, mostly on the valley floor or surrounding foothills. The species is threatened by grazing, agriculture, and non-native plants.</p>	<p>No</p>	<p>Habitat to support this species is absent from the BSA</p>
<p><i>Helianthus winteri</i> Winter's sunflower</p>	<p>-/- 1B.2</p>	<p>This is a perennial shrub that blooms from January to December. It occurs in openings on relatively steep south-facing slopes, granitic, often rocky, roadsides, cismontane woodland, valley and foothill grassland. It is endemic to California and occurs at elevations from approximately 410 to 8,415 feet. It is threatened by grazing, agriculture, road maintenance, and habitat loss.</p>	<p>No</p>	<p>Habitat to support this species is absent from the BSA</p>
<p><i>Hordeum intercedens</i> Vernal barley</p>	<p>-/- 3.2</p>	<p>This is an annual herb that blooms from March to June. It occurs on costal dunes, costal scrub, Valley and foothill grassland (saline flats and</p>	<p>No</p>	<p>Habitat to support this species is absent from the BSA</p>

		depressions), and vernal pools. It occurs at elevations from approximately 15 to 3,280 feet. It is threatened by development, habitat loss, road construction, and non-native plants.		
<i>Imperata brevifolia</i> California satintail		This perennial rhizomatous herb blooms between September and May. It occurs in chaparral, coastal scrub, Mojavean desert scrub, meadows and seeps, and riparian scrub on mesic or alkali soils. It is found at elevations from approximately sea level up to 3,985 feet. The species is threatened by development and agriculture.	No	Habitat to support this species is absent from the BSA
<i>Lasthenia chrysantha</i> Alkali-sink goldfields	-/- 1B.1	This annual herb blooms from February to June. It occurs in alkaline, vernal pool, and wet saline flats habitat at elevations of 330 feet and under.	No	Habitat to support this species is absent from the BSA
<i>Lasthenia glabrata ssp. coulteri</i> Coulter's goldfields	-/- 1B.1	This annual species flowers between February and June. It is found in coastal marshes and swamps, and playas and vernal pools in the interior of California at elevations between sea level and 4,000 feet.	No	Habitat to support this species is absent from the BSA
<i>Orcuttia inaequalis</i> San Joaquin Valley Orcutt grass	-/- 2B.2	This is an annual herb endemic to California that blooms from April to September. It occurs in vernal pools at elevations from approximately 32 to 2,500 feet. It is documented primarily on the eastern Central Valley floor and foothills from Visalia north and is seriously threatened by agricultural, development, overgrazing, channelization, and non-native plants.	No	Habitat to support this species is absent from the BSA
<i>Pseudobahia peirsonii</i> San Joaquin adobe sunburst	-/- 1B.1	This is an annual herb endemic to California that blooms from March to April. It occurs on adobe clay in cismontane woodland and valley and	No	Habitat to support this species is absent from the BSA

		foothill grasslands at elevations from approximately 295 to 2,625 feet. More than half of the known occurrences are in very small areas. It is seriously threatened by agriculture, grazing, development, non-native plants, road construction, and flood control activities and is possibly threatened by road maintenance.		
<i>Puccinellia simplex</i> California alkali grass	FE/SE 1B.1	This is an annual herb that blooms from March to May. It usually occurs on sinks, flats, and lake margins in vernal moist, alkaline conditions of chenopod scrub, meadows and seeps, valley and foothill grassland, and vernal pools. It occurs at elevations from approximately 5 to 3,050 feet. It is threatened by hydrological alterations, urbanization, agricultural conversion, development, and habitat fragmentation, disturbance alteration and loss. It is potentially threatened by solar energy development and is possibly threatened by grazing and proximity to roads.	No	Habitat to support this species is absent from the BSA
<i>Sagittaria sanfordii</i> Sanford's arrowhead	-/- 1B.2	This is an emergent perennial rhizomatous herb endemic to California that blooms from May to October, and sometimes into November. It occurs in sandy loam and clay soils of assorted shallow freshwater marshes and swamps and slow-moving waterways. It occurs at elevations from approximately sea level to 2,130 feet. It is thought to be extirpated from southern California and mostly extirpated from the Central Valley. It is threatened by grazing, development, recreational activities, non-native	No	Habitat to support this species is absent from the BSA

		plants, road widening, and channel alteration and maintenance.		
<b>Invertebrates</b>				
<i>Andrena macswaini</i> An andrenid bee		This bee species occurs in deep sandy soil. It is an oligolectic bee of morning-opening, yellow-flowered species of <i>Camissonia</i> . It is the only species in the subgenus <i>Diandrena</i> with aggregated nests associated with depressions. Distribution ranges from Kern to Madera counties and the Central Valley and adjacent foothills.	No	Habitat to support this species is absent from the BSA. There are no CNDDDB occurrences within 10 miles of the Project.
<i>Bombus crotchii</i> Crotch bumble bee	-/SC -/-	This bee occurs in relatively warm and dry environments, including the inner Coast Range of California and the margins of the Mojave Desert. It inhabits grassland and scrub habitats, where it nests in abandoned rodent burrows, occasionally nesting above ground in tufts of grass, rock piles, or cavities in dead trees. This species is classified as a short-tongued species, whose food plants include <i>Asclepias</i> , <i>Chaenactis</i> , <i>Lupinus</i> , <i>Medicago</i> , <i>Phacelia</i> , and <i>Salvia</i> . The species is threatened by habitat loss and degradation, including agricultural intensification and rapid urbanization.	No	Habitat to support this species is absent from the BSA. There are no recent CNDDDB occurrences within 10 miles of the Project site. There is one CNDDDB occurrence from 1961 Located 3 miles east of the Project site (EONDX 98758).
<i>Branchinecta lynchi</i> vernal pool fairy shrimp	FT/- -/-	Occur a variety of vernal pool habitats that range from small, clear pools to large, turbid and alkaline pools; more common in pools less than 0.05 acre, typically as part of larger vernal pool complexes; adults active from early December to early May; pools must hold water for at least 18 days, the minimum to complete the life cycle if temperatures are optimal; eggs laid in	No	There is no vernal pool habitat to support this species within the BSA.

		spring and persist through dry season as cysts; current California distribution includes the Central Valley and coast ranges; threatened by habitat loss, degradation, and fragmentation, and interference with vernal pool hydrology.		
<i>Desmocerus californicus dimorphus</i> Valley elderberry longhorn beetle	FT/- -/-	This beetle species is closely associated with elderberry shrubs ( <i>Sambucus</i> sp.) for food and reproduction. This species usually occur along rivers and streams and eggs are laid on the bark of elderberry shrubs and larvae hatch and burrow into the stems. Adults eat elderberry leaves and flowers. Stem diameter must be a minimum of one inch and exit holes in stems are the most common methods for identification. This species ranges from southern Shasta County to Fresno County.	No	Habitat to support this species is absent from the BSA. There are no CNDDDB occurrences within 10 miles of the Project.
<i>Talanites moodyae</i> Moody's gnaphosid spider		This arachnid species occurs in leaf litter, in moist coastal habitats and grasslands, generally in serpentine soils, and a nocturnal hunter. This species is endemic to California and has been documented in Fresno and Tulare counties. There is little to no published information on the life history of this species.	No	Habitat to support this species is absent from the BSA. There are no CNDDDB occurrences within 10 miles of the Project.
<i>Lepidurus packardii</i> Vernal pool tadpole shrimp	FE/- -/-	This species occurs in a wide variety of ephemeral wetland habitats ranging from 6.5 square feet to 88 acres in size. The majority of occurrences have been found on high terrace landforms on Redding and Corning soils. This species requires a minimum of 25 days to mature and the average age to reproduction is 54 days. Eggs are laid in	No	There is no vernal pool habitat to support this species within the BSA.

		spring and persist through the dry season as cysts. Its current distribution is in the Central Valley and San Francisco Bay area. This species is threatened by habitat loss, degradation, and fragmentation and interference with vernal pool hydrology.		
<i>Linderiella occidentalis</i> California linderiella		This species is the most widely distributed fairy shrimp in California and can be found in vernal pools from 10.8 square feet to 13 acres supported by most landforms, geologic formations, and soil types. This species requires a minimum of 31 days to maturity with average 43 days to reproduce. Eggs are laid in spring and persist through the dry season as cysts. The current distribution is from the Central Valley and coast ranges. This species is threatened by habitat loss, degradation, fragmentation, and interference with vernal pool hydrology.	No	There is no vernal pool habitat to support this species within the BSA.
<i>Lytta hoppingi</i> Hopping's blister beetle	FC/- -/-	This beetle species occurs in the foothills of the southern end of the Central Valley. Adults have often been found on flowers and have been collected from late March through June. Like other members of the <i>Lytta</i> genus, females excavate shallow burrows to oviposit. <i>Lytta</i> larvae are nest parasites of solitary bees.	No	Habitat to support this species is absent from the BSA. There are no recent CNDDDB occurrences within 10 miles of the Project site. There is one CNDDDB occurrence from the 1900's Located 3 miles east of the Project site (EONDx 8142).
<b>Fish</b>				
<i>Hypomesus transpacificus</i> delta smelt	FT/SE -/-	Small fish endemic to the San Francisco Estuary and the larger Sacramento-San Joaquin Delta; moves between freshwater and low salinity water throughout year; most spawning	No	Habitat to support this species is absent from BSA. There are no CNDDDB records within 10 miles of the Project.

		happens in tidally influenced backwater sloughs and channel edge waters; historical distribution did not extend beyond Mossdale on the San Joaquin River and Sacramento on the Sacramento River.		
<b>Amphibians</b>				
<i>Ambystoma californiense</i> California tiger salamander	FE/ST /-/-	This stocky salamander spends the majority of its life aestivating in upland habitat in abandoned small mammal burrows, such as those of ground squirrels. After a sufficient winter rain event, adults emerge to breed in ephemeral pools or artificial ponds, which must remain inundated for at least 12 weeks for reproductive success. Young hatch as larvae with external gills and feed on benthic invertebrates and smaller tadpoles; adults feed on a variety of terrestrial invertebrates, small fish, and small mammals. Upland habitat typically consists of valley and foothill grasslands but can also include oak woodlands and uncommonly riparian habitats. The species is found in the Central Valley and Central Coast at elevations up to 3,200 feet. Threatened by habitat loss, predation by larger amphibians and fish, and hybridization with other tiger salamander species.	No	Habitat to support this species is absent from BSA. The nearest CNDDDB occurrence is 7 miles northeast of the Project (EOND 7033).
<i>Rana draytonii</i> California red-legged frog	FT/- SSC	Occurs primarily in and near ponds in forests, woodlands, grasslands, coastal scrub, and stream sides with plant cover. Breeding habitat may be permanent or ephemeral. Adults estivate in animal burrows or other moist refuges when aquatic habitat is	No	There is no suitable breeding habitat within or near the BSA. There are no CNDDDB records within 10 miles of the Project.

		dry, up to several miles from an aquatic resource. It is found throughout coastal California from Mendocino County south. Its inland distribution includes the northern Sacramento Valley and the foothills of the Sierra Nevada south to Tulare County (possibly Kern County) at elevations up to 5,000 feet.		
<i>Lithobates pipiens</i> Northern leopard frog	-/- SSC	This is a highly aquatic frog that occurs in quiet aquatic habitats with permanent or semi-permanent water in a variety of upland habitats. Shoreline cover and/or presence of submerged and emergent vegetation is an important factor in habitat suitability. Individuals may travel a mile or more from a water body over upland habitat to disperse and to forage. The species is uncommon and localized in California, breeding in emergent wetlands in Modoc County and possibly eastern Lassen County and along the Colorado River and irrigated areas in Imperial, Tulare, and Kern Counties, at elevations up to 7,000 feet. There are suspected introduced populations within the Central Valley.	No	Habitat to support this species is absent from BSA. The nearest CNDDDB occurrence is 8.6 miles northeast of the Project (EONDX 74694).
<i>Spea hammondi</i> western spadefoot	-/- SSC	This species is found primarily in grasslands, sometimes valley-foothill woodlands, chaparral, and alkali flats, throughout the Central Valley and its foothills and the Coast Ranges, at elevations from sea level up to 4,460 feet. Spadefoot toads spend the majority of their lives underground in self-constructed burrows or rodent burrows. They emerge in late winter or spring after rainfall to breed in	No	Breeding habitat to support this species is absent from BSA. The nearest CNDDDB occurrence is approximately 2.5 miles south of the Project (EONDX 55262), found in 2004.

		ephemeral pools or other shallow bodies of water.		
<b>Reptiles</b>				
<i>Actinemys [=Emys] marmorata</i> western pond turtle	-/- SSC	Highly aquatic and diurnally active; found in ponds, lakes, rivers, streams, creeks, marshes, and irrigation ditches with vegetation and rocky/muddy bottoms; wide variety of habitats; need basking areas near water (logs, rocks, vegetation mats, banks); may enter brackish water and even seawater; digs nest on land near water; range from north of San Francisco Bay area south, including Central Valley.	No	Suitable habitat is absent from the BSA.
<i>Gambelia silus [=sila]</i> blunt-nosed leopard lizard	FE/SE SFP	This species occurs in semiarid habitats within the southern Central Valley and Cuyama Valley. Occupied habitats are flat and have large open areas with scattered shrubs for refuge. Blunt-nosed leopard lizards use small mammal burrows for shelter and spend most of the year underground, surfacing in spring or early summer to breed and forage. Hatchlings emerge in late summer through the fall to forage and may interbreed with long-nosed leopard lizard in Cuyama Valley. The species is threatened by habitat loss and fragmentation, and drought. It is usually found at elevations between 100 and 2,400 feet.	No	Suitable habitat is absent from the BSA. There are no CNDDDB occurrences within 10 miles of the project site.
<i>Anniella pulchra</i> Northern California legless lizard	-/- SSC	This secretive species burrows in moist, warm, loose soils with sparse vegetation in areas of beach dunes, chaparral, pine-oak woodlands, desert scrub, sandy washes, and stream terraces with sycamores, cottonwoods,	No	Suitable habitat is absent from the BSA. The nearest CNDDDB occurrence is from 1934 and is located 2 miles east of the Project site (EOND 107010).

		or oaks. Individuals can be found under leaf litter from trees and shrubs or under objects such as rocks, boards, driftwood, and logs. Soil moisture is an important characteristic of suitable habitat. Breeding occurs between early spring and July, with live young born between September and November.		
<i>Thamnophis gigas</i> giant gartersnake	FT/ST -/-	Highly aquatic snake found in marshes and sloughs, drainage canals, and irrigation ditches; prefers vegetation close to water for basking; does not venture more than 200 feet from aquatic habitat; elevation from sea level to 400 feet; endemic to California; currently ranges from Glenn County to southern edge of San Francisco Bay Delta, and from Merced County to northern Fresno County.	No	Habitat to support this species is absent from the BSA. There are no CNDDDB occurrences within 10 miles of the Project.
<b>Birds</b>				
<i>Agelaius tricolor</i> tricolored blackbird	-/ST -/-	Colonial breeder that prefers freshwater, emergent wetlands with tall, dense cattails or tules, but also thickets of willow, blackberry, wild rose, and tall herbs; breeding colonies composed of a minimum of 50 pairs; forages in pastures, grain fields, and similar habitats near breeding areas.	No	Habitat to support this species is absent from the BSA. There are no CNDDDB occurrences within 10 miles of the Project.
<i>Athene cunicularia</i> burrowing owl	-/ SSC	Occupies variety of open, semi-arid to arid habitats throughout central and southern California, including desert regions; prefers open habitats with few shrubs or trees; most active around sunrise and sunset; utilizes burrows constructed by mammals year-round for shelter and nesting; well documented in urban areas where patches of undeveloped areas are	Yes	There is suitable foraging and nesting habitat for this species within the BSA, although no individuals or sign of the species were observed during the survey. The nearest CNDDDB occurrence is from 1998, approximately 5.6 miles northwest of the Project (EONDX 35403).

		present (e.g., canals, airports, drainage basins), and in areas of dense agricultural development where, particularly where canals provide burrow habitat; forages primarily for rodents and insects within several miles of burrow, usually in open grassy habitats if available; has been observed hunting bats and insects around parking lot lights; threats include development resulting in habitat loss/fragmentation.		
<i>Buteo swainsoni</i> Swainson's hawk	-/ST -/-	Occurs in grassland, desert and agricultural landscapes in the Central Valley and Antelope Valley; hawks may be resident or migrant; breeds in stands with few trees in juniper-sage flats, riparian areas, and oak savannah; also observed breeding in large eucalyptus trees along freeways and in trees over rural residences surrounded by agriculture; may nest on ground if no suitable trees are available; nests are platform of sticks, bark, and fresh leaves at or near top of trees; breeds from late March to late August; forages in grassland, open scrub, and grain fields, primarily for rodents.	Yes	There is suitable foraging habitat throughout the BSA. There are suitable nesting trees within 0.5-mile of the Project. No individuals or sign of the species were observed during the survey. The most recent, nearest CNDDDB occurrence was in 2017, approximately 1.2 mile west of the Project (EONDX 109959). A stick nest with chick was observed in an oak tree adjacent to agricultural fields.
<i>Coccyzus americanus occidentalis</i> Western yellow-billed cuckoo	FT/SE	This migratory species nests in open riparian woodlands along broad lower flood bottoms of larger river systems. It prefers willows, often mixed with cottonwood, with understory of blackberry, nettles or wild grape. Its nest is most often placed in willows with cottonwoods used extensively for foraging and also occasionally nests in orchards adjacent to river bottoms.	No	Habitat to support this species is not present within the BSA. No CNDDDB occurrences are present within 10 miles of the Project site.

<i>Lanius ludovicianus</i> Loggerhead shrike	-/- SSC	Common resident in lowlands and foothills throughout California; prefers open grassland/pasture habitats with scattered trees, fence posts, utility lines, shrubs, and other perches; primarily consumes large insects but will predator other small animals; nests in densely foliated shrub or tree less than 50 feet above ground.	No	Habitat to support this species is not present within the BSA. There is one CNDDDB occurrence within 10 miles of the project site from 1992 located 6.7 miles north of the Project site (EONDX 87281).
<i>Chlidonias niger</i> Black tern	-/- SSC	This is a small dark tern of freshwater marshes and lakes. Frequents freshwater lakes, rivers, and other interior wetlands during spring and fall migration. In winter black terns are largely marine.	No	Habitat to support this species is not present within the BSA. No CNDDDB occurrences are present within 10 miles of the Project site.
<i>Aechmophorus clarkii</i> Clark's grebe	-/- -/-	This is a large water bird that is rarely found away from aquatic habitats. Most of California, except for the coast, can be a breeding ground for the species if freshwater is nearby. It creates floating nests in large freshwater lakes and marshes with emergent vegetation (i.e. reeds and rushes). It forages for fish, salamanders, crustaceans, marine worms, and aquatic insects and larvae.	No	Habitat to support this species is not present within the BSA. No CNDDDB occurrences are present within 10 miles of the Project site.
<i>Picoides nuttallii</i> Nuttall's woodpecker	-/- -/-	A California year-round resident in oak woodlands at elevation ranges between 984 to 5,577 feet. They forage on beetles, beetle larvae, ants, termites found on oaks, cottonwood, and willow. Occasionally, they eat fruit from poison oak, blackberry, and elderberry. Nests are created in holes of dead trunks or limbs of willows, cottonwoods, sycamores, oaks, and alder.	No	Project site is below known elevation range for this species. No CNDDDB occurrences are present within 10 miles of the Project site.
<i>Baeolophus inornatus</i> Oak titmouse	-/- -/-	This species lives in a restricted range, from southwest Oregon to northwest Baja California. They occur in warm, open, dry oak or oak-pine woodlands	No	Project site is outside the known range for this species. No CNDDDB occurrences are present within 10 miles of the Project site.

		using scrub oaks or other brush within distance of woodlands. They eat seeds, other plant materials, insects, and invertebrates. The nest is built in a tree cavity up to 40 feet off the ground, occasionally they will use a nest box.		
<b>Mammals</b>				
<i>Antrozous pallidus</i> Pallid bat	-/- SSC	Occurs throughout California in wide variety of habitats: grasslands, shrublands, woodlands, forests up through mixed conifer; most common in open, dry habitats with rocky areas for roosting; yearlong resident; feeds mainly on insects and arachnids on the ground or by gleaning; day roosts in caves, crevices, mines, and occasionally hollow trees and buildings, including bridges; night roosts in more open sites; maternity colonies form early April with young flying by July or August; needs water; very sensitive to disturbance of roosting sites.	No	This species may forage within the BSA but there is no suitable roosting habitat. This species was not observed during the survey. There are no CNDDDB occurrences within 10 miles of the Project.
<i>Dipodomys nitratoides exilis</i> Fresno kangaroo rat	FE/SE -/-	This is a subspecies of the San Joaquin kangaroo rat ( <i>Dipodomys nitratoides</i> ) that occurs on bare alkaline clay-based soils typically within alkali desert scrub and open grassland. Historically, this species occurred on the valley floor in Kings, Fresno, Madera, and Merced counties, but may be extirpated within most of the historical range. This species is nocturnal that excavates burrows for temperature regulation, litter-rearing, shelter, and escape from predators typically with tunnels approximately 12 to 15 inches below ground. It eats seeds of annual forbs	No	Habitat to support this species is not present within the BSA. No CNDDDB occurrences are present within 10 miles of the Project site.

		and grasses. It is threatened by predation and disease.		
<i>Dipodomys nitratooides nitratooides</i> Tipton kangaroo rat	FE/SE -/-	Inhabits valley saltbush scrub, valley sink scrub, and grasslands; historical known to occur in the southern San Joaquin Valley from southern margins on Tulare lake bed near Lemoore and Hanford, and on the valley floor in Tulare and Kern counties; found only east of the California Aqueduct; population distribution is not continuous and occurs only in small isolated patches; nocturnal foraging species; burrows used for temperature regulation, litter-rearing, shelter, and escape from predators; threatened by habitat loss, fragmentation, degradation; also threatened by land conversions to agricultural, industrial, and urban developments; can quickly inhabit fallow ag fields if a source population is nearby.	No	Habitat to support this species is not present within the BSA. No CNDDDB occurrences are present within 10 miles of the Project site.
<i>Eumops perotis californicus</i> Western mastiff bat	-/- SSC	This species occurs in open, semi-arid to arid habitats throughout southeastern San Joaquin Valley and Coast Ranges from Monterey County southward. It can also occur in urban areas. It feeds on insects captured in flight and roosts in cliff faces, high buildings, trees, and tunnels. The maternity season begins in March with young typically volant by September. Nursery roosts most often occur in tight rock crevices or crevices in buildings.	No	This species may forage within the BSA but there is no suitable roosting habitat. This species was not observed during the survey. The nearest CNDDDB occurrence is 4 miles southeast of the Project site (EONDX 61278).
<i>Taxidea taxus</i> American badger	-/- SSC	This species occurs mostly in open, drier stages of shrub, forest, and herbaceous habitats, with friable soils. It feeds mostly on fossorial rodents. It	No	Habitat to support this species is not present within the BSA. There is one CNDDDB occurrence within 10 miles of the Project site from 1994 located 9.9

		digs burrows for cover and reproduction and can dig a new den each night. Litters are typically born in March and April. This species can be somewhat tolerant of human activities but generally avoids cultivated agricultural habitats.		miles from the Project site (EONDX 56600).
<i>Vulpes macrotis mutica</i> San Joaquin kit fox	FE/ST	This fox species is endemic to the Central Valley and primarily occurs in arid to semi-arid grasslands, open shrublands, savannahs, and grazed lands with loose-textured soils within the San Joaquin Valley, Carrizo Plain, Salinas Valley, Cuyama Valley, and other small valleys in western foothills. Intensively maintained agricultural areas are typically avoided. It is highly adaptable and documented in urban developed areas. It uses burrows year-round for shelter, escape from predators, and rearing young and it will use man-made structures, such as pipes, for denning. Kit fox feed primarily on small mammals, but will also consume birds, reptiles, insects, and scavenge for human food. It is threatened by habitat loss and fragmentation, vehicle strikes, and disease such as the current mange outbreak in urban population in Bakersfield and in nearby natural areas.	Yes	Species may be a transient forager in the vicinity and may potentially become established in the annual grassland habitat. No potential dens and very few burrows that would provide a prey base were identified on site during the survey. There are multiple CNDDDB occurrences within 10 miles of the Project site. The most recent from 2003 is 3.4 miles northwest of the Project site (EONDX 55307).

CRPR (California Rare Plant Rank):

- 1A Presumed Extinct in California
- 1B Rare, Threatened, or Endangered in California and elsewhere
- 2A Plants presumed extirpated in California, but more common elsewhere
- 2B Plants Rare, Threatened, or Endangered in California, but more common elsewhere

CRPR Threat Code Extension:

- FE Federally Endangered
- FT Federally Threatened
- FC Federal Candidate Species
- FS Federally Sensitive
- SE State Endangered
- ST State Threatened
- SC State Candidate
- SS State Sensitive

- |    |   |     |                                  |
|----|---|-----|----------------------------------|
| .1 | Seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat) | SSC | State Species of Special Concern |
| .2 | Fairly endangered in California (20-80% occurrences threatened)   | SFP | State Fully Protected            |
| .3 | Not very endangered in California (<20% of occurrences threatened)  | SR  | State Rare                       |
|    |   | WL  | Watch List                       |

**APPENDIX E**

***U.S. FISH AND WILDLIFE SERVICE STANDARDIZED RECOMMENDATIONS FOR PROTECTION OF  
THE ENDANGERED SJKF PRIOR TO OR DURING GROUND DISTURBANCE***

**U.S. FISH AND WILDLIFE SERVICE  
STANDARDIZED RECOMMENDATIONS  
FOR PROTECTION OF THE ENDANGERED SAN JOAQUIN KIT FOX  
PRIOR TO OR DURING GROUND DISTURBANCE**

Prepared by the Sacramento Fish and Wildlife Office  
January 2011

## INTRODUCTION

The following document includes many of the San Joaquin kit fox (*Vulpes macrotis mutica*) protection measures typically recommended by the U. S. Fish and Wildlife Service (Service), prior to and during ground disturbance activities. **However, incorporating relevant sections of these guidelines into the proposed project is not the only action required under the Endangered Species Act of 1973, as amended (Act) and does not preclude the need for section 7 consultation or a section 10 incidental take permit for the proposed project.** Project applicants should contact the Service in Sacramento to determine the full range of requirements that apply to your project; the address and telephone number are given at the end of this document. Implementation of the measures presented in this document may be necessary to avoid violating the provisions of the Act, including the prohibition against "take" (defined as killing, harming, or harassing a listed species, including actions that damage or destroy its habitat). These protection measures may also be required under the terms of a biological opinion pursuant to section 7 of the Act resulting in incidental take authorization (authorization), or an incidental take permit (permit) pursuant to section 10 of the Act. The specific measures implemented to protect kit fox for any given project shall be determined by the Service based upon the applicant's consultation with the Service.

The purpose of this document is to make information on kit fox protection strategies readily available and to help standardize the methods and definitions currently employed to achieve kit fox protection. The measures outlined in this document are subject to modification or revision at the discretion of the Service.

## IS A PERMIT NECESSARY?

**Certain acts need a permit from the Service which includes destruction of any known (occupied or unoccupied) or natal/pupping kit fox dens.** Determination of the presence or absence of kit foxes and /or their dens should be made during the environmental review process.

All surveys and monitoring described in this document must be conducted by a qualified biologist and these activities do not require a permit. A qualified biologist (biologist) means any person who has completed at least four years of university training in wildlife biology or a related science and/or has demonstrated field experience in the identification and life history of the San Joaquin kit fox. In addition, the biologist(s) must be able to identify coyote, red fox,

gray fox, and kit fox tracks, and to have seen a kit fox in the wild, at a zoo, or as a museum mount. Resumes of biologists should be submitted to the Service for review and approval prior to any survey or monitoring work occurring.

### **SMALL PROJECTS**

Small projects are considered to be those projects with small foot prints, of approximately one acre or less, such as an individual in-fill oil well, communication tower, or bridge repairs. These projects must stand alone and not be part of, or in any way connected to larger projects (i.e., bridge repair or improvement to serve a future urban development). The Service recommends that on these small projects, the biologist survey the proposed project boundary and a 200-foot area outside of the project footprint to identify habitat features and utilize this information as guidance to situate the project to minimize or avoid impacts. If habitat features cannot be completely avoided, then surveys should be conducted and the Service should be contacted for technical assistance to determine the extent of possible take.

Preconstruction/preactivity surveys shall be conducted no less than 14 days and no more than 30 days prior to the beginning of ground disturbance and/or construction activities or any project activity likely to impact the San Joaquin kit fox. Kit foxes change dens four or five times during the summer months, and change natal dens one or two times per month (Morrell 1972). Surveys should identify kit fox habitat features on the project site and evaluate use by kit fox and, if possible, assess the potential impacts to the kit fox by the proposed activity. The status of all dens should be determined and mapped (see Survey Protocol). Written results of preconstruction/preactivity surveys must be received by the Service within five days after survey completion and prior to the start of ground disturbance and/or construction activities.

**If a natal/pupping den is discovered within the project area or within 200-feet of the project boundary, the Service shall be immediately notified and under no circumstances should the den be disturbed or destroyed without prior authorization. If the preconstruction/preactivity survey reveals an active natal pupping or new information, the project applicant should contact the Service immediately to obtain the necessary take authorization/permit.**

If the take authorization/permit has already been issued, then the biologist may proceed with den destruction within the project boundary, except natal/pupping den which may not be destroyed while occupied. A take authorization/permit is required to destroy these dens even after they are vacated. Protective exclusion zones can be placed around all known and potential dens which occur outside the project footprint (conversely, the project boundary can be demarcated, see den destruction section).

## OTHER PROJECTS

It is likely that all other projects occurring within kit fox habitat will require a take authorization/permit from the Service. This determination would be made by the Service during the early evaluation process (see Survey Protocol). These other projects would include, but are not limited to: Linear projects; projects with large footprints such as urban development; and projects which in themselves may be small but have far reaching impacts (i.e., water storage or conveyance facilities that promote urban growth or agriculture, etc.).

The take authorization/permit issued by the Service may incorporate some or all of the protection measures presented in this document. The take authorization/permit may include measures specific to the needs of the project and those requirements supersede any requirements found in this document.

## EXCLUSION ZONES

In order to avoid impacts, construction activities must avoid their dens. The configuration of exclusion zones around the kit fox dens should have a radius measured outward from the entrance or cluster of entrances due to the length of dens underground. The following distances are **minimums**, and if they cannot be followed the Service must be contacted. Adult and pup kit foxes are known to sometimes rest and play near the den entrance in the afternoon, but most above-ground activities begin near sunset and continue sporadically throughout the night. Den definitions are attached as Exhibit A.

Potential den**	50 feet
Atypical den**	50 feet
Known den*	100 feet
Natal/pupping den (occupied <u>and</u> unoccupied)	Service must be contacted

**\*Known den:** To ensure protection, the exclusion zone should be demarcated by fencing that encircles each den at the appropriate distance and does not prevent access to the den by kit foxes. Acceptable fencing includes untreated wood particle-board, silt fencing, orange construction fencing or other fencing as approved by the Service as long as it has openings for kit fox ingress/egress and keeps humans and equipment out. Exclusion zone fencing should be maintained until all construction related or operational disturbances have been terminated. At that time, all fencing shall be removed to avoid attracting subsequent attention to the dens.

**\*\*Potential and Atypical dens:** Placement of 4-5 flagged stakes 50 feet from the den entrance(s) will suffice to identify the den location; fencing will not be required, but the exclusion zone must be observed.

Only essential vehicle operation on existing roads and foot traffic should be permitted. Otherwise, all construction, vehicle operation, material storage, or any other type of surface-disturbing activity should be prohibited or greatly restricted within the exclusion zones.

### **DESTRUCTION OF DENS**

Limited destruction of kit fox dens may be allowed, if avoidance is not a reasonable alternative, provided the following procedures are observed. The value to kit foxes of potential, known, and natal/pupping dens differ and therefore, each den type needs a different level of protection.

**Destruction of any known or natal/pupping kit fox den requires take authorization/permit from the Service.**

Destruction of the den should be accomplished by careful excavation until it is certain that no kit foxes are inside. The den should be fully excavated, filled with dirt and compacted to ensure that kit foxes cannot reenter or use the den during the construction period. If at any point during excavation, a kit fox is discovered inside the den, the excavation activity shall cease immediately and monitoring of the den as described above should be resumed. Destruction of the den may be completed when in the judgment of the biologist, the animal has escaped, without further disturbance, from the partially destroyed den.

**Natal/pupping dens:** Natal or pupping dens which are occupied will not be destroyed until the pups and adults have vacated and then only after consultation with the Service. Therefore, project activities at some den sites may have to be postponed.

**Known Dens:** Known dens occurring within the footprint of the activity must be monitored for three days with tracking medium or an infra-red beam camera to determine the current use. If no kit fox activity is observed during this period, the den should be destroyed immediately to preclude subsequent use.

If kit fox activity is observed at the den during this period, the den should be monitored for at least five consecutive days from the time of the observation to allow any resident animal to move to another den during its normal activity. Use of the den can be discouraged during this period by partially plugging its entrances(s) with soil in such a manner that any resident animal can escape easily. Only when the den is determined to be unoccupied may the den be excavated under the direction of the biologist. If the animal is still present after five or more consecutive days of plugging and monitoring, the den may have to be excavated when, in the judgment of a biologist, it is temporarily vacant, for example during the animal's normal foraging activities.

**The Service encourages hand excavation, but realizes that soil conditions may necessitate the use of excavating equipment. However, extreme caution must be exercised.**

Potential Dens: If a take authorization/permit has been obtained from the Service, den destruction may proceed without monitoring, unless other restrictions were issued with the take authorization/permit. If no take authorization/permit has been issued, then potential dens should be monitored as if they were known dens. If any den was considered to be a potential den, but is later determined during monitoring or destruction to be currently, or previously used by kit fox (e.g., if kit fox sign is found inside), then all construction activities shall cease and the Service shall be notified immediately.

### **CONSTRUCTION AND ON-GOING OPERATIONAL REQUIREMENTS**

Habitat subject to permanent and temporary construction disturbances and other types of ongoing project-related disturbance activities should be minimized by adhering to the following activities. Project designs should limit or cluster permanent project features to the smallest area possible while still permitting achievement of project goals. To minimize temporary disturbances, all project-related vehicle traffic should be restricted to established roads, construction areas, and other designated areas. These areas should also be included in preconstruction surveys and, to the extent possible, should be established in locations disturbed by previous activities to prevent further impacts.

1. Project-related vehicles should observe a daytime speed limit of 20-mph throughout the site in all project areas, except on county roads and State and Federal highways; this is particularly important at night when kit foxes are most active. Night-time construction should be minimized to the extent possible. However if it does occur, then the speed limit should be reduced to 10-mph. Off-road traffic outside of designated project areas should be prohibited.
2. To prevent inadvertent entrapment of kit foxes or other animals during the construction phase of a project, all excavated, steep-walled holes or trenches more than 2-feet 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 Service and the California Department of Fish and Game (CDFG) shall be contacted as noted under measure 13 referenced below.
3. Kit foxes are attracted to den-like structures such as pipes and may enter stored pipes and become trapped or injured. All construction pipes, culverts, or similar structures with a diameter of 4-inches or greater that are stored at a construction site for one or more overnight periods should be thoroughly inspected for kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a kit fox is

- discovered inside a pipe, that section of pipe should not be moved until the Service 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.
4. 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.
  5. No firearms shall be allowed on the project site.
  6. No pets, such as dogs or cats, should be permitted on the project site to prevent harassment, mortality of kit foxes, or destruction of dens.
  7. Use of rodenticides and herbicides in project areas 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.
  8. A representative shall 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 Service.
  9. An employee education program should be conducted for any project that has anticipated impacts to kit fox or other endangered species. The program should consist of a brief presentation by persons knowledgeable in kit fox biology and legislative protection to explain endangered species concerns to contractors, their employees, and military and/or agency personnel involved in the project. The program should include the following: A description of the San Joaquin kit fox and its habitat needs; a report of the occurrence of kit fox in the project area; an explanation of the status of the species and its protection under the Endangered Species Act; 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.
  10. Upon completion of the project, all areas subject to temporary ground disturbances, including storage and staging areas, temporary roads, pipeline corridors, etc. should be

re-contoured if necessary, and revegetated to promote restoration of the area to pre-project conditions. An area subject to "temporary" disturbance means any area that is disturbed during the project, but after project completion will not be subject to further disturbance and has the potential to be revegetated. Appropriate methods and plant species used to revegetate such areas should be determined on a site-specific basis in consultation with the Service, California Department of Fish and Game (CDFG), and revegetation experts.

11. In the case of trapped animals, escape ramps or structures should be installed immediately to allow the animal(s) to escape, or the Service should be contacted for guidance.
12. Any contractor, employee, or military or agency personnel who are responsible for inadvertently killing or injuring a San Joaquin kit fox shall immediately report the incident to their representative. This representative shall contact the CDFG immediately in the case of a dead, injured or entrapped kit fox. The CDFG contact for immediate assistance is State Dispatch at (916)445-0045. They will contact the local warden or Mr. Paul Hoffman, the wildlife biologist, at (530)934-9309. The Service should be contacted at the numbers below.
13. The Sacramento Fish and Wildlife Office and CDFG shall 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. The Service contact is the Chief of the Division of Endangered Species, at the addresses and telephone numbers below. The CDFG contact is Mr. Paul Hoffman at 1701 Nimbus Road, Suite A, Rancho Cordova, California 95670, (530) 934-9309.
14. New sightings of kit fox shall be reported to the California Natural Diversity Database (CNDDDB). A copy of the reporting form and a topographic map clearly marked with the location of where the kit fox was observed should also be provided to the Service at the address below.

Any project-related information required by the Service or questions concerning the above conditions or their implementation may be directed in writing to the U.S. Fish and Wildlife Service at:

Endangered Species Division  
2800 Cottage Way, Suite W2605  
Sacramento, California 95825-1846  
(916) 414-6620 or (916) 414-6600

**EXHIBIT "A" - DEFINITIONS**

"Take" - Section 9 of the Endangered Species Act of 1973, as amended (Act) prohibits the "take" of any federally listed endangered species by any person (an individual, corporation, partnership, trust, association, etc.) subject to the jurisdiction of the United States. As defined in the Act, take means " . . . to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct". Thus, not only is a listed animal protected from activities such as hunting, but also from actions that damage or destroy its habitat.

"Dens" - San Joaquin kit fox dens may be located in areas of low, moderate, or steep topography. Den characteristics are listed below, however, the specific characteristics of individual dens may vary and occupied dens may lack some or all of these features. Therefore, caution must be exercised in determining the status of any den. Typical dens may include the following: (1) one or more entrances that are approximately 5 to 8 inches in diameter; (2) dirt berms adjacent to the entrances; (3) kit fox tracks, scat, or prey remains in the vicinity of the den; (4) matted vegetation adjacent to the den entrances; and (5) manmade features such as culverts, pipes, and canal banks.

"Known den" - Any existing natural den or manmade structure that is used or has been used at any time in the past by a San Joaquin kit fox. Evidence of use may include historical records, past or current radiotelemetry or spotlighting data, kit fox sign such as tracks, scat, and/or prey remains, or other reasonable proof that a given den is being or has been used by a kit fox. The Service discourages use of the terms "active" and "inactive" when referring to any kit fox den because a great percentage of occupied dens show no evidence of use, and because kit foxes change dens often, with the result that the status of a given den may change frequently and abruptly.

"Potential Den" - Any subterranean hole within the species' range that has entrances of appropriate dimensions for which available evidence is insufficient to conclude that it is being used or has been used by a kit fox. Potential dens shall include the following: (1) any suitable subterranean hole; or (2) any den or burrow of another species (e.g., coyote, badger, red fox, or ground squirrel) that otherwise has appropriate characteristics for kit fox use.

"Natal or Popping Den" - Any den used by kit foxes to whelp and/or rear their pups. Natal/pupping dens may be larger with more numerous entrances than dens occupied exclusively by adults. These dens typically have more kit fox tracks, scat, and prey remains in the vicinity of the den, and may have a broader apron of matted dirt and/or vegetation at one or more entrances. A natal den, defined as a den in which kit fox pups are actually whelped but not necessarily reared, is a more restrictive version of the pupping den. In practice, however, it is difficult to distinguish between the two, therefore, for purposes of this definition either term applies.

"Atypical Den" - Any manmade structure which has been or is being occupied by a San Joaquin kit fox. Atypical dens may include pipes, culverts, and diggings beneath concrete slabs and buildings.