

Appendix B

Biological Evaluation



LIVE OAK ASSOCIATES, INC.

an Ecological Consulting Firm

**BIOLOGICAL EVALUATION FOR CEQA COMPLIANCE
RAINBOW XI WATER BANK PROJECT
TULARE COUNTY, CALIFORNIA**

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EXECUTIVE SUMMARY

Live Oak Associates, Inc. (LOA) conducted a biological resources investigation of an approximately 50-acre site proposed for the development of the Rainbow XI Water Bank Project, and evaluated likely impacts to such resources resulting from project implementation. The project will utilize existing and proposed infrastructure to bank surplus water from the Porterville Irrigation District (PID) and other sources, and recover it, during dry periods, through PID wells and/or pump-back into the Friant-Kern Canal and Tule River Intertie. The site is located approximately 2 miles southwest of Porterville city limits in rural Tulare County, California.

On June 2 and August 4, 2020, LOA ecologist Jeff Gurule surveyed the project site for its biotic habitats, the plants and animals occurring in those habitats, and significant habitat values that may be protected by state and federal law. At the time of the surveys, the project site consisted of existing recharge basins and agricultural lands. Four land uses/biotic habitats were identified within the project site: agricultural field, orchard, recharge basin, and ruderal. The site is situated within a matrix of agricultural and residential uses.

Construction and certain operations and maintenance activities have the potential to result in mortality of the San Joaquin kit fox and mortality/disturbance of burrowing owls and nesting migratory birds and raptors including the tricolored blackbird, should individuals of any of these species be present at the time of construction. Construction and certain operations and maintenance activities may also disturb Swainson's hawks, should they nest in close proximity to the site; however, nesting habitat for this species is absent from the site itself. These impacts, if they occur, would be considered significant under the California Environmental Quality Act (CEQA). Project avoidance of active nests and dens identified during preconstruction surveys and implementation of minimization measures consistent with the USFWS 2011 *Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance* will reduce the magnitude of these potential impacts to a less than significant level under CEQA.

No other biological resources would be significantly impacted by the project as defined by CEQA. Impacts associated with project development and operation would be less than significant for all locally occurring special status plant species, eight special status animals absent from or unlikely to use the project site, four special status animals that would use the site for foraging only, wildlife movement corridors, jurisdictional waters and wetlands, designated critical habitat, sensitive natural communities, and other sensitive habitats. Loss of habitat for special status animal species is not considered a significant impact of the project under CEQA. The project does not appear to conflict with the goals and policies of the Tulare County General Plan, or with any other local policies.

TABLE OF CONTENTS

EXECUTIVE SUMMARY	I
1.0 INTRODUCTION	1
1.1 PROJECT DESCRIPTION	1
1.2 REPORT OBJECTIVES	6
1.3 STUDY METHODOLOGY	6
2.0 EXISTING CONDITIONS	8
2.1 REGIONAL SETTING	8
2.2 PROJECT SITE	9
2.3 LAND USES/BIOTIC HABITATS	9
2.3.1 Agricultural Field.....	9
2.3.2 Orchard	11
2.3.3 Recharge Basin	12
2.3.4 Ruderal.....	13
2.4 SPECIAL STATUS PLANTS AND ANIMALS.....	14
2.5 JURISDICTIONAL WATERS	23
2.6 SENSITIVE NATURAL COMMUNITIES.....	24
2.7 WILDLIFE MOVEMENT CORRIDORS	24
2.8 DESIGNATED CRITICAL HABITAT	25
3.0 IMPACTS AND MITIGATIONS	26
3.1 SIGNIFICANCE CRITERIA	26
3.2 RELEVANT GOALS, POLICIES, AND LAWS	27
3.2.1 General Plan Policies of County of Tulare	27
3.2.2 Habitat Conservation Plans and Natural Community Conservation Plans.....	28
3.2.3 Threatened and Endangered Species	28
3.2.4 California Fully Protected Species	29
3.2.5 Migratory Birds.....	29
3.2.6 Birds of Prey	30
3.2.7 Nesting Birds	30
3.2.8 Wetlands and Other Jurisdictional Waters.....	30
3.3 POTENTIALLY SIGNIFICANT PROJECT IMPACTS/MITIGATION	34

3.3.1 Project-Related Mortality of the San Joaquin Kit Fox	34
3.3.2 Project-Related Mortality/Disturbance of the Burrowing Owl.....	36
3.3.3 Project-Related Disturbance of Nesting Swainson’s Hawks.....	37
3.3.4 Project-Related Mortality/Disturbance of Other Nesting Birds and Raptors Including the Tricolored Blackbird.....	38
3.4 LESS THAN SIGNIFICANT PROJECT IMPACTS	39
3.4.1 Project Impacts to Special Status Plants.....	39
3.4.2 Project Impacts to Special Status Animal Species Absent from or Unlikely to Occur on the Project Site.....	40
3.4.3 Project-Related Mortality of Special Status Animal Species that May Occur on the Project Site as Occasional or Regular Foragers but Breed Elsewhere	40
3.4.4 Loss of Habitat for Special Status Animals that Could Occur on Site	41
3.4.5 Project Impacts to Wildlife Movement Corridors	41
3.4.6 Project Impacts to Jurisdictional Waters and Wetlands	41
3.4.7 Project Impacts to Designated Critical Habitat and Sensitive Natural Communities.....	42
3.4.8 Local Policies or Habitat Conservation Plans.....	42
LITERATURE REFERENCED.....	43
APPENDIX A: VASCULAR PLANTS OF THE PROJECT SITE.....	45
APPENDIX B: TERRESTRIAL VERTEBRATE SPECIES THAT POTENTIALLY OCCUR ON THE PROJECT SITE.....	48
APPENDIX C: SELECTED PHOTOGRAPHS OF THE PROJECT SITE	54
APPENDIX D: USFWS 2011 STANDARDIZED RECOMMENDATIONS FOR THE PROTECTION OF THE ENDANGERED SAN JOAQUIN KIT FOX PRIOR TO OR DURING GROUND DISTURBANCE.....	59

1.0 INTRODUCTION

Setton Pistachio of Terra Bella, Inc. (Setton) proposes to develop a groundwater recharge facility (“project”) utilizing a combination of existing and proposed infrastructure spanning approximately 50 acres (“project site”) in rural Tulare County, California. The technical report that follows describes the biotic resources of the project site, and evaluates possible impacts to sensitive biological resources that could result from project implementation. The proposed project site is located in southwest Tulare County, approximately 2 miles southwest of Porterville city limits (Figure 1). The project site can be found on the *Porterville* U.S. Geological Survey (USGS) 7.5-minute quadrangle in Section 1 of Township 22 South, Range 26 East and Section 6 of Township 22 South, Range 27 East, Mount Diablo Base and Meridian (Figure 2).

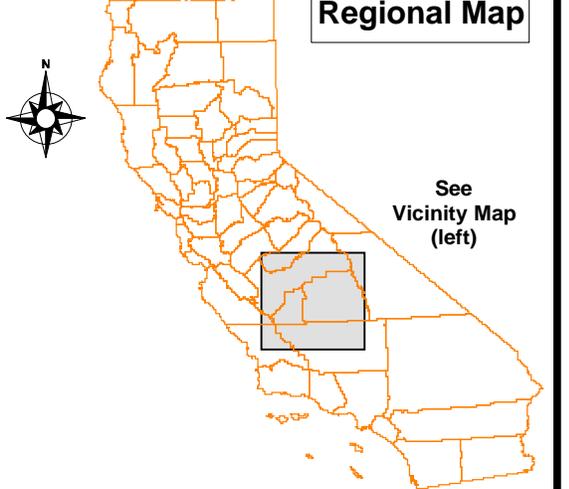
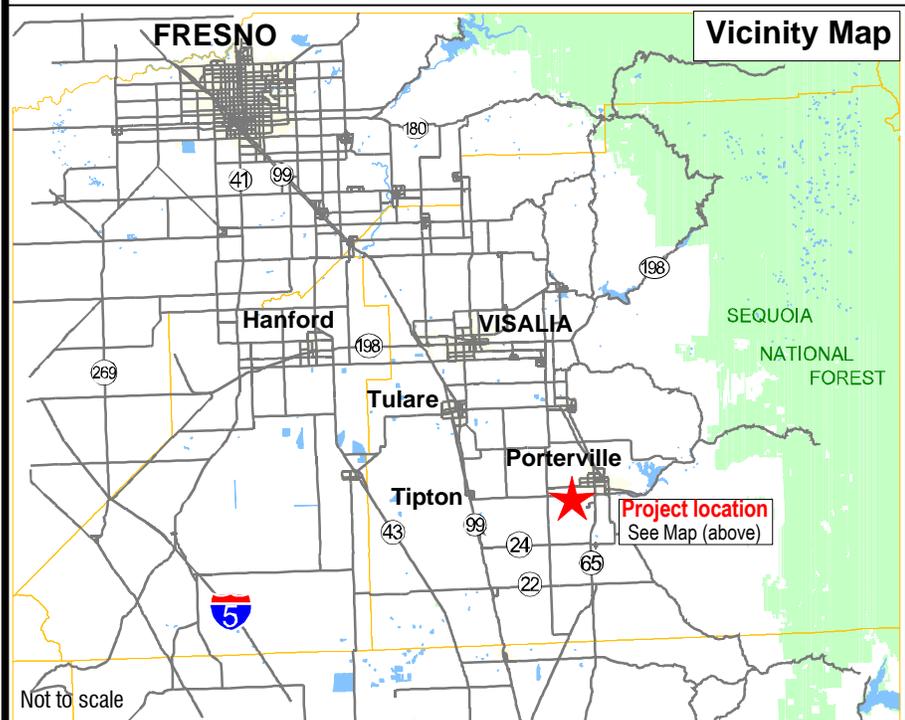
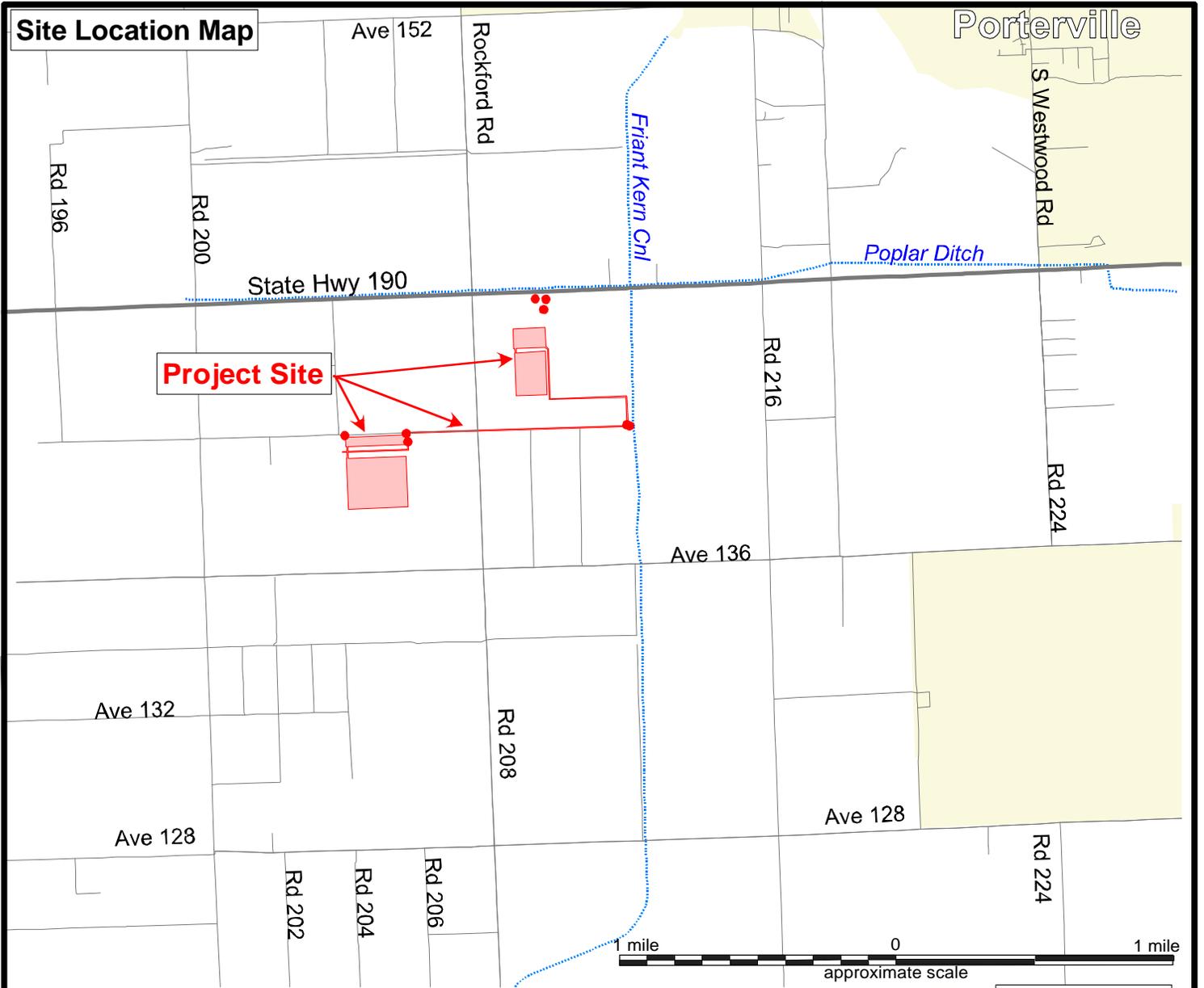
1.1 PROJECT DESCRIPTION

Setton Pistachio of Terra Bella, Inc. (Setton) owns the Rainbow XI Ranch within Porterville Irrigation District (PID) where it operates a permanent groundwater recharge facility in compliance with PID’s *Policy Principles for Porterville Irrigation District Landowner Groundwater Recharge Program* adopted January 20, 2016 (Recharge Policy). Now, Setton is proposing to utilize existing and future basins for banking PID and imported surface water supplies in times of excess demands, to be pumped back into local conveyance facilities and/or the Friant-Kern Canal (FKC) during dry years with limited surface water supplies.

The project will be implemented in two or more phases. Phase 1 of the project will entail banking and recovering water using existing infrastructure. The infrastructure comprises an existing 5-acre recharge basin (“eastern Phase 1 basin”), an existing 4-acre recharge basin (“western Phase 1 basin”), an existing turnout on the FKC, an existing turnout on the Tule River Intertie, 0.56 mile of existing 15” pipeline connecting the FKC turnout to the eastern basin, 0.83 mile of existing 30” pipeline connecting the FKC turnout to the western basin, and six existing wells (Figure 3). All existing wells and water conveyance structures are equipped with totalizing flow meters and data loggers to ensure a continuous record of operations.

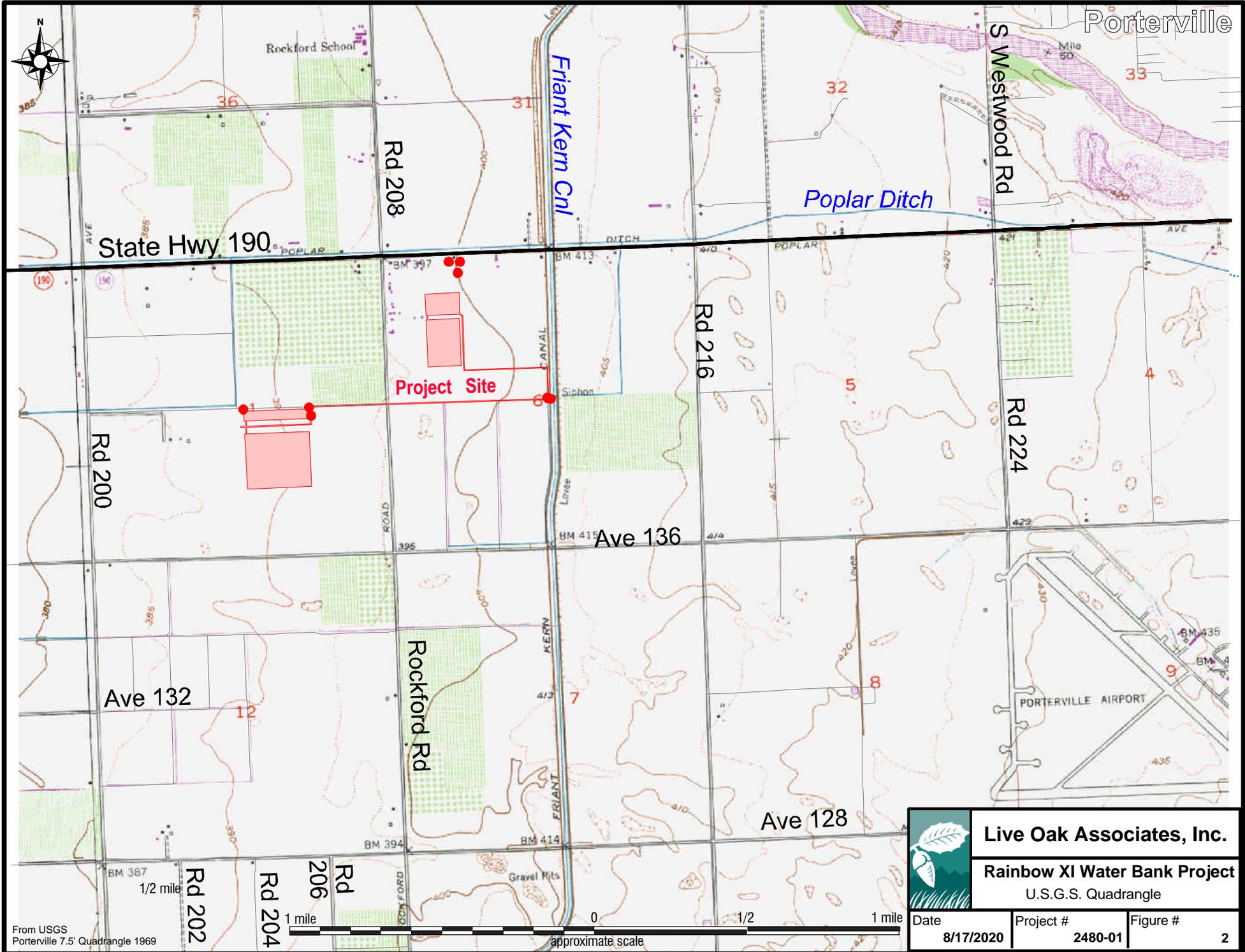
Phase 2 of the project will entail the construction of an 11-acre recharge basin located to the south of the eastern Phase 1 basin (“eastern Phase 2 basin”); a 25-acre recharge basin located to

Site Location Map



	Live Oak Associates, Inc.		
	Rainbow XI Water Bank Project Site / Vicinity Map		
Date	Project #	Figure #	
8/17/2020	2480-01	1	

Not to scale



Porterville

S Westwood Rd

Friant Kern Cnl

Poplar Ditch

State Hwy 190

Rd 208

Rd 216

Rd 224

Rd 200

Project Site

Ave 136

Ave 132

Rockford Rd

Ave 128

PORTERVILLE AIRPORT



Live Oak Associates, Inc.

Rainbow XI Water Bank Project

U.S.G.S. Quadrangle

Date	Project #	Figure #
8/17/2020	2480-01	2

From USGS
Porterville 7.5' Quadrangle 1969



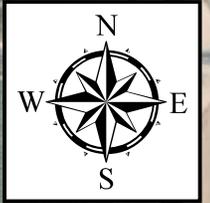
LEGEND

Phase 1 (Existing)

-  Recharge Basins
-  Pipeline
-  Wells
-  Turnouts

Phase 2 (Proposed)

-  Recharge Basins
-  Pipeline



Ave. 144

Poplar West Pipeline

Friant-Kern Canal

Road 208

Tule River Intertie



Live Oak Associates, Inc.

Rainbow XI Water Bank Project

Site Map

Date	Project #	Figure #
08/11/2020	2480-01	3



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

the south of the western Phase 1 basin (“western Phase 2 basin”); two proposed 15” gravity-fed pipes to allow each Phase 1 basin to overflow into its corresponding Phase 2 basin; and approximately 0.3 mile of proposed 15” pipeline connecting an existing well to the Tule River Intertie, where a new inlet will be constructed on the bank (see Figure 3).

The proposed Phase 2 basins will be constructed by excavating to a depth of 3-4 feet, and using the excavated soil to create berms around the basins. The berms will be approximately 12 feet wide and will also function as perimeter roads. The proposed Tule River Intertie pipeline and gravity-fed pipes will be installed underground via trenching, within a disturbance corridor approximately 10 feet wide. The pipes will be fit with totalizing flow meters and data loggers similar to what is already in place for the Phase 1 infrastructure. During construction of the Phase 2 facilities, equipment and materials will be staged within the construction area, without the need for a separate staging location.

The completed recharge facility will bank water from the FKC and Tule River Intertie via the Phase 1 turnout structures, and will recover banked water either through direct usage from wells within PID, or through pump-back into the FKC or Tule River Intertie for physical delivery. Operations and maintenance activities at the completed facility will include (1) standard agricultural and irrigation district practices to prevent invasive plants from migrating onto adjacent farms, which are expected to consist of herbicide application, discing, and/or mowing, (2) rodent control activities to prevent burrow damage to recharge basin berms, (3) rehabilitation of berms, as necessary, to address erosion or burrow damage, (4) daily monitoring of totalizing flow meter data loggers during operating periods, (5) daily monitoring of water levels in the basins during recharge events, (6) monitoring of groundwater levels in adjacent landowner wells on a monthly basis during recharge and recovery periods and twice a year during non-banking periods, (7) routine sampling of recharged water, recovered water, and groundwater to ensure water quality meets *Water Quality Control Plan for the Tulare Lake Basin* (Central Valley RWQCB 2018) standards, and (8) as-needed operational adjustments including well rehabilitation, lowering pumps farther down wells, and installation of treatment systems.

Additional recovery wells may be developed under future project phases. The locations of potential new wells are unknown; however, it is assumed that they would be developed within

areas currently proposed for construction disturbance (i.e. Phase 2). If future wells are to be sited outside of Phase 2 boundaries, separate environmental review would be undertaken.

1.2 REPORT OBJECTIVES

This report addresses issues related to: 1) sensitive biotic resources occurring on the project site; 2) the federal, state, and local laws regulating such resources; and 3) mitigation measures that may be required to reduce the magnitude of anticipated project-related impacts and/or comply with permit requirements of state and federal resource agencies. As such, the objectives of this report are to:

- Summarize all site-specific information related to existing biological resources
- Make reasonable inferences about the biological resources that could occur onsite based on habitat suitability and the proximity of the site to a species' known range
- Summarize all state and federal natural resource protection laws that may be relevant to future site development
- Identify and discuss project impacts to biological resources likely to occur on the site within the context of CEQA and state or federal laws
- Identify avoidance and mitigation measures that would reduce the magnitude of project impacts in a manner consistent with the requirements of CEQA and that are generally consistent with recommendations of the resource agencies regulating affected biological resources

1.3 STUDY METHODOLOGY

Reconnaissance-level field surveys of the project site were conducted on June 2 and August 4, 2020 by Live Oak Associates, Inc. (LOA) ecologist Jeff Gurule. The surveys consisted of walking and driving through the project site while identifying the principal land uses and biotic habitats of the site, identifying plant and animal species encountered, and assessing the suitability of the site's habitats for special status species.

LOA conducted an analysis of potential project impacts based on the known and potential biotic resources of the project site. Sources of information used in the preparation of this analysis included: (1) the *California Natural Diversity Data Base* (CDFW 2020), (2) the *Online*

Inventory of Rare and Endangered Vascular Plants of California (CNPS 2020), and (3) manuals, reports, and references related to plants and animals of the San Joaquin Valley region.

LOA's field investigation did not include a wetland delineation or focused surveys for special status species. The surveys were sufficient to generally describe those features of the site that could be subject to the jurisdiction of the U.S. Army Corps of Engineers (USACE), California Department of Fish and Wildlife (CDFW), and/or the Regional Water Quality Control Board (RWQCB), and to assess the significance of possible biological impacts associated with development of the site.

2.0 EXISTING CONDITIONS

2.1 REGIONAL SETTING

The project site is located in the southern San Joaquin Valley near the Valley's eastern margin. The San Joaquin Valley is bordered by the Sierra Nevada to the east, the Tehachapi Mountains to the south, the California coastal ranges to the west, and the Sacramento-San Joaquin Delta to the north. The project site is located in a portion of the Valley that has, for decades, experienced intensive agricultural disturbances. Current agricultural endeavors in the region include orchards, vineyards, row crops, and dairies.

Like most of California, the southern San Joaquin Valley has a Mediterranean climate. Warm dry summers are followed by cool moist winters. Summer temperatures commonly exceed 90 degrees Fahrenheit, and the relative humidity is generally very low. Winter temperatures rarely rise much above 70 degrees Fahrenheit, with daytime highs often below 60 degrees Fahrenheit. Annual precipitation within the project site is about 11 inches, almost 85% of which falls between the months of October and March. Nearly all precipitation falls in the form of rain. Stormwater readily infiltrates the soils of and surrounding the project site.

The principal drainage in the project vicinity is the Tule River, which flows from east to west approximately 1.5 miles north of the project site at its closest point. The Tule River originates in the Sierra Nevada, with headwater elevations ranging from 7,000 to 9,500 feet National Geodetic Vertical Datum (NVGD). It historically flowed into Tulare Lake, but the lake has been essentially eliminated by land reclamation, upstream water impoundments, and agricultural diversions. Similarly, the Tule River supports only a fraction of the riparian habitat it once supported, and its aquatic habitat has been greatly degraded from agricultural runoff and irregular flows.

The project site is situated within a matrix of agricultural and residential uses. It is bordered by orchards, grain fields, a residential subdivision, the Tule River Intertie, and the Friant-Kern Canal.

2.2 PROJECT SITE

At the time of the field survey, the project site consisted of a disced agricultural field, pistachio orchards, existing recharge basins, agricultural access roads, and disturbed areas surrounding these uses. The site is fairly level, with elevations ranging from approximately 385 to 400 feet National Geodetic Vertical Datum (NGVD).

The site contains two soil mapping units from two soil series: Exeter loam, 0 to 2 percent slopes, and Flamen loam, 0 to 2 percent slopes. These soils are non-hydric with hydric inclusions, meaning that in some areas, the soils may pond water and support the growth of wetland vegetation. However, after decades of ground disturbance associated with agricultural operations and construction and maintenance of roads, levees, and other infrastructure, the site's native soil characteristics are expected to be largely absent.

2.3 LAND USES/BIOTIC HABITATS

Four land uses/biotic habitats have been identified on the project site: agricultural field, orchard, recharge basin, and ruderal (Figure 4). These land uses/habitats and their constituent plant and animal species are described in more detail in the following sections. Lists of the vascular plant species observed within the project site and the terrestrial vertebrates using, or potentially using, the site are provided in Appendices A and B, respectively. Selected photographs of the project site are presented in Appendix C.

2.3.1 Agricultural Field

At the time of the field surveys, the western portion of the project site consisted largely of a wheat field that had recently been harvested and disced. The field was barren of vegetation and of low wildlife value in June 2020; however, its value would fluctuate throughout the year depending on its stage in agricultural production, with value generally increasing as the crop matures or in extended fallow periods.

A few amphibian and reptile species may occur in the site's agricultural field from time to time. Sierran treefrogs (*Pseudacris sierra*) and western toads (*Bufo boreas*) could breed in nearby

LEGEND

Biotic Habitat / Land Use

-  Agricultural Field
-  Orchard
-  Recharge Basin
-  Ruderal



Ave. 144

Poplar West Pipeline

Friant-Kern Canal

Road 208

Tule River, Intertie

	Live Oak Associates, Inc.	
	Rainbow XI Water Bank Project Biotic Habitats / Land Uses	
Date	Project #	Figure #
08/11/2020	2480-01	4



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

ditches and subsequently disperse across the field. Reptiles that could occur in the field include the Pacific gopher snake (*Pituophis catenifer catenifer*) and common kingsnake (*Lampropeltis getulus*).

Agricultural fields provide foraging habitat for a number of avian species. Common resident species likely to forage in the site's field include the mourning dove (*Zenaida macroura*), American crow (*Corvus brachyrhynchos*), and mixed flocks of Brewer's blackbirds (*Euphagus cyanocephalus*), brown-headed cowbirds (*Molothrus ater*), and European starlings (*Sturnus vulgaris*). Summer migrants that would be common in the field include the western kingbird (*Tyrannus verticalis*), and expected winter migrants include the savannah sparrow (*Passerella sandwichensis*) and American pipit (*Anthus rubescens*).

A few mammal species may also occur within the agricultural field of the project site. Small mammals such as deer mice (*Peromyscus maniculatus*), western harvest mice (*Reithrodontomys megalotis*), and California voles (*Microtus californicus*) would occur in fluctuating numbers depending on the season and type of crop grown. Botta's pocket gopher (*Thomomys bottae*) and California ground squirrel (*Otospermophilus beecheyi*) may burrow around the perimeter of the field. Various species of bat would forage over the field.

The presence of amphibians, reptiles, birds and small mammals is likely to attract foraging raptors and mammalian predators. Raptors such as the red-tailed hawk (*Buteo jamaicensis*), American kestrel (*Falco sparverius*), and northern harrier (*Circus cyaneus*) would likely forage over the site's wheat field from time to time. Mammalian predators occurring in the field would be limited to disturbance-tolerant species such as the raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), and coyote (*Canis latrans*).

2.3.2 Orchard

At the time of the field survey, the eastern portion of the project site consisted largely of an immature pistachio orchard. Based on aerial imagery, the orchard was installed between April 2017 and February 2018. Vegetation in this orchard in June 2020 consisted primarily of the planted crop, but also included a sparse cover of common agricultural weeds such as foxtail

barley (*Hordeum murinum*), flax-leaved horseweed (*Erigeron bonariensis*), Canada horseweed (*Erigeron canadensis*), and red-stemmed filaree (*Erodium cicutarium*).

Due to intensive disturbance and the lack of aquatic habitat, orchards provide marginal habitat for amphibians; however, Pacific tree frogs and western toads may disperse through these lands during the winter and spring. Common reptiles such as the Pacific gopher snake and common kingsnake may occasionally occur in the site's orchard.

Although a variety of birds can nest and forage in orchard trees, nesting in the site's pistachio orchard is not expected due to the trees' small stature, and foraging opportunities would be extremely limited as the young trees likely do not fruit yet. Red-tailed hawks and American kestrels may hunt over the site's orchard from time to time.

A few small mammal species would be expected to occur within the orchard. These include deer mice, California voles, Botta's pocket gophers, and Audubon's cottontails (*Sylvilagus audubonii*). Mammalian predators potentially using the site's orchard include raccoons, striped skunks, and coyotes. Various species of bat may forage over the project site's orchard habitat for flying insects, or glean insects from the leaves of trees.

2.3.3 Recharge Basin

At the time of LOA's field investigation, the project site contained two existing recharge basins, referred to in this report as the eastern and western Phase 1 basins. The eastern Phase 1 basin appeared to have been recently disced and was mostly barren of vegetation. However, a remnant borrow pit supported curly dock (*Rumex crispus*), salt heliotrope (*Heliotropium curvassivicum*), crabgrass (*Digitaria* sp.), and tree-tobacco (*Nicotiana glauca*), and associated soil stockpiles supported a dense growth of Canada horseweed. The western Phase 1 basin was newly constructed and supported vegetation only in its northwestern corner, at the previous location of a small agricultural basin that had been merged into the new basin. Vegetation in this corner consisted primarily of common sunflower (*Helianthus annuus*), pigweed amaranth (*Amaranthus albus*), and flax-leaved horseweed.

Wildlife use of the site's basins would vary depending on the timing and degree to which the basins are inundated or saturated. Sierran treefrogs and western toads could opportunistically breed in the basins during periods of inundation. Reptile use of the basins would likely be limited to dry periods, and could include side-blotched lizards (*Uta stansburiana*), Pacific gopher snakes, and common kingsnakes.

Birds expected to use the basins during periods of inundation would include the great blue heron (*Ardea herodias*) and great egret (*Ardea alba*), assuming amphibian and/or invertebrate prey is present. Black phoebes (*Sayornis nigricans*) may glean insects from the surface of the water, or extract mud for nest-building. When the basins are saturated but not inundated, avian use may include those species that feed on mudflats, such as the killdeer (*Charadrius vociferus*). When the basins are dry, they are likely to be used for foraging by mourning doves, savannah sparrows, and Brewer's blackbirds, and could be used for nesting by the mourning dove or killdeer. Common raptors such as the red-tailed hawk and American kestrel would be expected to forage over the basin during dry periods.

Periodic inundation would preclude occupation of the basin floor by burrowing rodents; however, California ground squirrels and Botta's pocket gophers could burrow on the banks. Deer mice and western harvest mice could inhabit the margins of the basins and could forage for insects, seeds, and plant parts in the basins when dry. Disturbance-tolerant mammalian predators such as raccoons, striped skunks, and coyotes would be expected to utilize the basins from time to time. Various bat species would be expected to forage over the basins.

2.3.4 Ruderal

The project site included ruderal lands including dirt access roads, road shoulders, disturbed open areas, and the upper banks of the Friant-Kern Canal and Tule River Intertie. The site's ruderal lands were generally barren of vegetation, or sparsely vegetated with common weeds such as puncturevine (*Tribulus terrestris*), prickly lettuce (*Lactuca serriola*), ripgut (*Bromus diandrus*), and Canada horseweed.

Although the wildlife habitat value of the project site's ruderal areas is relatively low, some wildlife species certainly occur within these lands on occasion. The reptile and amphibian species listed for the recharge basins could potentially occur in ruderal habitats of the site from time to time. Birds expected to forage in these areas include the Brewer's blackbird, savannah sparrow, mourning dove, and killdeer. Vegetated ruderal areas could be used for nesting by mourning doves and barren areas used for nesting by killdeers.

Small mammals that would be expected to occur on ruderal lands of the project site include the California ground squirrel, Botta's pocket gopher, and deer mouse; in fact, a few ground squirrel burrows were observed in ruderal areas at the time of the field survey. Mammalian predators with the potential to occur on ruderal lands of the project site include disturbance-tolerant species such as the raccoon, striped skunk, and coyote.

2.4 SPECIAL STATUS PLANTS AND ANIMALS

Several species of plants and animals within the state of California have low populations and/or limited distributions. Such species may be considered "rare" and are vulnerable to extirpation as the state's human population grows and the habitats these species occupy are converted to agricultural and urban uses. As described more fully in Section 3.2, state and federal laws have provided the CDFW and the U.S. Fish and Wildlife Service (USFWS) with a mechanism for conserving and protecting the diversity of plant and animal species native to the state. A sizable number of native plants and animals have been formally designated as "threatened" or "endangered" under state and federal endangered species legislation. Others have been designated as candidates for such listing. Still others have been designated as "species of special concern" by the CDFW. The California Native Plant Society (CNPS) has developed its own set of lists of native plants considered rare, threatened, or endangered (CNPS 2019). Collectively, these plants and animals are referred to as "special status species."

The California Natural Diversity Data Base (CDFW 2020) was queried for special status species occurrences in the nine USGS 7.5-minute quadrangles containing and immediately surrounding the project site (*Porterville, Cairns Corner, Lindsay, Frazier Valley, Woodville, Success Dam, Sausalito School, Ducor, and Fountain Springs*). These species, and their potential to occur on

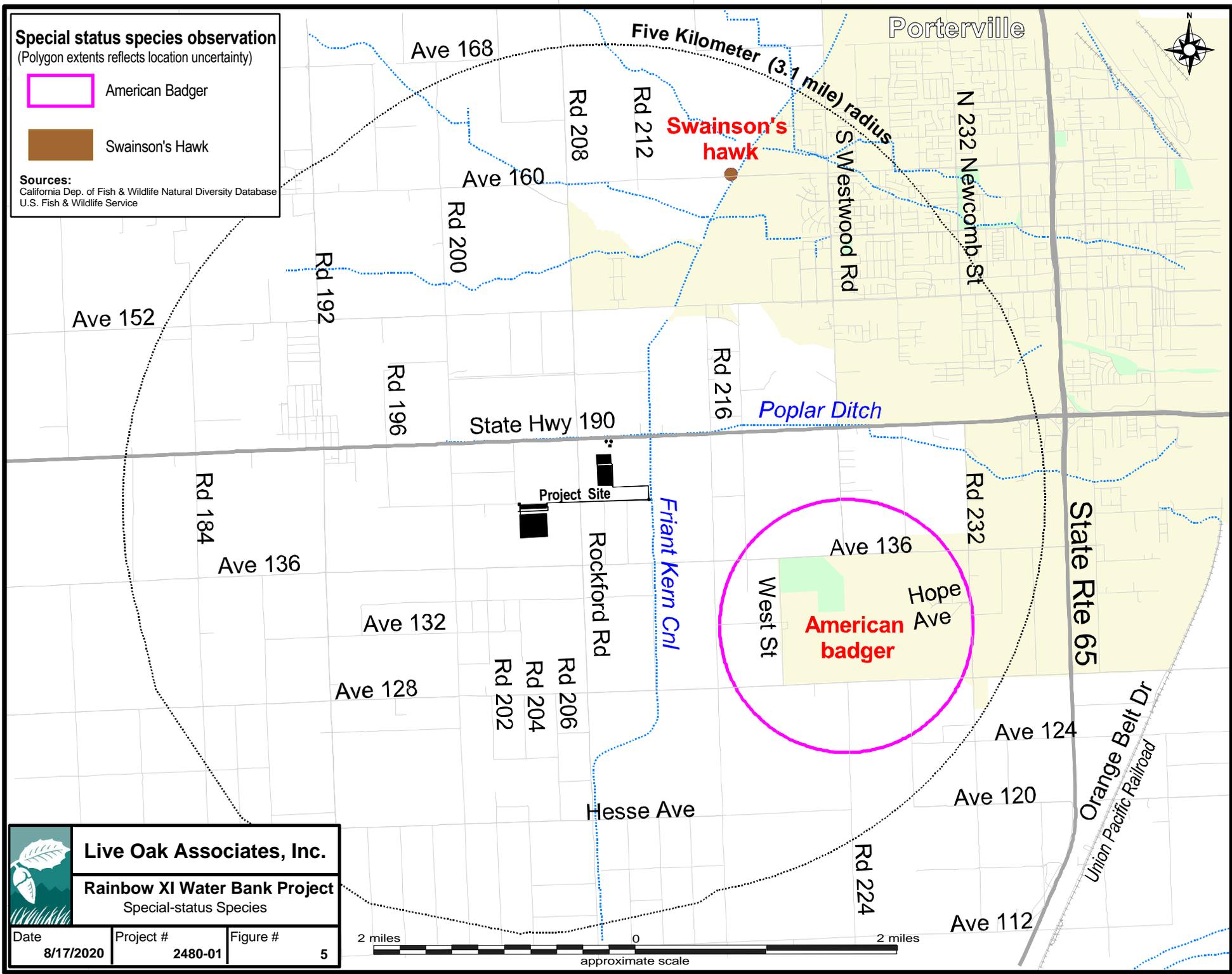
the project site, are listed in Table 1 on the following pages. Table 1 also contains several species not returned in the CNDDDB query, but known by LOA to occur, or potentially occur, in the project vicinity. Sources of information for this Table 1 included *California's Wildlife, Volumes I, II, and III* (Zeiner et. al 1988), *The Recovery Plan for Upland Species of the San Joaquin Valley, California* (USFWS 1998), *The Jepson Manual: Vascular Plants of California, second edition* (Baldwin et al. 2012), *The California Native Plant Society's Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2020), Calflora.org, and eBird.org.

Special status species occurrences within 3 miles of the project site are depicted in Figure 5, and San Joaquin kit fox (*Vulpes macrotis mutica*) occurrences within 10 miles of the site are depicted in Figure 6.

Special status species observation
(Polygon extents reflects location uncertainty)

-  American Badger
-  Swainson's Hawk

Sources:
California Dep. of Fish & Wildlife Natural Diversity Database
U.S. Fish & Wildlife Service



Live Oak Associates, Inc.
Rainbow XI Water Bank Project
Special-status Species

Date	Project #	Figure #
8/17/2020	2480-01	5

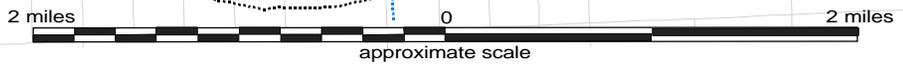


TABLE 1. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY

PLANTS (adapted from CDFW 2020 and CNPS 2020)

Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Act

Species	Status	Habitat	Occurrence on the Project Site
California Jewelflower (<i>Caulanthus californicus</i>)	FE, CE, CNPS 1B	Occurs in sandy, chenopod scrub, pinyon and juniper woodland, and valley and foothill grassland up to 3,280 ft. in elevation. Blooms February-May.	Absent. Suitable habitat for this species is absent from the project site and adjacent lands.
Springville Clarkia (<i>Clarkia springvillensis</i>)	FT, CE, CNPS 1B	Occurs in chaparral, cismontane woodland, and valley and foothill grasslands with granitic soil between 985 and 2,430 ft. in elevation. Blooms May-July.	Absent. The project site is below the elevational range for this species, and suitable habitat is absent.
Striped Adobe-Lily (<i>Fritillaria striata</i>)	CT, CNPS 1B	Occurs in heavy clay soils of cismontane woodland and valley and foothill grassland between 1,150 and 2,920 ft. in elevation. Blooms February-April.	Absent. Suitable habitat is absent from the project site, and the site is below this species' elevational range.
San Joaquin Woollythreads (<i>Monolopia congdonii</i>)	FE, CNPS 1B	Occurs in sandy soils in shadescale scrub and valley grassland, between 195 and 2,460 ft. in elevation. Blooms February-May.	Absent. Suitable habitat for this species is absent from the project site and adjacent lands.
San Joaquin Adobe Sunburst (<i>Pseudobahia peirsonii</i>)	FT, CE, CNPS 1B	Occurs in foothill grasslands in heavy clay soils of the Porterville and Centerville series, between 300 and 2,625 ft. in elevation. Blooms March-April.	Absent. Suitable habitat for this species is absent from the project site and adjacent lands.
Keck's Checkerbloom (<i>Sidalcea keckii</i>)	FE, CNPS 1B	Occurs in cismontane woodland and valley and foothill grassland habitat with serpentine and/or clay soils between 525 and 2,230 ft. in elevation. Blooms April-May.	Absent. Suitable habitat and soils are absent from the project site, and the site is below this species' elevational range.

PLANTS (cont'd)

CNPS-Listed Plants

Earlimart Orache (<i>Atriplex cordulata</i> var. <i>erecticaulis</i>)	CNPS 1B	Occurs in alkaline soils of valley and foothill grasslands between 230 and 395 ft. in elevation. Blooms August-September.	Absent. Suitable habitat for this species is absent from the project site and adjacent lands, and the site is at the upper elevational limit of where this species may be found.
Lost Hills Crownscale (<i>Atriplex coronata</i> var. <i>vallicola</i>)	CNPS 1B	Occurs in chenopod scrub, valley and foothill grasslands, and vernal pools on alkaline soils, between 164 and 2,080 ft. in elevation. Blooms April-August.	Absent. Suitable habitat for this species is absent from the project site and adjacent lands.
Brittlescale (<i>Atriplex depressa</i>)	CNPS 1B	Occurs in alkali soils in barren areas within alkali grassland, meadow and scrub at elevations up to 1,000 ft. in elevation. Occasionally found around vernal pools. Blooms April-October.	Absent. Suitable habitat for this species is absent from the project site and adjacent lands.

TABLE 1. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY

PLANTS (cont'd)

CNPS-Listed Plants

Species	Status	Habitat	Occurrence on the Project Site
Lesser Saltscare (<i>Atriplex minuscula</i>)	CNPS 1B	Occurs in alkali sink and grassland habitats in sandy, alkaline soils; elevations up to 750 ft.; blooms May-October.	Absent. Suitable habitat and soils for this species are absent from the project site.
Vernal Pool Smallscale (<i>Atriplex persistens</i>)	CNPS 1B	Occurs in alkaline soils of valley and foothill grasslands of the San Joaquin Valley, between 130 and 330 ft. in elevation. Blooms August-October.	Absent. Suitable habitat for the vernal pool smallscale is absent from the project site and adjacent lands, and the site is above this species' upper elevational limit.
Subtle Orache (<i>Atriplex subtilis</i>)	CNPS 1B	Occurs in alkaline soils of valley and foothill grasslands of the San Joaquin Valley, between 130 and 330 ft. in elevation. Blooms August-October.	Absent. Suitable habitat for the subtle orache is absent from the project site and adjacent lands, and the site is above this species' upper elevational limit.
Recurved Larkspur (<i>Delphinium recurvatum</i>)	CNPS 1B	Occurs in alkaline soils in cismontane woodland and valley and foothill grasslands below 2,500 ft. in elevation. Blooms March-June.	Absent. Suitable habitat for this species is absent from the project site and adjacent lands.
Calico Monkeyflower (<i>Diplacus pictus</i>)	CNPS 1B	Occurs around granitic outcrops or gooseberry shrubs in broadleaf upland forest and cismontane woodland in granitic soils between 330 and 4,270 ft. in elevation. May occur in disturbed areas. Blooms March-May.	Absent. Suitable habitat for this species is absent from the project site and adjacent lands.
Spiny-Sepaled Button-Celery (<i>Eryngium spinosepalum</i>)	CNPS 1B	Occurs in vernal pools, swales and valley and foothill grasslands of the San Joaquin Valley and the Tulare Basin between 330 and 840 ft. in elevation. Blooms April-May.	Absent. Suitable habitat is absent from the project site and surrounding lands.
Alkali-sink Goldfields (<i>Lasthenia chrysantha</i>)	CNPS 1B	Endemic to California's Central Valley, where it grows in vernal pools and alkali flats. Blooms February-June.	Absent. Suitable habitat is absent from the project site and surrounding lands.
Madera Leptosiphon (<i>Leptosiphon serrulatus</i>)	CNPS 1B	Occurs in openings in cismontane woodland between 980 and 1,400 ft. in elevation. Blooms April-May	Absent. Suitable habitat is absent from the project site, and the site is situated below this species' elevational range.
Shining Navarretia (<i>Navarretia nigelliformis</i> ssp. <i>radians</i>)	CNPS 1B	Occurs in vernal pools within valley grassland and foothill woodland communities between 200 and 3,280 ft. in elevation. Blooms April-July.	Absent. Suitable habitat is absent from the project site and surrounding lands.
California Alkali Grass (<i>Puccinellia simplex</i>)	CNPS 1B	Occurs in alkaline, vernal mesic; sinks, flats, and lakes in chenopod scrub, meadows and seeps, valley and foothill grassland, and vernal pools up to 2,920 ft. in elevation. Blooms March-May.	Absent. Suitable habitat and soils for this species are absent from the project site.
Chaparral Ragwort (<i>Senecio aphanactis</i>)	CNPS 2B	Occurs in chaparral, cismontane woodland, and coastal scrub, at elevations up to 2,600 feet. Blooms January-April.	Absent. Suitable habitat for this species is absent from the project site and adjacent lands.

TABLE 1. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY

ANIMALS (adapted from CDFW 2020)

Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Act, and/or as California Fully Protected

Species	Status	Habitat	Occurrence on the Project Site
Crotch Bumble Bee (<i>Bombus crotchii</i>)	CCE	Once very common in grasslands and shrublands of central and southern California, this species is no longer present across much of its historic range. A generalist forager, the Crotch bumble bee feeds primarily on open flowers of the Fabaceae, Apocynaceae, Asteraceae, Lamiaceae, and Boraginaceae family (Richardson 2017).	Unlikely. There are no modern occurrence records for the Crotch bumble bee in the southern San Joaquin Valley. The sole occurrence within 10 miles of the project site was documented in the general vicinity of Porterville in 1963. The closest modern (2000 or later) detections come from the Carrizo Plain, 70-80 miles southwest of the project site. This species is unlikely to have persisted in the project vicinity and would not be expected to inhabit or utilize the intensively maintained habitats of the project site.
Vernal Pool Fairy Shrimp (<i>Branchinecta lynchi</i>)	FT	Occurs in vernal pools, clear to tea-colored water in grass or mud-bottomed swales, and basalt depression pools.	Absent. Suitable habitat in the form of vernal pools is absent from the project site and adjacent lands.
Blunt-nosed Leopard Lizard (BNLL) (<i>Gambelia sila</i>)	FE, CE, CFP	Frequents grasslands, alkali meadows and chenopod scrub of the San Joaquin Valley. Prefers flat areas with open space for running. Takes cover under large shrubs and in small mammal burrows.	Absent. Suitable habitat for the BNLL is absent from the site and surrounding lands. The closest known occurrence of BNLL is approximately 10 miles to the west, where two individuals were collected in 1911.
Swainson's Hawk (<i>Buteo swainsoni</i>)	CT	This breeding migrant to California nests in mature trees in riparian areas and oak savannah, and occasionally in lone trees at the margins of agricultural fields. Requires adjacent suitable foraging areas such as grasslands or alfalfa fields supporting rodent populations.	Possible. Swainson's hawks could forage over the site's agricultural field and basins from time to time. Nesting habitat is absent from the site itself, but is located on nearby rural residential properties in the form of ornamental trees. The closest known nesting occurrence of this species is approximately 2 miles northeast of the site along the FKC, recorded in 2017.
California Condor (<i>Gymnogyps californianus</i>)	FE, CE, CFP	Scavenges for carrion in habitats ranging from Pacific beaches to mountain forests and meadows. Nests in caves on cliff faces in mountains up to 6,000 ft. in elevation. Due to its large size, requires high perches for easier take-off.	Absent. Nesting habitat is absent from the project site, and the site would not be a source of the large animal carcasses this species forages on. The closest known occurrences of this species are at the Blue Ridge Condor Area, approximately 6.5 miles northeast of the project site.

TABLE 1. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY

ANIMALS (cont'd)

Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Act, and/or as California Fully Protected

Species	Status	Habitat	Occurrence on the Project Site
Tricolored Blackbird (<i>Agelaius tricolor</i>)	CT	Nests colonially near fresh water in dense cattails or tules, or in thickets of willows or shrubs. In the San Joaquin Valley, has increasingly been documented nesting in wheat fields. Forages in grassland and cropland areas.	Possible. Tricolored blackbirds are uncommon in the project vicinity. The nearest CNDDDB occurrence considered to be extant was recorded near the Success Dam, approximately 9 miles east of the site, in 1971. However, if tricolored blackbirds occur in the project vicinity, they could forage in the site's agricultural field and basins from time to time, and could nest in the site's fields when planted to a suitable crop such as wheat or triticale.
Tipton Kangaroo Rat (<i>Dipodomys nitratoides nitratoides</i>)	FE, CE	Inhabits valley saltbrush scrub, valley sink scrub, and grassland habitats located from the Valley floor to 300 ft. in elevation.	Absent. The project site is located outside of the known distribution of this species (USFWS 2010). The closest known occurrence is a museum specimen collected approximately 7 miles northwest of the site in 1943.
San Joaquin Kit Fox (<i>Vulpes macrotis mutica</i>)	FE, CT	Frequents desert alkali scrub and annual grasslands and may forage in adjacent agricultural habitats. Utilizes enlarged (5 to 8 inches in diameter) ground squirrel burrows as denning habitat.	Unlikely. The intensively maintained habitats of the project site are marginal, at best, for this species. Moreover, modern kit fox occurrences in the project vicinity are scarce. All 22 of the SJKF occurrences documented within a 10-mile radius of the project site are from over 25 years ago; all but two are from the 1970s. The closest documented occurrence of this species was a den observed between 1972 and 1975 approximately 0.3 mile southeast of the site. At most, kit fox could occasionally pass through and/or forage within the project site on the way to more suitable habitat elsewhere.

State Species of Special Concern

Western Spadefoot (<i>Spea hammondi</i>)	SSC	Occurs in grasslands of San Joaquin Valley, where it breeds in vernal pools or other seasonal wetlands and aestivates in underground refugia such as rodent burrows. Baumberger et al. (2019) recorded a maximum distance of around 890 feet between breeding and aestivation sites.	Absent. Suitable breeding habitat for this species is absent from the project site and surrounding lands. The closest known occurrence was documented at the Pixley Vernal Pool Preserve, approximately 6 miles southwest of the site, in 1978.
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TABLE 1. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY

ANIMALS (cont'd)

State Species of Special Concern

Species	Status	Habitat	Occurrence on the Project Site
Northern California Legless Lizard (<i>Anniella pulchra</i>)	SSC	Occurs in sparsely vegetated areas of beach dunes, chaparral, pine-oak woodlands, desert scrub, sandy washes, and stream terraces with sycamores, cottonwoods, or oaks. Requires moist soils.	Unlikely. The intensively maintained habitats of the project site are unsuitable for the northern California legless lizard, and the site is situated in a matrix of agricultural and residential lands that would not support this species. A historical occurrence was mapped generally to Porterville, approximately 4 miles east of the site, in 1940. The closest modern sightings are located along the Tule River corridor 7 to 10 miles east of the site, in areas where natural lands persist.
Northern Harrier (<i>Circus cyaneus</i>)	CSC	Frequents meadows, grasslands, open rangelands, freshwater emergent wetlands. Nests on ground, generally in marshes, although grassland and pasture habitat may also be used.	Possible. This species could occasionally forage over the site's agricultural field and basins, but nesting habitat is absent.
Burrowing Owl (<i>Athene cunicularia</i>)	CSC	Frequents open, dry annual or perennial grasslands, deserts, and scrublands characterized by low growing vegetation. Dependent upon burrowing mammals, most notably the California ground squirrel, for nest burrows.	Possible. The burrowing owl has never been documented in the immediate project vicinity; the closest known occurrences are over 10 miles away. Moreover, the disturbed habitats of the project site are of relatively low value for this species, and only a few California ground squirrel burrows were found on site during the surveys. However, should burrowing owls occur in the area, there is some potential for owls to nest or roost in the site's ruderal areas and/or along the margins of the agricultural field and basins, and to use the field and basins for foraging.
Pallid Bat (<i>Antrozous pallidus</i>)	SSC	Roosts in rocky outcrops, cliffs, and crevices with access to open habitats for foraging. May also roost in caves, mines, hollow trees and buildings.	Possible. This species could forage on or over the site, but roosting habitat is absent.
Townsend's Big-eared Bat (<i>Corynorhinus townsendii</i>)	SSC	Primarily a cave-dwelling bat, but may also roost in tunnels, buildings, other human-made structures, and hollow trees. Occurs in a variety of habitats.	Possible. This species could forage over the site, but roosting habitat is absent.
Western Mastiff Bat (<i>Eumops perotis californicus</i>)	SSC	Frequents open, semi-arid to arid habitats, including conifer and deciduous woodlands, grasslands, chaparral and urban. Roosts in cliff faces, high buildings, and tunnels.	Possible. This species could forage over the site, but roosting habitat is absent.

TABLE 1. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY

ANIMALS (cont'd)

State Species of Special Concern

Species	Status	Habitat	Occurrence on the Project Site
American Badger (<i>Taxidea taxus</i>)	SSC	Found in drier open stages of most shrub, forest and herbaceous habitats with friable soils.	Unlikely. The site's intensively maintained habitats are marginal, at best, for the American badger. A museum collection of this species was made approximately 1 mile southeast of the site on an unknown date; however, there are no modern badger occurrences in the project vicinity.

OCCURRENCE DESIGNATIONS AND STATUS CODES

- Present: Species observed on the site at time of field survey or during recent past
- Likely: Species not observed on the site, but it may reasonably be expected to occur there on a regular basis
- Possible: Species not observed on the site, but it could occur there from time to time
- Unlikely: Species not observed on the site, and would not be expected to occur there except, perhaps, as a transient
- Absent: Species not observed on the site, and precluded from occurring there due to absence of suitable habitat

STATUS CODES

- | | | | |
|-----|---------------------------------|-----|---------------------------------------|
| FE | Federally Endangered | CE | California Endangered |
| FT | Federally Threatened | CT | California Threatened |
| FPE | Federally Endangered (Proposed) | CCE | California Endangered (Candidate) |
| FPT | Federally Threatened (Proposed) | CFP | California Fully Protected |
| FC | Federal Candidate | CSC | California Species of Special Concern |

CNPS LISTING

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

2.5 JURISDICTIONAL WATERS

As will be discussed in greater detail in Section 3.2.8, the U.S. Army Corps of Engineers (USACE) has regulatory authority over certain rivers, creeks, lakes, ponds, reservoirs, wetlands, and in some cases irrigation canals (“waters of the U.S.”). The CDFW asserts jurisdiction over waters in California that have a defined bed and bank, including engineered channels that replace, and/or connect to, natural drainages. The State Water Resources Control Board (SWRCB) and nine Regional Water Quality Control Boards (RWQCBs) assert jurisdiction over California’s oceans, lakes, and rivers, and some, but not all, of California’s wetland features.

The project site contains two existing recharge basins that do not meet the current definitions of waters of the U.S. or State, and are unlikely to be regulated by the USACE, CDFW, or RWQCB.

The site also includes a small area on the eastern bank of the Tule River Intertie at the proposed location of a new inlet structure. The Tule River Intertie initiates approximately 2 miles upstream (north) of the project site at the Wood-Central Ditch, which receives water from the Tule River. It connects to the Casa Blanca Canal approximately 0.4 downstream (south) of the site. The Casa Blanca Canal is an irrigation facility operated by the Lower Tule River Irrigation District that serves growers in the region before terminating near Highway 43 and Avenue 128. Because the Tule River Intertie appears to lack downstream connectivity to waters of the U.S., it is not expected to be claimed by the USACE. The CDFW does not assert jurisdiction over manmade channels that do not replace a natural drainage, and is therefore not expected to assert jurisdiction over the Tule River Intertie. The Tule River Intertie may, however, be regulated by the Central Valley RWQCB.

2.6 SENSITIVE NATURAL COMMUNITIES

California contains a wide range of natural communities, or unique assemblages of plants and animals. These communities have largely been classified and mapped by CDFW as part of its natural heritage program. Natural communities are assigned state and global ranks according to their rarity and the magnitude and trend of the threats they face. Any natural community with a state rank of 1 to 3 (on a 1 to 5 scale) is considered “sensitive” and must be considered in CEQA review. Examples of sensitive natural communities in the San Joaquin Valley are northern hardpan vernal pool, sycamore alluvial woodland, valley oak woodland, and valley sink scrub.

Sensitive natural communities are absent from the project site.

2.7 WILDLIFE MOVEMENT CORRIDORS

Wildlife movement corridors are routes that animals regularly and predictably follow during seasonal migration, dispersal from native ranges, daily travel within home ranges, and inter-population movements. Movement corridors in California are typically associated with valleys, ridgelines, and rivers and creeks supporting riparian vegetation.

The project site does not contain features likely to function as wildlife movement corridors.

2.8 DESIGNATED CRITICAL HABITAT

The USFWS often designates areas of “critical habitat” when it lists species as threatened or endangered. Critical habitat is a specific geographic area(s) that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection.

Designated critical habitat is absent from the project site and adjacent lands. The nearest unit of critical habitat is located approximately 7 miles northeast of the site, and is designated for the protection of the California condor (*Gymnogyps californianus*).

3.0 IMPACTS AND MITIGATIONS

3.1 SIGNIFICANCE CRITERIA

In California, any project carried out or approved by a public agency that will result in a direct or reasonably foreseeable indirect physical change in the environment must comply with CEQA. The purpose of CEQA is to ensure that a project's potential impacts on the environment are evaluated, and methods for avoiding or reducing these impacts are considered, before the project is allowed to move forward. A secondary aim of CEQA is to provide justification to the public for the approval of any projects involving significant impacts on the environment.

According to Section 15382 of the CEQA Guidelines, a significant effect on the environment means a “substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic interest.” Although the lead agency may set its own CEQA significance thresholds, project impacts to biological resources are generally considered to be significant if they would meet any of the following criteria established in Appendix G of the CEQA Guidelines:

- 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 CDFW or USFWS.
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by CDFW or USFWS.
- Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

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

Furthermore, CEQA Guidelines Section 15065(a) requires the lead agency to make “mandatory findings of significance” if there is substantial evidence that a project may:

- Substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, or substantially reduce the number or restrict the range of an endangered, rare or threatened species.
- Achieve short-term environmental goals to the detriment of long-term environmental goals.
- Produce environmental effects that are individually limited but cumulatively considerable, meaning that the incremental effects of the project are significant when viewed in connection with the effects of past projects, other current projects, and probable future projects.

3.2 RELEVANT GOALS, POLICIES, AND LAWS

3.2.1 General Plan Policies of County of Tulare

In compliance with CEQA, the lead agency must consider conformance with applicable goals and policies of the General Plan of the County of Tulare. The Tulare County General Plan released an update in 2003 that is valid through 2030. Implementation of goals in the Tulare County General Plan is accomplished via a set of policies specific to each goal. Relevant biological resource goals include:

- protecting rare and endangered species;
- limiting development in environmentally sensitive areas;
- supporting the preservation and management of wetland and riparian plant communities for passive recreation, groundwater recharge, and wildlife habitats;
- encouraging the planting of native trees, shrubs, and grasslands preserve;
- requiring open space buffers between development projects and significant watercourse, riparian vegetation, wetlands, and other sensitive habitats and natural communities;

- coordinating with other government land management agencies to preserve and protect biological resources;
- implementing pesticide controls to limit effects on natural resources; and
- supporting the establishment and administration of a mitigation banking program.

3.2.2 Habitat Conservation Plans and Natural Community Conservation Plans

Section 10 of the federal Endangered Species Act establishes a process by which non-federal projects can obtain authorization to incidentally take listed species, provided take is minimized and thoroughly mitigated. A Habitat Conservation Plan (HCP), developed by the project applicant in collaboration with the USFWS and/or NMFS, ensures that such minimization and mitigation will occur, and is a prerequisite to the issuance of a federal incidental take permit. Similarly, a Natural Community Conservation Plan (NCCP), developed by the project applicant in collaboration with CDFW, provides for the conservation of biodiversity within a project area, and permits limited incidental take of state-listed species.

3.2.3 Threatened and Endangered Species

In California, imperiled plants and animals may be afforded special legal protections under the California Endangered Species Act (CESA) and/or Federal Endangered Species Act (FESA). Species may be listed as “threatened” or “endangered” under one or both Acts, and/or as “rare” under CESA. Under both Acts, “endangered” means a species is in danger of extinction throughout all or a significant portion of its range, and “threatened” means a species is likely to become endangered within the foreseeable future. Under CESA, “rare” means a species may become endangered if their present environment worsens. Both Acts prohibit “take” of listed species, defined under CESA as “to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture or kill” (California Fish and Game Code, Section 86), and more broadly defined under FESA to include “harm” (16 USC, Section 1532(19), 50 CFR, Section 17.3).

When state and federally listed species have the potential to be impacted by a project, the USFWS and CDFW must be included in the CEQA process. These agencies review the environmental document to determine the adequacy of its treatment of endangered species issues

and to make project-specific recommendations for the protection of listed species. Projects that may result in the “take” of listed species must generally enter into consultation with the USFWS and/or CDFW pursuant to FESA and CESA, respectively. In some cases, incidental take authorization(s) from these agencies may be required before the project can be implemented.

3.2.4 California Fully Protected Species

The classification of certain animal species as “fully protected” was the State of California’s initial effort in the 1960s, prior to the passage of the California Endangered Species Act, to identify and provide additional protection to those species that were rare or faced possible extinction. Following CESA enactment in 1970, many fully protected species were also listed as California threatened or endangered. The list of fully protected species are identified, and their protections stipulated, in California Fish and Game Code Sections 3511 (birds), 4700 (mammals), 5050 (reptiles and amphibians), and fish (5515). Fully protected species may not be taken or possessed at any time and no licenses or permits may be issued for their take, except in conjunction with necessary scientific research and protection of livestock.

3.2.5 Migratory Birds

The Federal Migratory Bird Treaty Act (FMBTA: 16 USC 703-712) prohibits killing, possessing, or trading in any bird species covered in one of four international conventions to which the United States is a party, except in accordance with regulations prescribed by the Secretary of the Interior. The name of the act is misleading, as it actually covers almost all birds native to the United States, even those that are non-migratory. The FMBTA encompasses whole birds, parts of birds, and bird nests and eggs.

Native birds are also protected under California state law. The California Fish and Game Code makes it unlawful to take or possess any non-game bird covered by the FMBTA (Section 3513), as well as any other native non-game bird (Section 3800), even if incidental to lawful activities. Moreover, the California Migratory Bird Protection Act, enacted in September 2019, clarifies native bird protection and increases protections where California law previously deferred to federal law.

3.2.6 Birds of Prey

Birds of prey are protected in California under provisions of the Fish and Game Code (Section 3503.5), which states that it is unlawful to take, possess, or destroy any birds in the order Falconiformes (hawks and eagles) or Strigiformes (owls), as well as their nests and eggs. The bald eagle and golden eagle are afforded additional protection under the federal Bald and Golden Eagle Protection Act (16 USC 668), which makes it unlawful to kill birds or their eggs.

3.2.7 Nesting Birds

In California, protection is afforded to the nests and eggs of all birds. California Fish and Game Code (Section 3503) states that it is “unlawful to take, possess, or needlessly destroy the nest or eggs of any bird except as otherwise provided by this code or any regulation adopted pursuant thereto.” Breeding-season disturbance that causes nest abandonment and/or loss of reproductive effort is considered a form of “take” by the CDFW.

3.2.8 Wetlands and Other Jurisdictional Waters

The USACE regulates the filling or grading of waters of the U.S. under the authority of Section 404 of the Clean Water Act (CWA). Drainage channels and adjacent wetlands may be considered “waters of the United States” or “jurisdictional waters” subject to the jurisdiction of the USACE.

Waters of the U.S. are defined by the Navigable Waters Protection Rule. The new rule was published in the Federal Register on April 21, 2020, and took effect on June 22, 2020.

The Navigable Waters Protection Rule (33 CFR Part 328) identifies four categories of Waters of the U.S.: (1) territorial seas and traditional navigable waters, (2) tributaries, (3) lakes, ponds, and impoundments of jurisdictional waters, and (4) adjacent wetlands. These categories are defined as follows:

Territorial Seas and Traditional Navigable Waters (TNWs)

- The territorial seas and traditional navigable waters include large rivers and lakes and tidally-influenced waterbodies used in interstate or foreign commerce.

Tributaries

- Tributaries include perennial and intermittent rivers and streams that contribute surface flow to traditional navigable waters in a typical year. These naturally occurring surface water channels must flow more often than just after a single precipitation event—that is, tributaries must be perennial or intermittent.
- Tributaries can connect to a traditional navigable water or territorial sea in a typical year either directly or through other “waters of the United States,” through channelized non-jurisdictional surface waters, through artificial features (including culverts and spillways), or through natural features (including debris piles and boulder fields).
- Ditches are to be considered tributaries only where they satisfy the flow conditions of the perennial and intermittent tributary definition and either were constructed in or relocate a tributary or were constructed in an adjacent wetland and contribute perennial or intermittent flow to a traditional navigable water in a typical year.

Lakes, Ponds, and Impoundments of Jurisdictional Waters

- Lakes, ponds, and impoundments of jurisdictional waters are jurisdictional where they contribute surface water flow to a traditional navigable water or territorial sea in a typical year either directly or through other “waters of the United States,” through channelized non-jurisdictional surface waters, through artificial features (including culverts and spillways), or through natural features (including debris piles and boulder fields).
- Lakes, ponds, and impoundments of jurisdictional waters are also jurisdictional where they are flooded by a “water of the United States” in a typical year, such as certain oxbow lakes that lie along the Mississippi River.

Adjacent Wetlands

- Wetlands that physically touch other jurisdictional waters are “adjacent wetlands,”
- Wetlands separated from a “water of the United States” by only a natural berm, bank or dune are also “adjacent.”
- Wetlands inundated by flooding from a “water of the United States” in a typical year are “adjacent.”
- Wetlands that are physically separated from a jurisdictional water by an artificial dike, barrier, or similar artificial structure are “adjacent” so long as that structure allows for a direct hydrologic surface connection between the wetlands and the jurisdictional water in a typical year, such as through a culvert, flood or tide gate, pump, or similar artificial feature.

- An adjacent wetland is jurisdictional in its entirety when a road or similar artificial structure divides the wetland, as long as the structure allows for a direct hydrologic surface connection through or over that structure in a typical year.

The final rule also outlines what are not “waters of the United States.” The following waters/features are not jurisdictional under the rule:

- Waterbodies that are not included in the four categories of “waters of the United States” listed above.
- Groundwater, including groundwater drained through subsurface drainage systems, such as drains in agricultural lands.
- Ephemeral features, including ephemeral streams, swales, gullies, rills, and pools.
- Diffuse stormwater run-off and directional sheet flow over upland.
- Many farm and roadside ditches.
- Prior converted cropland retains its longstanding exclusion, but is defined for the first time in the final rule. The agencies are clarifying that this exclusion will cease to apply when cropland is abandoned (i.e., not used for, or in support of, agricultural purposes in the immediately preceding five years) and has reverted to wetlands.
- Artificially irrigated areas, including fields flooded for agricultural production, that would revert to upland should application of irrigation water to that area cease.
- Artificial lakes and ponds, including water storage reservoirs and farm, irrigation, stock watering, and log cleaning ponds, constructed or excavated in upland or in non-jurisdictional waters.
- Water-filled depressions constructed or excavated in upland or in non-jurisdictional waters incidental to mining or construction activity, and pits excavated in upland or in non-jurisdictional waters for the purpose of obtaining fill, sand, or gravel.
- Stormwater control features excavated or constructed in upland or in non-jurisdictional waters to convey, treat, infiltrate, or store stormwater run-off.
- Groundwater recharge, water reuse, and wastewater recycling structures, including detention, retention and infiltration basins and ponds, that are constructed in upland or in non-jurisdictional waters.
- Waste treatment systems have been excluded from the definition of “waters of the United States” since 1979 and will continue to be excluded under the final rule. Waste treatment systems include all components, including lagoons and treatment ponds (such as settling

or cooling ponds), designed to either convey or retain, concentrate, settle, reduce, or remove pollutants, either actively or passively, from wastewater or stormwater prior to discharge (or eliminating any such discharge).

All activities that involve the discharge of dredge or fill material into waters of the U.S. are subject to the permit requirements of the USACE. Such permits are typically issued on the condition that the applicant agrees to provide mitigation that result in no net loss of wetland functions or values. No permit can be issued until the RWQCB issues a Section 401 Water Quality Certification (or waiver of such certification) verifying that the proposed activity will meet state water quality standards.

Under the Porter-Cologne Water Quality Control Act of 1969, the State Water Resources Control Board has regulatory authority to protect the water quality of all surface water and groundwater in the State of California (“Waters of the State”). Nine RWQCBs oversee water quality at the local and regional level. The RWQCB for a given region regulates discharges of fill or pollutants into waters of the State through the issuance of various permits and orders. Discharges into waters of the State that are also waters of the U.S. require a Section 401 Water Quality Certification from the RWQCB as a prerequisite to obtaining certain federal permits, such as a Section 404 Clean Water Act permit. Discharges into all Waters of the State, even those that are not also waters of the U.S., require Waste Discharge Requirements (WDRs), or waivers of WDRs, from the RWQCB. The RWQCB also administers the Construction Storm Water Program and the federal National Pollution Discharge Elimination System (NPDES) program. Projects that disturb one or more acres of soil must obtain a Construction General Permit under the Construction Storm Water Program. A prerequisite for this permit is the development of a Storm Water Pollution Prevention Plan (SWPPP) by a certified Qualified SWPPP Developer. Projects that discharge wastewater, storm water, or other pollutants into a water of the U.S. may require a NPDES permit.

CDFW has jurisdiction over the bed and bank of natural drainages and lakes according to provisions of Section 1601 and 1602 of the California Fish and Game Code. Activities that may substantially modify such waters through the diversion or obstruction of their natural flow, change or use of any material from their bed or bank, or the deposition of debris require a Notification of Lake or Streambed Alteration. If CDFW determines that the activity may

adversely affect fish and wildlife resources, a Lake or Streambed Alteration Agreement will be prepared. Such an agreement typically stipulates that certain measures will be implemented to protect the habitat values of the lake or drainage in question.

3.3 POTENTIALLY SIGNIFICANT PROJECT IMPACTS/MITIGATION

The project is the construction and operation of a groundwater recharge facility utilizing a combination of existing (Phase 1) and proposed (Phase 2 or later) infrastructure. Existing infrastructure comprises two recharge basins totaling 9 acres, two turnouts, approximately 1.4 miles of pipeline, and six wells. New infrastructure will comprise two recharge basins totaling 36 acres, two short segments of 15” gravity-fed pipe that will interconnect facility basins, approximately 0.3 mile of 15” pipe that will connect an existing well to the Tule River Intertie, and a new inlet on the east bank of the Tule River Intertie (collectively Phase 2), and possible new recovery wells to be developed in future project phases. For the purposes of this analysis, it is assumed that any new wells would be sited within areas proposed for disturbance under Phase 2. If future wells are to be sited outside of Phase 2 boundaries, separate environmental review would be undertaken.

All existing and proposed infrastructure would be subject to ongoing operations and maintenance activities as identified and described in Section 1.1.

3.3.1 Project-Related Mortality of the San Joaquin Kit Fox

Potential Impacts. The project site consists primarily of intensively maintained lands of limited value for the San Joaquin kit fox (*Vulpes macrotis mutica*) (SJKF), and this species has not been documented in the project vicinity for over 25 years. However, because the SJKF is wide-ranging and adaptable, there is some potential for it to pass through the site from time to time, possibly foraging in the site’s agricultural field and denning along the margins of the field or recharge basins. If one or more individuals of this species are present on site at the time of construction or ground-disturbing operations and maintenance activities, they may be vulnerable to project-related injury or mortality. Project-related injury or mortality of the SJKF is considered a potentially significant impact of the project under CEQA.

Mitigation. The following measures derived from the USFWS 2011 *Standardized Recommendations for Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance* (Appendix D) will be implemented:

Mitigation Measure 3.3.1a (Preconstruction Surveys). Preconstruction surveys for the SJKF shall be conducted no less than 14 days and no more than 30 days prior to the start of Phase 2 construction, future recovery well development, and any operations and maintenance activities involving ground disturbance. Each survey is to cover the work area(s) in question and adjacent lands within 200 feet (“survey area”). For each survey, the primary objective will be to identify kit fox habitat features (e.g., potential dens and refugia) within the survey area and evaluate their use by kit foxes. If an active kit fox den is detected, the USFWS shall be contacted immediately to determine the best course of action. For any given project activity requiring preconstruction surveys, surveys will be repeated following any lapses in construction of 30 days or more.

Mitigation Measure 3.3.1b (Avoidance). Should active kit fox dens be detected during preconstruction surveys, the Sacramento Field Office of the USFWS and the Fresno Field Office of CDFW will be notified. A disturbance-free buffer will be established around the burrows in consultation with the USFWS and CDFW, to be maintained until an agency-approved biologist has determined that the burrows have been abandoned.

Mitigation Measure 3.3.1c (Minimization). During Phase 2 construction, future recovery well development, and operations and maintenance activities involving ground disturbance, the Construction and Ongoing Operational Requirements section of the *Standardized Recommendations* shall be fully implemented to minimize potential impacts on the SJKF.

Mitigation Measure 3.3.1d (Employee Education Program). An Employee Education Program shall be developed by a qualified biologist and presented by the applicant or their representative to any personnel or contractors that will be involved with Phase 2 construction, future recovery well development, and ground-disturbing operations and maintenance activities, prior to those individuals being allowed to perform work on site. The program will include a description of the SJKF and its habitat needs; a report of the occurrence of kit fox in the project vicinity; an explanation of the status of the species and its protection under the Endangered Species Act; and a list of the measures being taken to reduce impacts to the species during construction. Attendees will be provided a handout with all of the training information included on it.

Mitigation Measure 3.3.1e (Mortality Reporting). The Sacramento Field Office of the USFWS and the Fresno Field Office of CDFW will be notified in writing within three working days in case of the accidental death or injury to a San Joaquin kit fox during construction. Notification must include the date, time, location of the incident or of the finding of a dead or injured animal, and any other pertinent information.

Implementation of the above measures will reduce potential impacts to the San Joaquin kit fox from project-related injury or mortality to a less than significant level under CEQA, and will ensure compliance with state and federal laws protecting this species.

3.3.2 Project-Related Mortality/Disturbance of the Burrowing Owl

Potential Impacts. The site's habitats are only marginally suitable for the burrowing owl (*Athene cunicularia*) and burrowing owls have never been documented in the project vicinity; the closest known occurrences are more than 10 miles away. However, should this species occur in the area, there is some potential for it to nest or roost in the site's ruderal areas or along the margins of the agricultural field and recharge basins, and to use the field and basins for foraging. Burrowing owls are highly mobile while foraging, and it is anticipated that any burrowing owls attempting to forage on site at the time of construction would simply fly away from construction disturbance. However, if burrowing owls are occupying burrows on site at the time of construction or ground-disturbing operations and maintenance activities, owls could be vulnerable to project-related injury or mortality. If construction or ground-disturbing operations and maintenance activities occur during the nesting season, burrowing owls could be disturbed by such activities such that they would abandon their young. Project-related injury, mortality, or disturbance of burrowing owls is considered a potentially significant impact under CEQA.

Mitigation. In order to minimize construction-related impacts to burrowing owls, the applicant will implement the following measures:

Mitigation Measure 3.3.2a (Take Avoidance Surveys). Take avoidance surveys for burrowing owls shall be conducted by a qualified biologist within 30 days prior to the start of Phase 2 construction, future recovery well development, and any operations and maintenance activities involving ground disturbance. The surveys will be conducted according to methods described in the *Staff Report on Burrowing Owl Mitigation* (CDFG 2012). Each survey is to cover the work area(s) in question and adjacent lands within 200 meters, where potential nesting or roosting habitat is present ("survey area").

Mitigation Measure 3.3.2b (Avoidance of Nest Burrows). If construction or ground-disturbing operations and maintenance activities are to occur during the breeding season (February 1-August 31) and active nest burrows are identified within the survey area, a 200-meter disturbance-free buffer will be established around each burrow. The buffers will be enclosed with temporary fencing to prevent encroachment by construction

equipment and workers. Buffers will remain in place for the duration of the breeding season, unless otherwise arranged with CDFW. After the breeding season, passive relocation of any remaining owls may take place as described below.

Mitigation Measure 3.3.2c (Avoidance or Passive Relocation of Resident Owls). During the non-breeding season (September 1-January 31), resident owls occupying burrows in work areas associated with Phase 2 construction, future recovery well development, or ground-disturbing operations and maintenance activities may either be avoided, or passively relocated to alternative habitat. If the applicant chooses to avoid active owl burrows within the work area during the non-breeding season, a 50-meter disturbance-free buffer will be established around these burrows. The buffers will be enclosed with temporary fencing, and will remain in place until a qualified biologist determines that the burrows are no longer active. If the applicant chooses to passively relocate owls during the non-breeding season, this activity will be conducted in accordance with a relocation plan prepared by a qualified biologist.

Compliance with the above mitigation measures will reduce potential impacts to the burrowing owl from project-related injury, mortality, or disturbance to a less than significant level under CEQA, and will ensure that the project is in compliance with state and federal laws protecting this species.

3.3.3 Project-Related Disturbance of Nesting Swainson's Hawks

Potential Impacts. Swainson's hawks (*Buteo swainsoni*) are occasionally sighted in the project vicinity, and there is a known nesting occurrence approximately 2 miles northeast of the project site. Although nesting habitat is absent from the project site itself, Swainson's hawks could potentially nest in ornamental trees on nearby rural residential properties, and could forage in the site's agricultural field and basins from time to time. Construction activities do not have the potential to injure or kill foraging Swainson's hawks because the Swainson's hawk is highly mobile while foraging and would be expected to simply fly away from construction disturbance. However, if Swainson's hawks are nesting adjacent to work areas at the time of construction or ground-disturbing operations and maintenance activities, hawks could be disturbed and possibly abandon their nests. Project-related disturbance of nesting Swainson's hawks is considered a potentially significant impact of the project under CEQA.

Mitigation. The applicant will implement the following measures to avoid and minimize the potential for project-related disturbance of nesting Swainson's hawks.

Mitigation Measure 3.3.3a (Construction Timing). If feasible, Phase 2 construction, future recovery well development, and ground-disturbing operations and maintenance activities will occur entirely outside the Swainson's hawk nesting season, typically defined as March 1-September 15.

Mitigation Measure 3.3.3b (Preconstruction Surveys). If Phase 2 construction, future recovery well development, or ground-disturbing operations and maintenance activities must occur between March 1 and September 15, then within 10 days prior to the start of work, a qualified biologist will conduct preconstruction surveys for Swainson's hawk nests on and within ½ mile of the work area(s) in question.

Mitigation Measure 3.3.3c (Avoidance). Should any active nests be identified, the biologist will establish a suitable disturbance-free buffer around the nest. This buffer will be identified on the ground with flagging or fencing, and will be maintained until the biologist has determined that the young have fledged.

Implementation of these measures will reduce potential impacts to the Swainson's hawk from project-related disturbance to a less than significant level under CEQA, and ensure compliance with state and federal laws protecting this species.

3.3.4 Project-Related Mortality/Disturbance of Other Nesting Birds and Raptors Including the Tricolored Blackbird

Potential Impacts. The project site has the potential to be used for nesting by a number of avian species protected by state and federal laws. When planted to a suitable crop like wheat or triticale, the site's agricultural field could support nesting by the red-winged blackbird, and possibly the tricolored blackbird (*Agelaius tricolor*), which is listed as threatened under the California Endangered Species Act. House finches, black phoebes, and other birds that nest on human-made structures may nest on existing well infrastructure or turnouts. Disturbance-tolerant, ground-nesting species such as the mourning dove or killdeer could nest in virtually any part of the project site. Although the site's immature pistachio trees are unlikely to be used for nesting based on their current growth stage, they may provide suitable nesting habitat for a variety of species in future years. If any birds were to be nesting on or adjacent to work areas at the time of construction or certain operations and maintenance activities, they could be injured, killed, or disturbed such that they would abandon their nests. Project-related injury or mortality of nesting birds or disturbance leading to nest abandonment would violate state and federal laws and be considered a significant impact of the project under CEQA.

The tricolored blackbird also has the potential to forage in the site's agricultural field and recharge basins. This species is highly mobile while foraging and would not be vulnerable to construction-related injury or mortality during this activity.

Mitigation. The applicant will implement the following measures to avoid and minimize the potential for project-related mortality/disturbance of nesting birds and raptors, as necessary.

Mitigation Measure 3.3.3a (Construction Timing). If feasible, Phase 2 construction, future recovery well development, and operations and maintenance activities involving ground disturbance and/or vegetation removal will take place entirely outside of the avian nesting season, typically defined as February 1 to August 31.

Mitigation Measure 3.3.3b (Preconstruction Surveys). If Phase 2 construction, future recovery well development, or operations and maintenance activities involving ground disturbance and/or vegetation removal must occur between February 1 and August 31, then within 10 days prior to the start of work, a qualified biologist will conduct preconstruction surveys for active bird nests on and within 500 feet of the work area(s) in question.

Mitigation Measure 3.3.3c (Avoidance). Should any active nests be identified, the biologist will establish suitable disturbance-free buffers around the nests. Buffers will be identified on the ground with flagging or fencing, and will be maintained until the biologist has determined that the young have fledged and the nests are no longer active.

Compliance with the above mitigation measures would reduce impacts to nesting birds and raptors, including the state-threatened tricolored blackbird, to a less than significant level under CEQA and ensure compliance with state and federal laws protecting these species.

3.4 LESS THAN SIGNIFICANT PROJECT IMPACTS

3.4.1 Project Impacts to Special Status Plants

Potential Impacts. Twenty special status vascular plant species are known to occur in the region (see Table 1). Due to the absence of suitable habitat and/or the site's being situated outside of the species' known distribution, none of these species are expected to occur on site. Therefore, the project would not adversely affect any of these species and impacts would be less than significant as defined by CEQA.

Mitigation. Mitigation is not warranted.

3.4.2 Project Impacts to Special Status Animal Species Absent from or Unlikely to Occur on the Project Site

Potential Impacts. Of the 16 special status animal species that potentially occur in the project vicinity, nine are considered absent or unlikely to occur on site due to past and ongoing disturbance of the site and surrounding lands, the absence of suitable habitat, and/or the site's being situated outside of the species' known distribution. These species include the Crotch bumble bee (*Bombus crotchii*), vernal pool fairy shrimp (*Branchinecta lynchi*), blunt-nosed leopard lizard (*Gambelia sila*), California condor (*Gymnogyps californianus*), Tipton kangaroo rat (*Dipodomys nitratoides nitratoides*), San Joaquin kit fox, western spadefoot (*Spea hammondi*), northern California legless lizard (*Anniella pulchra*), and American badger (*Taxidea taxus*) (see Table 1). Potential impacts to the San Joaquin kit fox were identified and fully mitigated in Section 3.3.1, and will not be re-addressed in this section. The project does not have the potential to impact the remaining eight species through project-related mortality or loss of habitat because there is little or no likelihood that they are present.

Mitigation. Mitigation is not warranted.

3.4.3 Project-Related Mortality of Special Status Animal Species that May Occur on the Project Site as Occasional or Regular Foragers but Breed Elsewhere

Potential Impacts. Four special status animals, the northern harrier (*Circus cyaneus*), pallid bat (*Antrozous pallidus*), Townsend's big-eared bat (*Corynorhinus townsendii*), and western mastiff bat (*Eumops perotis californicus*), have the potential to forage on the site from time to time but would not breed on-site or close enough to the site that they would be vulnerable to project-related disturbance at their nest or roost sites (see Table 1). Foraging individuals of these species would not be vulnerable to construction-related injury or mortality because they are highly mobile and would be expected to simply avoid active work areas.

Mitigation. Mitigation is not warranted.

3.4.4 Loss of Habitat for Special Status Animals that Could Occur on Site

Potential Impacts. Although the project site has the potential to be used in some form by the San Joaquin kit fox, burrowing owl, Swainson's hawk, tricolored blackbird, northern harrier, pallid bat, Townsend's big-eared bat, and western mastiff bat, it is not expected to adversely affect these species through loss of habitat. The site's habitats are intensively maintained, frequently disturbed, and of relatively low value for most of these species under existing conditions. Habitat for these species will not be completely eliminated by proposed construction, as the completed groundwater recharge facility will retain modest foraging suitability during dry periods, and special status bats may continue foraging in flight over the project site following project development. Moreover, habitats of similar or higher quality to those of the project site are regionally abundant. For these reasons, loss of habitat for the San Joaquin kit fox, burrowing owl, Swainson's hawk, tricolored blackbird, northern harrier, pallid bat, Townsend's big-eared bat, and western mastiff bat is considered a less than significant impact of the project under CEQA.

Mitigation. Mitigation is not warranted.

3.4.5 Project Impacts to Wildlife Movement Corridors

Potential Impacts. The project site does not contain features likely to function as a wildlife movement corridor. Potential project impacts to wildlife movement and wildlife movement corridors are considered less than significant under CEQA.

Mitigation. No mitigation is warranted.

3.4.6 Project Impacts to Jurisdictional Waters and Wetlands

Potential Impacts. Proposed construction of an inlet into the Tule River Intertie may impact a small area on the upper bank of this waterway. The function and value of the waterway would not be substantially altered, and impacts are considered less than significant under CEQA. Moreover, because this waterway is unlikely to fall under the jurisdiction of the USACE or CDFW, no Section 404 permit or Streambed Alteration Agreement is likely to be required. The

applicant is advised to consult with the Central Valley RWQCB prior to developing this project component, however, as the Tule River Intertie may be considered a Water of the State, and Waste Discharge Requirements or a waiver thereof may be necessary.

Mitigation. No mitigation is warranted.

3.4.7 Project Impacts to Designated Critical Habitat and Sensitive Natural Communities

Potential Impacts. Designated critical habitat, sensitive natural communities, and other sensitive habitats are absent from the project site and adjacent lands. The project will have no impact on such habitats.

Mitigation. No mitigation is warranted.

3.4.8 Local Policies or Habitat Conservation Plans

Potential Impacts. The proposed project appears to be consistent with the goals and policies of the Tulare County General Plan, and would not conflict with any other local policies or ordinances protecting biological resources. The project is not subject to any Habitat Conservation Plans or Natural Community Conservation Plans.

Mitigation. No mitigation is warranted.

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APPENDIX A: VASCULAR PLANTS OF THE PROJECT SITE

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The vascular plant species listed below were observed on the project site during field surveys conducted by Live Oak Associates, Inc. on June 2 and/or August 4, 2020. The U.S. Fish and Wildlife Service wetland indicator status of each plant has been shown following its common name.

OBL - Obligate
 FACW - Facultative Wetland
 FAC - Facultative
 FACU - Facultative Upland
 UPL - Upland
 NR - No review
 NA - No agreement
 NI - No investigation

AMARATHACEAE- Amaranth Family		
<i>Amaranthus albus</i>	Tumbleweed	FACU
ASTERACEAE – Sunflower Family		
<i>Erigeron bonariensis</i>	Flax-leaved Horseweed	UPL
<i>Erigeron canadensis</i>	Canada Horseweed	UPL
<i>Lactuca serriola</i>	Prickly Lettuce	FACU
<i>Helianthus annuus</i>	Annual Sunflower	FACU
BORAGINACEAE – Borage Family		
<i>Heliotropium curassavicum</i>	Salt Heliotrope	FACU
BRASSICACEAE – Mustard Family		
<i>Hirschfeldia incana</i>	Mustard	
<i>Sisymbrium irio</i>	London Rocket	UPL
CHENOPODIACEAE – Goosefoot Family		
<i>Chenopodium album</i>	Lamb’s Quarters	FACU
<i>Rumex crispus</i>	Curly Dock	FAC
<i>Salsola tragus</i>	Russian Thistle	FACU
CYPERACEAE – Umbrella Sedge Family		
<i>Cyperus</i> sp.	Nutsedge	
<i>Eleocharis palustris</i>	Common Spikerush	OBL
EUPHORBACEAE – Spurge Family		
<i>Euphorbia maculata</i>	Spotted Spurge	UPL
FABACEAE – Legume Family		
<i>Melilotus</i> sp.	Sweetclover	
GERANIACEAE – Geranium Family		
<i>Erodium cicutarium</i>	Red-stemmed Filaree	UPL
MALVACEAE – Mallow Family		
<i>Malva parviflora</i>	Mallow	UPL
ONAGRACEAE – Willow Herb Family		
<i>Epilobium brachycarpum</i>	Perennial Willow Herb	UPL

POACEAE – Grass Family

<i>Avena</i> sp.	Wild Oats	UPL
<i>Bromus catharticus</i>	Rescue Grass	UPL
<i>Bromus diandrus</i>	Rippgut Brome	UPL
<i>Digitaria</i> sp.	Big Crabgrass	
<i>Echinochloa crus-galli</i>	Barnyard Grass	FACW
<i>Hordeum murinum</i>	Foxtail Barley	FACU
<i>Leptochloa fusca</i> ssp. <i>uninervia</i>	Mexican Sprangletop	FACW
<i>Triticum</i> sp.	Cultivated Wheat	UPL

POLYGONACEAE – Buckwheat Family

<i>Persicaria lapathifolia</i>	Common Knotweed	FACW
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PORTULACACEAE – Purslane Family

<i>Portulaca oleracea</i>	Common Purslane	FAC
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SOLANACEAE – Potato Family

<i>Nicotiana glauca</i>	Tree Tobacco	FAC
<i>Solanum nigrum</i>	Black Nightshade	FACU

ZYGOPHYLLACEAE – Puncture Vine Family

<i>Tribulus terrestris</i>	Puncture Vine	UPL
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**APPENDIX B: TERRESTRIAL VERTEBRATE SPECIES THAT POTENTIALLY
OCCUR ON THE PROJECT SITE**

APPENDIX B: TERRESTRIAL VERTEBRATE SPECIES THAT POTENTIALLY OCCUR ON THE PROJECT SITE

The species listed below are those that may reasonably be expected to use the habitats of the project site routinely or from time to time. The list was not intended to include birds that are vagrants or occasional transients. Terrestrial vertebrate species observed in or adjacent to the project site during the surveys conducted by Live Oak Associates, Inc. on June 2 and/or August 4, 2020 have been noted with an asterisk.

CLASS: AMPHIBIA (Amphibians)

ORDER: SALIENTIA (Frogs and Toads)

FAMILY: BUFONIDAE (True Toads)

Western Toad (*Bufo boreas*)

FAMILY: HYLIDAE (Treefrogs and relatives)

Sierran Treefrog (*Pseudacris sierra*)

FAMILY: RANIDAE (True Frogs)

*American Bullfrog (*Lithobates catesbeianus*)

CLASS: REPTILIA (Reptiles)

ORDER: SQUAMATA (Lizards and Snakes)

SUBORDER: SAURIA (Lizards)

FAMILY: PHRYNOSOMATIDAE

*Western Fence Lizard (*Sceloporus occidentalis*)

Side-Blotched Lizard (*Uta stansburiana*)

SUBORDER: SERPENTES (Snakes)

FAMILY: COLUBRIDAE (Colubrids)

Gopher Snake (*Pituophis melanoleucus*)

Common Kingsnake (*Lampropeltis getulus*)

Common Garter Snake (*Thamnophis sirtalis*)

FAMILY: VIPERIDAE (Vipers)

Western Rattlesnake (*Crotalus viridis*)

CLASS: AVES (Birds)

ORDER: ANSERIFORMES (Screamers, Ducks and Relatives)

FAMILY: ANATIDAE (Swans, Geese and Ducks)

Canada Goose (*Branta canadensis*)

Cinnamon Teal (*Spatula cynoptera*)

Mallard (*Anas platyrhynchos*)

ORDER: GALLIFORMES (Grouse and Quail)

FAMILY: ODONTOPHORIDAE (Quails)

California Quail (*Callipepla californica*)

ORDER: COLUMBIFORMES (Pigeons and Doves)

FAMILY: COLUMBIDAE (Pigeons and Doves)

Rock Dove (*Columba livia*)

Eurasian Collared Dove (*Streptopelia decaocto*)
 *Mourning Dove (*Zenaida macroura*)
ORDER: APODIFORMES (Swifts and Hummingbirds)
FAMILY: TROCHILIDAE (Hummingbirds)
 Anna's Hummingbird (*Calypte anna*)
 Rufous Hummingbird (*Selasphorus rufus*)
 Black-Chinned Hummingbird (*Archilochus alexandri*)
ORDER: GRUIFORMES (Cranes, Rails, and Allies)
FAMILY: RALLIDAE (Rails, Gallinules, and Coots)
 American Coot (*Fulica americana*)
ORDER: CHARADRIIFORMES (Shorebirds, Gulls, and Relatives)
FAMILY: RECURVIROSTRIAE (Avocets and Stilts)
 Black-Necked Stilt (*Himantopus mexicanus*)
 American Avocet (*Recurvirostra americana*)
FAMILY: CHARADRIIDAE (Plovers and Lapwings)
 *Killdeer (*Charadrius vociferus*)
FAMILY: COLOPACIDAE (Sandpipers and Relatives)
 Greater Yellowlegs (*Tringa melanoleuca*)
 Least Sandpiper (*Calidris minutilla*)
FAMILY: LARIDAE (Skuas, Gulls, Terns and Skimmers)
 Ring-billed Gull (*Larus delawarensis*)
 California Gull (*Larus californicus*)
ORDER: PELICANIFORMES (Wading Birds)
FAMILY: ARDEIDAE (Hérons and Bitterns)
 *Great Blue Heron (*Ardea herodias*)
 Great Egret (*Ardea alba*)
 Snowy Egret (*Egretta thula*)
 Cattle Egret (*Bubulcus ibis*)
 Green Heron (*Butorides virescens*)
FAMILY: THRESKIORNITHIDAE (Ibises and Spoonbills)
 White-Faced Ibis (*Plegadis chihi*)
ORDER: FALCONIFORMES (Vultures, Hawks, and Falcons)
FAMILY: CATHARTIDAE (American Vultures)
 Turkey Vulture (*Cathartes aura*)
FAMILY: ACCIPITRIDAE (Hawks, Old World Vultures, and Harriers)
 Red-Tailed Hawk (*Buteo jamaicensis*)
 Red-Shouldered Hawk (*Buteo lineatus*)
 Northern Harrier (*Circus cyaneus*)
 Swainson's Hawk (*Buteo swainsoni*)
FAMILY: FALCONIDAE (Caracaras and Falcons)
 American Kestrel (*Falco sparverius*)
ORDER: STRIGIFORMES (Owls)
FAMILY: TYTONIDAE (Barn Owls)
 Common Barn Owl (*Tyto alba*)
FAMILY: STRIGIDAE (Typical Owls)

Great Horned Owl (*Bubo virginianus*)
ORDER: PICIFORMES (Woodpeckers and relatives)
FAMILY: PICIDAE (Woodpecker and Wrynecks)
 Northern Flicker (*Colaptes chrysoides*)
 Nuttall's Woodpecker (*Picoides nuttallii*)
ORDER: PASSERIFORMES (Perching Birds)
FAMILY: TYRANNIDAE (Tyrant Flycatchers)
 *Black Phoebe (*Sayornis nigricans*)
 Say's Phoebe (*Sayornis saya*)
 Western Kingbird (*Tyrannus verticalis*)
FAMILY: CORVIDAE (Jays, Magpies, and Crows)
 Western Scrub Jay (*Aphelocoma coerulescens*)
 American Crow (*Corvus brachyrhynchos*)
 *Common Raven (*Corvus corax*)
FAMILY: ALAUDIDAE (Larks)
 Horned Lark (*Eremophila alpestris*)
FAMILY: HIRUNDINIDAE (Swallows)
 Tree Swallow (*Tachycineta bicolor*)
 *Cliff Swallow (*Petrochelidon pyrrhonota*)
 *Barn Swallow (*Hirundo rustica*)
FAMILY: TROGLODYTIDAE (Wrens)
 House Wren (*Troglodytes aedon*)
 Bewick's Wren (*Thryomanes bewickii*)
FAMILY: REGULIDAE (Kinglets)
 Ruby-Crowned Kinglet (*Regulus calendula*)
FAMILY: TURDIDAE (Thrushes)
 Western Bluebird (*Sialia mexicana*)
 American Robin (*Turdus migratorius*)
FAMILY: MIMIDAE (Mockingbirds and Thrashers)
 Northern Mockingbird (*Mimus polyglottos*)
FAMILY: STURNIDAE (Starlings)
 European Starling (*Sturnus vulgaris*)
FAMILY: MOTACILLIDAE (Wagtails and Pipits)
 *American Pipit (*Anthus rubescens*)
FAMILY: BOMBYCILLIDAE (Waxwings)
 Cedar Waxwing (*Bombycilla cedrorum*)
FAMILY: PARULIDAE (Wood Warblers and Relatives)
 Yellow-Rumped Warbler (*Dendroica coronata*)
FAMILY: EMBERIZIDAE (Emberizines)
 Savannah Sparrow (*Passerculus sandwichensis*)
 White-Crowned Sparrow (*Zonotrichia leucophrys*)
 Golden-Crowned Sparrow (*Zonotrichia atricapilla*)
 Dark-Eyed Junco (*Junco hyemalis*)
FAMILY: ICTERIDAE (Blackbirds, Orioles and Allies)
 Red-Winged Blackbird (*Agelaius phoeniceus*)

Western Meadowlark (*Sturnella neglecta*)
Great-Tailed Grackle (*Quiscalus mexicanus*)
*Brewer's Blackbird (*Euphagus cyanocephalus*)
Brown-Headed Cowbird (*Molothrus ater*)
Bullock's Oriole (*Icterus bullockii*)
FAMILY: FRINGILLIDAE (Finches)
*House Finch (*Carpodacus mexicanus*)
Lesser Goldfinch (*Carduelis psaltria*)
Lawrence's Goldfinch (*Spinus lawrencei*)
American Goldfinch (*Spinus tristis*)
FAMILY: PASSERIDAE (Old World Sparrows)
House Sparrow (*Passer domesticus*)

CLASS: MAMMALIA (Mammals)

ORDER: DIDELPHIMORPHIA (Marsupials)

FAMILY: DIDELPHIDAE (Opossums)

Virginia Opossum (*Didelphis virginiana*)

ORDER: INSECTIVORA (Insectivores)

Ornate Shrew (*Sorex ornatus*)

FAMILY: TALPIDAE (Moles)

Broad-Footed Mole (*Scapanus latimanus*)

ORDER: CHIROPTERA (Bats)

FAMILY: PHYLLOSTOMIDAE (Leaf-nosed Bats)

Southern Long-nosed Bat (*Leptonycteris curasoae*)

FAMILY: VESPERTILIONIDAE (Evening Bats)

Yuma Myotis (*Myotis yumanensis*)

California Myotis (*Myotis californicus*)

Western Pipistrelle (*Pipistrellus hesperus*)

Big Brown Bat (*Eptesicus fuscus*)

Hoary Bat (*Lasiurus cinereus*)

Pallid Bat (*Antrozous pallidus*)

FAMILY: MOLOSSIDAE (Free-tailed Bat)

Brazilian Free-Tailed Bat (*Tadarida brasiliensis*)

ORDER: LAGOMORPHA (Rabbits, Hares, and Pikas)

FAMILY: LEPORIDAE (Rabbits and Hares)

Audubon Cottontail Rabbit (*Sylvilagus audubonii*)

Black-tailed (Hare) Jackrabbit (*Lepus californicus*)

ORDER: RODENTIA (Rodents)

FAMILY: SCIURIDAE (Squirrels, Chipmunks, and Marmots)

*California Ground Squirrel (*Otospermophilus beecheyi*)

FAMILY: GEOMYIDAE (Pocket Gophers)

Botta's Pocket Gopher (*Thomomys bottae*)

FAMILY: HETEROMYIDAE (Pocket Mice and Kangaroo Rats)

San Joaquin Pocket Mouse (*Perognathus inornatus*)

FAMILY: MURIDAE (Old World Rats and Mice)

Western Harvest Mouse (*Reithrodontomys megalotis*)

Deer Mouse (*Peromyscus maniculatus*)

Norway Rat (*Rattus norvegicus*)

House Mouse (*Mus musculus*)

California Vole (*Microtus californicus*)

ORDER: CARNIVORA (Carnivores)

FAMILY: CANIDAE (Foxes, Wolves, and relatives)

Coyote (*Canis latrans*)

Feral Dog (*Canis lupus familiaris*)

Red Fox (*Vulpes vulpes*)

Gray fox (*Urocyon cinereoargenteus*)

FAMILY: PROCYONIDAE (Raccoons and relatives)

Raccoon (*Procyon lotor*)

FAMILY: MEPHITIDAE (Skunks)

*Striped Skunk (*Mephitis mephitis*)

FAMILY: FELIDAE (Cats)

Feral Cat (*Felis domesticus*)

Bobcat (*Lynx rufus*)

APPENDIX C: SELECTED PHOTOGRAPHS OF THE PROJECT SITE



Photos 1 (above) and 2 (below): Eastern Phase 1 basin. At the time of the surveys, the basin had been recently disced and was mostly barren of vegetation (above); however, a remnant borrow pit and stockpiles (below) supported dense growth of common weeds.





Photos 3 (above) and 4 (below): Western phase 1 basin. This basin was newly constructed and entirely barren of vegetation at the time of the August 4 field survey, save the northwestern corner (below) where an existing agricultural basin had been merged into the new basin.





Photo 5 (above): Existing turnout on the FKC. **Photo 6 (below):** Immature pistachio orchard; future location of the eastern Phase 2 basin.





Photo 7 (above): Disced agricultural field; future location of the western Phase 2 basin. **Photo 8 (below):** Tule River Intertie, facing south; future location of the proposed inlet structure.



APPENDIX D: USFWS 2011 STANDARDIZED RECOMMENDATIONS FOR THE PROTECTION OF THE ENDANGERED SAN JOAQUIN KIT FOX 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.