DRAFT
BIOLOGICAL RESOURCES EVALUATION

TIDEWATER CROSSING

LSA

April 2006

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TIDEWATER CROSSING

SAN JOAQUIN COUNTY, CALIFORNIA

Submitted to:

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LSA Project No. HDA530

LSA

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CHAPTER 1.0 INTRODUCTION

This report presents the findings of a biological resources evaluation prepared by LSA Associates, Inc. (LSA) for the Tidewater Crossing Specific Plan project area (hereafter referred to as "project site"). This report discusses vegetative communities, associated wildlife, and special-status species occurring on the project site, and evaluates the impacts to these resources from the proposed project.

1.1 PROJECT LOCATION

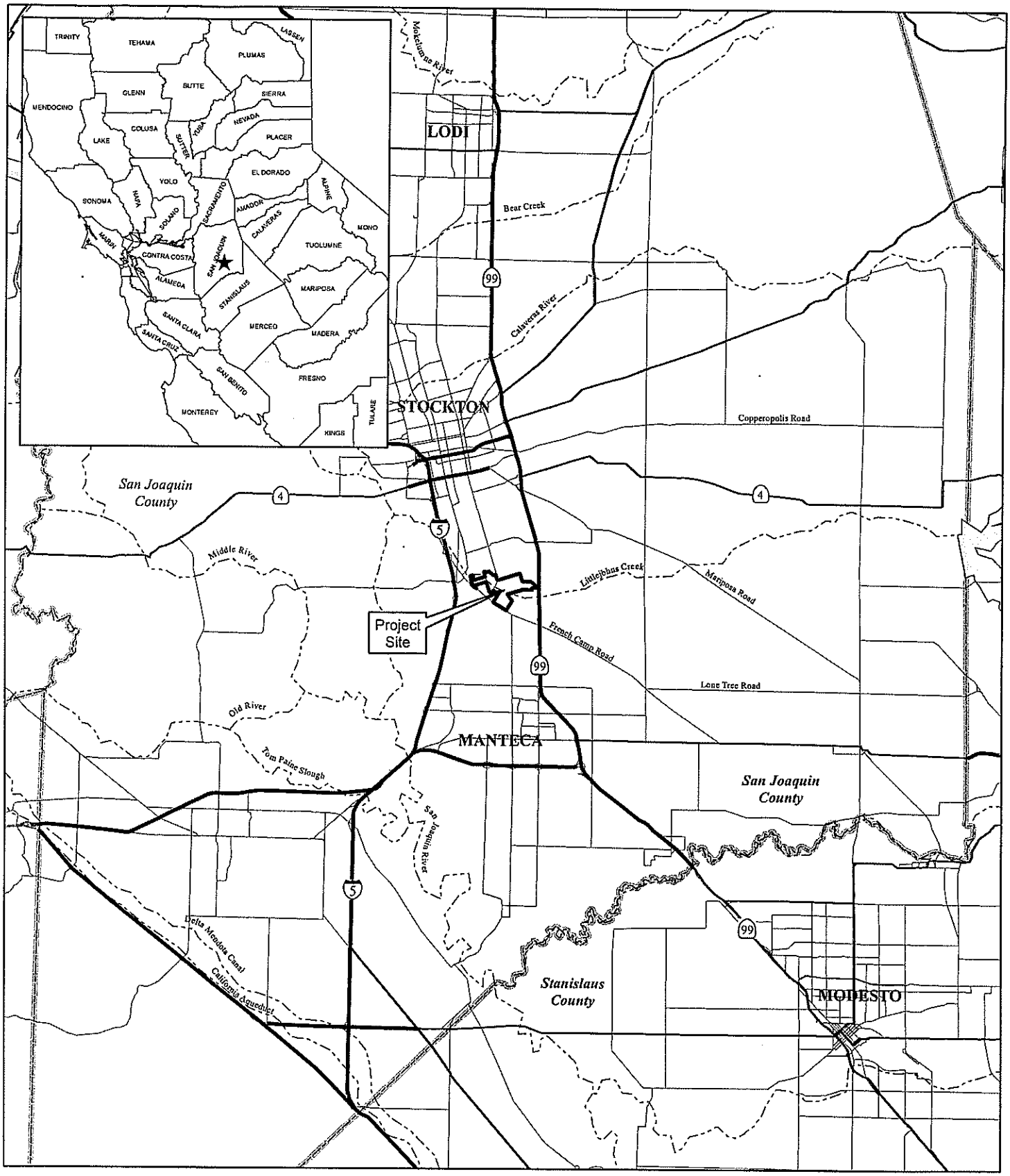
The Master Development Plan Area contains approximately 909 acres, located within San Joaquin County near the southeast portion of the City of Stockton, California (see Figures 1 and 2). The project site is generally bounded by the Stockton Metropolitan Airport to the north, Highway 99 to the east, Union Pacific Railroad to the west, and East French Camp Road to the south.

The project area is comprised mostly of agricultural land (i.e., row crops, orchards) with a few scattered rural residences.

1.2 PROPOSED PROJECT

Arnaiz Development Company, Inc., is proposing to develop industrial/residential uses on the project site. The proposed project includes a General Plan Amendment, Master Development Plan (MDP), prezoning, Tentative Tract Map, Sphere of Influence amendment for a portion of the project, and Annexation and Development Agreement for approximately 909 acres predominately in farmland and rural residential uses. Proposed land uses on the project site include industrial, residential, retail/commercial, parks/buffers, an elementary school, railroad corridor and roadways. A 93 acre flood control/detention basin is planned within the western portion of the planned industrial area to manage peak storm flows.

The proposed project will include two new road crossings over French Camp Slough. The new bridges will span French Camp Slough, and will not impact the channel or banks of the slough. The area along French Camp Slough will be dedicated as open space and will remain undeveloped.



LSA

FIGURE 1

N

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SCALE IN MILES

SOURCE: U.S. CENSUS BUREAU TIGER 2K (2002)

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Tidewater Crossing

Project Location

Figure 2: Project Vicinity

CHAPTER 2.0 METHODS

2.1 LITERATURE SEARCH

Prior to conducting any field work, LSA performed database searches of the California Natural Diversity Database (CNDDB) (2005), and California Native Plant Society (CNPS) Online Inventory (CNPS 2005), referencing the Holt, Stockton East, Stockton West, Peters, Union Island, Lathrop, Manteca, and Avena quadrangles. LSA also consulted the U.S. Fish and Wildlife Service (USFWS), Sacramento Field Office Online list (USFWS 2005) referencing the Stockton East and Stockton West quadrangles. The individual lists are contained in Appendix A.

The special status species lists obtained from the CNDDB, CNPS, and USFWS were reviewed to determine which species could potentially occur within the project area. Those species with potential to occur based on habitat requirements were compiled into a cumulative list (shown in Table 4 Section 5.1). The list includes each species' protection status, habitat information, status on the project site, and supporting comments as necessary. Species requiring specific habitat not present in the vicinity of the project (e.g., vernal pools) were eliminated as potentially occurring and are not discussed further. Those species that could potentially occur on the project site are discussed in Sections 5.2 and 5.3.

2.2 FIELD SURVEYS

Field surveys were conducted from January to June 2006, and are summarized in Table 1, below. Wildlife and plant species observed were recorded during all visits; a comprehensive species list is contained in Appendix B.

Table 1: Summary of Survey Effort

Date	Personnel	Task
January 21, 2005	J. Bray	Reconnaissance survey
January 25, 2005	L. Belt; M. Trueblood	Winter burrowing owl survey
January 31, 2005	L. Belt; M. Trueblood	Winter burrowing owl survey
May 31, 2005	L. Belt; M. Trueblood	Breeding season burrowing owl survey
June 13, 2005	L. Belt	Breeding season burrowing owl survey; raptor nest survey
June 22 and 24, 2005	L. Adams; M. Trueblood	Special status plant survey
June 27, 2005	L. Belt	Breeding season burrowing owl survey; raptor nest survey
July 7, 2005	L. Belt	Breeding season burrowing owl survey; raptor nest survey
July 27, 2005	M. Trueblood	Plant communities mapping
August 16, 2005	C. Meigs; M. Trueblood	Special status plant survey; tree inventory
October 6, 2005	M. Trueblood	Tree inventory
April 26, 2006	J. Bray; M. Trueblood	Wetland delineation
June 5, 2006	J. Bray; M. Trueblood	Wetland delineation

CHAPTER 3.0 SETTING

3.1 GENERAL DESCRIPTION

The project area is located in the southern part of the City of Stockton, San Joaquin County. French Camp Slough flows through the project area. The terrain on the project site is flat. The elevation of the project site is approximately sea level.

The majority of the project site is actively farmed and vegetation is predominantly limited to row crops and orchards. An active grazing pasture and rural residences are located in the western portion of the project site. The vegetation in these areas consists mostly of ruderal species with scattered trees.

Adjacent land uses include the Stockton Airport to the north, agricultural lands to the east and southeast, and mostly low-density residential to the west and southwest.

3.2 SOILS

The Soil Survey for San Joaquin County, California (1992) identifies six soil types on the project site. The boundaries of the soil types are shown in Figure 3. Table 2 provides a summary of key characteristics of these soils.

3.3 PLANT COMMUNITIES/LAND USES AND ASSOCIATED WILDLIFE

3.3.1 Plant Communities

In the following discussion, the names of plant communities follow the standard nomenclature used by Sawyer and Keeler-Wolf (1995), as appropriate. The names of the plant species are consistent with Hickman (1993).

Plant communities and land uses occurring on the project site include agricultural, orchard, valley oak series (riparian and woodland), open water, ruderal, and developed areas. Plant communities are shown in Figure 4. Isolated native trees and groups of trees within agricultural areas and along French Camp Slough were mapped as plant communities based on tree species composition, canopy cover and location (i.e., valley oak woodland, valley oak riparian). Therefore, impacts to trees are considered on a plant community/habitat basis, rather than as impacts to individual trees. A breakdown of the approximate acreages of the plant communities and land uses on the project site is provided below in Table 3.

Figure 3: Soils Map

Table 2: Soils on the Project Site

Map Unit	Soil Series	Location	Soil Depth	Drainage Class	Permeability	Texture
160	Galt Clay, 0-2 percent slopes	basins and basin rims	moderately deep	moderately well-drained	slow	Clay, silty clay, cemented
173	Hollenbeck Silty Clay, 0-2 percent slopes	interfan basins	deep	moderately well-drained	slow	Silty clay, clay, silty clay loam, clay loam, cemented
175	Honcut sandy loam, 0-2 percent slopes	alluvial fans	very deep	well-drained	moderately rapid	Sandy loam, coarse sandy loam.
180	Jacktone clay, 0-2 percent slopes	Basins	moderately deep	somewhat poorly drained	slow	Clay, clay loam, silty clay, indurated, loam, cemented
250	Stockton clay, 0-2 percent slopes	basins	deep	Somewhat poorly drained	slow	Clay, silty clay, clay loam, silty clay loam, cemented
266	Veritas fine, sandy loam, 0-2 percent slopes	low fan terraces	deep	moderately well-drained	moderately rapid	Fine sandy loam, sandy loam, cemented

Figure 4: Plant Communities

Table 3: Acreage of Plant Communities on the Project Site

Plant Community/Land Use	Acreage on the Project Site
Agricultural	720
Orchard	100.4
Valley Oak Series - Woodland	5.7
Open Water	6.3
Ruderal	25
Developed	23.5
Total	**880.9**[1]

3.3.1.1 Agricultural

The majority of the project site is comprised of agricultural land. Agricultural lands are dominated by cultivated row crops and associated weedy species. Also included in this category are minor irrigation ditches directly associated with production of row crops. Fallow fields are included in this community provided they are obviously part of an ongoing agricultural operation.

A total of 720 acres of agricultural land occurs on the project site.

3.3.1.2 Orchard

Orchards consist of stands of trees that are comprised of a single species. Understory vegetation is variable, consisting of ruderal species such as groundsel (*Senecio vulgaris*), Johnsongrass (*Sorghum halepense*), prickly lettuce (*Lactuca serriola*), and shepherd's purse (*Capsella bursa-pastoris*).

A total of 100.4 acres of almond (*Prunus dulcis*) orchard occurs on the project site.

3.3.1.3 Ruderal

Ruderal communities consist of plant species adapted to continuous disturbance, and are usually comprised of weedy species. Typical species occurring in ruderal areas that were observed on the project site include black mustard (*Brassica nigra*), milk thistle (*Silybum marianum*) common groundsel, prickly lettuce, bindweed (*Convolvulus arvensis*), ripgut grass (*Bromus diandrus*), and Johnsongrass.

Approximately 25 acres of ruderal habitat occurs on the project site.

3.3.1.4 Open Water

An open water community on the project site occurs in French Camp Slough and consists of the area within the defined channel. Vegetation in this habitat is sparse and includes patches of water primrose (*Ludwigia peploides*) and willow weed (*Polygonum lapathifolium*).

[1] Excludes railroad and major arterial acreages

Approximately 6.3 acres of open water occur on the project site.

3.3.1.5 Valley Oak Series

Broken patches of valley oak series occur along French Camp Slough, associated irrigation ditches, and in the agricultural land. This series is dominated by valley oak (*Quercus lobata*).

The valley oak series along French Camp Slough and the irrigation ditches is characteristic of riparian habitat. Associated species in these areas include boxelder (*Acer negundo* var. *californica*), mugwort (*Artemisia douglasiana*), Oregon ash (*Fraxinus latifolia*), California rose (*Rosa californica*), narrow-leaf milkweed (*Asclepias fasicularis*), curly dock (*Rumex crispus*), and a variety of grasses.

The valley oak series occurring in the agricultural land is characteristic of woodland habitat. Associated species in these areas include wild oats (*Avena barbata*), soft chess (*Bromus hordeaceus*), yellow star-thistle (*Centaurea solstitialis*), and milk thistle.

Approximately 5.7 acres of valley oak series (riparian and woodland combined) occur on the project site.

3.3.1.6 Developed

Developed areas consist of artificial structures including paved roads, buildings, etc. Developed areas on the project site consist of several residences and associated structures (barns, garages, etc.). Vegetation growing near the residences also includes several large landscape trees, ornamental plants and invasive weedy species.

A total of 23.5 acres of developed areas occur on the project site.

3.3.2 Wildlife Usage

Generally, agricultural lands and orchards do not provide high quality habitat for resident wildlife species. This is due, in part, to extensive land manipulation and pesticide application associated with agricultural operations. Some species, however, inhabit these communities, and orchards may provide cover and foraging habitat for many bird species. Wildlife species observed in these communities during the field surveys include: American robin (*Turdus migratorius*), Brewer's blackird (*Euphagus cyanocephalus*), mourning dove (*Zenaida macroura*), northern mockingbird (*Mimus polyglottos*), killdeer (*Charadrius vociferous*), western kingbird (*Tyrannus verticalis*), and California ground squirrel (*Spermophilus beechyi*). Other wildlife species likely to occur in these areas include raccoon (*Procyon lotor*), coyote (*Canis latrans*), opossum (*Didelphis virginiana*), mule deer (*Odocoileus hemionus*), western harvest mouse (*Reithrodontomys megalotis*), and California meadow vole (*Microtus californicus*). In addition, several raptor species are likely to forage over crop lands, including American kestrel (*Falco sparverius*), white-tailed kite (*Elanus leucurus*), red-tailed hawk (*Buteo jamaicensis*), and Swainson's hawk (*Buteo swainsonii*).

The valley oak series on the project site provides cover, nesting and foraging habitat for many species. Wildlife species associated with valley oak series on the project site include Swainson's hawk (nesting), red-tailed hawk, white tailed-kite, American kestrel, black phoebe (*Sayornis nigricans*), belted kingfisher (*Ceryle alcyon*), raccoon, and opossum.

The slough provides irrigation to the surrounding agricultural fields and collects irrigation discharge. Water levels in French Camp Slough vary throughout the day. The open water community within the slough and irrigation ditches provides habitat for many species, including snowy egret (*Egretta thula*), mallard (*Anas platyrhynchos*), great blue heron (*Ardea herodias*), and great egret (*Ardea alba*). In addition, many bat and bird species potentially forage over the open water.

Man-made structures and trees associated with residences may provide roosting habitat for various bat species, including Mexican free-tailed bat (*Tadarida brasiliensis mexicana*), Yuma myotis (*Myotis yumanensis*), pacific western big-eared bat (*Corynorhinus townsendii townsendii*), and greater western mastiff bat (*Eumops perotis californicus*). Trees associated with residences may provide nesting habitat for several bird species. In addition, a variety of bird species are known to occur in urbanized settings, such as western scrub jay, American robin, house finch (*Carpodacus mexicanus*), house sparrow (*Passer domesticus*), starling (*Sturnus vulgaris*), Brewer's black bird, northern mockingbird, western kingbird, mourning dove, and killdeer.

3.4 AQUATIC RESOURCES ON THE PROJECT SITE

Aquatic resources located on the project site include irrigation canals and French Camp Slough. French Camp Slough is a narrow creek with steep banks that flows in a northwest direction through the project site. French Camp Slough conveys water through the watershed to the San Joaquin River, provides water delivery to the surrounding agricultural fields, and collects irrigation discharge. Littlejohns Creek and Lone Tree Creek are tributaries to French Camp Slough. There are no sandy or muddy beaches, or ox-bows of slow moving water within the project area.

CHAPTER 4.0 REGULATORY BACKGROUND

4.1 SPECIAL STATUS SPECIES

Special status plants and wildlife are those species that are 1) listed as rare, threatened, or endangered by USFWS or CDFG under State or federal endangered species acts (see Section 4.1.1), 2) are on formal lists as candidates for listing as threatened or endangered, 3) are on formal lists as species of concern, or 4) are otherwise recognized at the federal, State, or local level as sensitive.

4.1.1 Federal and California Endangered Species Acts

Under the Federal Endangered Species Act (FESA), it is unlawful to "take" any species listed as threatened or endangered. "Take" is defined as to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." An activity is defined as "take" even if it is unintentional or accidental. Take provisions under FESA apply only to listed fish and wildlife species under the jurisdiction of the USFWS and/or the National Oceanic & Atmospheric Administration, National Marine Fisheries Service (NOAA Fisheries). Consultation with USFWS or NMFS is required if a project "may affect", or result in "take" of, a listed species.

When a species is listed, the USFWS and/or NOAA Fisheries, in most cases, must officially designate specific areas as critical habitat for the species. Consultation with USFWS and/or the NMFS is required for projects that include a federal action or federal funding if the project will modify designated critical habitat.

Under the California Endangered Species Act (CESA), it is unlawful to "take" any species listed as rare, threatened, or endangered. "Take" means to "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." CESA take provisions apply to fish, wildlife, and plant species. Take may result whenever activities occur in areas that support a listed species. Consultation with CDFG is required if a project will result in "take" of a listed species.

4.1.2 Magnuson-Stevens Fishery Conservation and Management Act

Under the Magnuson-Stevens Fishery Conservation and Management Act (MSA), essential fish habitat (EFH) must be designated in every fishery management plan. EFH includes "…those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." The MSA requires consultation with NOAA Fisheries for projects that include a federal action or federal funding and may adversely modify EFH.

4.1.3 Migratory Bird Treaty Act and California Department of Fish and Game Code (Breeding Birds)

The Migratory Bird Treaty Act (MBTA) prohibits actions that will result in "take" of migratory birds, their eggs, feathers, or nests. "Take" is defined in the MBTA to include by any means or in any manner, any attempt at hunting, pursuing, wounding, killing, possessing or transporting any migratory bird, nest, egg, or part thereof.

Migratory birds are also protected, as defined in the MBTA, under Section 3513 of the California Fish and Game Code. In addition, Section 33503 of the California Fish and Game Code prohibits the take, possession, or needless destruction of the nest or eggs of any bird, except as otherwise provided by the California Fish and Game Code or other regulation.

4.2 JURISDICTIONAL WATERS

4.2.1 Army Corps of Engineers Jurisdictional Waters

Under Section 404 of the Clean Water Act (CWA), the Army Corps of Engineers (Corps) regulates the discharge of dredged or fill material into waters of the U.S. Waters of the U.S. are those waters that have a connection to interstate commerce, either direct via a tributary system or indirect through a nexus identified in the Corps regulations. In non-tidal waters, the lateral limit of jurisdiction under Section 404 extends to the ordinary high water mark (OHWM) of a waterbody or, where adjacent wetlands are present, beyond the OHWM to the limit of the wetlands. The OHWM is defined as "that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear natural line impressed on the bank, shelving, changes in the character of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding area" (33 CFR 328.3). In tidal waters, the lateral limit of jurisdiction extends to the high tidal line (HTL) or, where adjacent wetlands are present, beyond the HTL to the limit of the wetlands.

Wetlands. Wetlands are defined as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for a life in saturated soil conditions."

Nonwetland Waters. Nonwetland waters essentially include any body of water, not otherwise exempted, that displays an OHWM.

4.2.2 Regional Water Quality Control Board

Under Section 401 of the CWA, the State Water Resources Control Board must certify all activities requiring a 404 permit. The Regional Water Quality Control Board (RWQCB) regulates these activities and issues water quality certification for those activities requiring a 404 permit. In addition, the RWQCB has authority to regulate the discharge of "waste" into waters of the State pursuant to the Porter-Cologne Water Quality Control Act (P-C).

4.2.3 California Department of Fish and Game Jurisdiction

CDFG, through provisions of Sections 1600-1616 of the State of California Code of Regulations, is empowered to issue agreements for any alteration of a river, stream, or lake where fish or wildlife resources may be substantially adversely affected. Streams (and rivers) are defined by the presence of a channel bed and banks, and the conveyance of at least ephemeral flows. CDFG regulates wetland areas only to the extent that those wetlands are part of a river, stream, or lake as defined by CDFG.

CDFG generally includes, within the jurisdictional limits of streams and lakes, any riparian habitat present. Riparian habitat includes willows, cottonwoods, and other vegetation typically associated with the banks of a stream or lake shoreline. In most situations, wetlands associated with a stream or lake would fall within the limits of riparian habitat. Thus, defining the limits of CDFG jurisdiction based on riparian habitat will automatically include any wetland areas. CDFG has not defined wetlands for jurisdictional purposes. Wetlands not associated with a lake, stream, or other regulated area are generally not subject to CDFG jurisdiction.

4.3 EXECUTIVE ORDER 13112 – INVASIVE SPECIES

Under EO 13112, an invasive species is defined as "an alien species (a species not native to a particular ecosystem) whose introduction does or is likely to cause economic or environmental harm or harm to human health." Invasive species are determined by the Invasive Species Council. In addition to other mandates, EO 13112 mandates federal agencies whose actions may affect the status of invasive species to "not authorize, fund, or carry out actions that it believes are likely to cause or promote the introduction or spread of invasive species..."

4.4 CITY OF STOCKTON HERITAGE TREE ORDINANCE

The City of Stockton Heritage Tree Ordinance (City of Stockton Municipal Code, Section 5-039) regulates the removal of heritage trees. Under the City tree ordinance, a heritage tree is defined as any valley oak (*Quercus lobata*), coast live oak (*Quercus agrifolia*), or interior live oak (*Quercus wislizenii*) which is located on public or private property within the limits of the City of Stockton, and which has a trunk diameter of sixteen inches or more, measured at twenty-four inches above actual grade. Any person desiring to remove one or more heritage trees must obtain a permit from the City Parks and Recreation. Any heritage trees removed must be replaced at a 1:1 ratio at the discretion of the City Landscape Architect. The size of the replacement tree will be determined by the City Landscape Architect based on the size of the tree that is removed. If possible, the replacement tree or trees should be planted on the same parcel as the trees that were removed. Otherwise, the replacement tree or trees should be planted in a City park or some other suitable location as determined by the City Landscape Architect.

4.5 SAN JOAQUIN COUNTY MULTI-SPECIES HABITAT CONSERVATION AND OPEN SPACE PLAN

The San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP), in accordance with ESA Section 10(a)(1)(B) and CESA Section 2081(b) Incidental Take Permits, provides compensation for the conversion of open space to non-open space uses which affect the plant, fish, and wildlife species covered by the SJMSCP. The SJMSCP compensates for conversions

of open space for the following activities: urban development, mining, expansion of existing urban boundaries, non-agricultural activities occurring outside of urban boundaries, levee maintenance undertaken by the San Joaquin Area Flood Control Agency, transportation projects, school expansions, non-federal flood control projects, new parks and trails, maintenance of existing facilities for non-federal irrigation district projects, utility installation, maintenance activities, managing preserves, and similar public agency projects. These activities will be undertaken by both public and private individuals and agencies throughout San Joaquin County and within the County's incorporated cities of Escalon, Lathrop, Lodi, Manteca, Ripon, Stockton, and Tracy. Public agencies including Caltrans (for transportation projects) and the San Joaquin Council of Governments (for transportation projects) will also undertake activities which will be covered by the SJMSCP.

The SJMSCP is implemented by SJCOG in coordination with the plan participants.

CHAPTER 5.0 SPECIAL STATUS SPECIES AND SENSITIVE HABITATS

5.1 REGIONAL SPECIES AND HABITATS OF CONCERN

Table 4 provides a listing of special status species that could potentially occur in the region. Special status species that were observed or determined likely to occur on the project site are discussed below.

5.2 SPECIAL STATUS PLANTS

No special status plant species were observed during focused surveys on June 22, 24, or August 16, 2005. As a result, special status plant species are considered absent from the project site.

The project site is not located within critical habitat for any special status plants.

5.3 SPECIAL STATUS WILDLIFE

5.3.1 Bat Species

The project site contains potential roosting sites and foraging habitat for several bat species, including pale western big-eared bat (*Corynorhinus townsendii pallescens*), Pacific western big-eared bat (*Corynorhinus townsendii townsendii*), greater western mastiff bat (*Eumops perotis californicus*), western red bat (*Lasiurus blossevilli*), small-footed myotis (*Myotis ciliolabrum*), long-eared myotis (*Myotis evotis*), fringed myotis (*Myotis thysanodes*), long-legged myotis (*Myotis volans*), and Yuma myotis (*Myotis yumanensis*). None of these species are on formal lists, but are federal species of concern and/or State species of special concern. Bats utilize a variety of roost sites, including caves, tunnels, buildings, mines, bridges, crevices, under bark, and trees. Bats forage over water or fields where insects are abundant. Bat surveys were not conducted on the project site, but potential roosting and foraging habitat occurs.

5.3.2 Tricolored Blackbird.

The tricolored blackbird (*Agelaius tricolor*) is a State species of special concern and a federal species of concern. Tricolored blackbirds are highly colonial and nomadic, and are largely endemic to the lowlands of California. They prefer to nest in freshwater marshes with dense growths of herbaceous vegetation, such as mustard and thistle. The project site provides suitable nesting and foraging habitat for tricolored blackbirds, and the CNDDB contains several records of this species within 10 miles of the project site. Several red-winged blackbirds were observed nesting on the project site in a large patch of milk thistle, but no tricolored blackbirds were observed. Tricolored blackbirds could occur on the project site.

Table 4: Special Status Species Potentially Occurring on the Tidewater Crossing Project Site

Scientific Name	Common Name	Status	Habitat Requirements	Habitat Present (Y/N)	Species Present (Y/N/U)	Rationale
Mammals						
Bassaricus astutus	Ringtail	SFPS	Occurs in forest and shrub habitats in close association with rocky areas or riparian habitats.	N	N	No suitable habitat present on the project site.
Corynorhinus townsendii pallescens	Pale western big-eared bat	FSC, CSC	Occurs in a variety of habitats including valley oak savannah, riparian forest, and prairie. Roosts in caves, tunnels, buildings, mines, or other human-made structures, such as bridges. Requires roosting, maternity, and hibernacula sites free from human disturbance.	Y	U	Potential roosting sites and foraging habitat present on the project site. See discussion in Section
Corynorhinus townsendii townsendii	Pacific western big-eared bat	FSC, CSC	Lives in a variety of habitats, preferring coastal conifer, broad-leaf woodlands, and open grasslands. Roosts in caves, tunnels, buildings, mines, or other human-made structures, such as bridges. Requires roosting, maternity, and hibernacula sites free from human disturbance.	Y	U	Potential roosting sites and foraging habitat present on the project site. See discussion in Section
Dipodomys heermanni berkeleyensis	Berkeley kangaroo rat	None	Open, grassy hilltops in chaparral and blue oak/foothill pine woodlands.	N	N	No suitable habitat present on the project site.
Eumops perotis californicus	Greater western mastiff bat	FSC, CSC	Found in many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, chaparral, etc. Roosts in crevices in cliff faces, high buildings, trees, and tunnels.	Y	U	Potential roosting sites and foraging habitat present on the project site. See discussion in Section
Lasiurus blossevilli	Red bat	CSC	Roosts primarily in trees, 2 – 40 ft. above the ground. Feeds over a wide variety of habitats including grasslands, shrubland, open woodland, and croplands.	Y	U	Potential roosting sites and foraging habitat present on the project site. See discussion in Section
Myotis ciliolabrum	Small-footed myotis	FSC	Generally inhabits desert, badland, and semiarid habitats; more mesic habitats in southern part of range. Hibernates in caves and mines. Maternity colonies often are in abandoned houses, barns, or similar structures.	Y	U	Potential roosting sites and foraging habitat present on the project site. See discussion in Section
Myotis evotis	Long-eared myotis	FSC	Found in all brush, woodland, and forest habitats from sea level to about 9,000 feet. Prefers coniferous woodlands and forests. Nursery colonies in buildings, crevices, spaces under bark, and snags. Caves used primarily as night roosts.	Y	U	Potential roosting sites and foraging habitat present on the project site. See discussion in Section

Scientific Name	Common Name	Status	Habitat Requirements	Habitat Present (Y/N)	Species Present (Y/N/U)	Rationale
Myotis thysanodes	Fringed myotis	FSC	Optimal habitats are pinyon-juniper, valley foothill hardwood, and hardwood-conifer forests. Roosts in caves, mines, buildings or crevices.	Y	U	Potential roosting sites and foraging habitat present on the project site. See discussion in Section
Myotis volans	Long-legged myotis	FSC	Most common in woodland and forest habitats above 4000 feet (1219 meters). Trees are important day roosts, and caves and mines are night roosts. Nursery colonies usually found under bark or in hollow trees but occasionally in crevices or buildings.	Y	U	Potential roosting sites and foraging habitat present on the project site. See discussion in Section
Myotis yumanensis	Yuma myotis	FSC	Optimal habitats are open forests and woodlands with sources of water over which to feed. Distribution is closely tied to bodies of water. Maternity colonies in caves, mines, buildings, or crevices.	Y	U	Potential roosting sites and foraging habitat present on the project site. See discussion in Section
Neotoma fuscipes riparia	Riparian (San Joaquin Valley) woodrat	FE, CSC	Riparian areas along the Stanislaus, San Joaquin, and Tuolumne Rivers. Requires areas with a mix of brush and trees, with suitable nesting sites in trees, snags or logs.	N	N	No suitable habitat present on the project site.
Perognathus inornatus inornatus	San Joaquin pocket mouse	FSC	Typically found in dry open grasslands and scrub areas on fine textured, friable soils in the Central and Salinas Valleys.	N	N	No suitable habitat present on the project site.
Sylvilagus bachmani riparius	Riparian brush rabbit	FE, SE	Riparian areas with dense thickets.	N	N	No suitable habitat present on the project site.
Taxidea taxus	American badger	CSC	Occurs throughout California and the United States. Primary habitat requirements seem to be sufficient food and friable soils in relatively open uncultivated ground in grasslands, woodlands, and desert.	N	N	No suitable habitat present on the project site.
Vulpes macrotis mutica	San Joaquin kit fox	FE; ST	Annual grasslands or grassy open stages with scattered vegetation; need loose-textured soils for burrowing, and a suitable prey base.	N	N	No suitable habitat on the project site. The project site is out of range of this species.
Birds						
Accipiter cooperi	Cooper's hawk	CSC	Nest sites mainly in riparian growths of deciduous trees, as in canyon bottoms or river flood-plains; also live oaks.	N	N	No suitable habitat present on the project site.

Scientific Name	Common Name	Status	Habitat Requirements	Habitat Present (Y/N)	Species Present (Y/N/U)	Rationale
Accipiter striatus	Sharp-shinned hawk	CSC	Nests in ponderosa pine, black oak, riparian deciduous, mixed conifer, and Jeffery pine forest. North-facing slopes with plucking perches are critical requirements. Utilizes all habitats except alpine, open prairie, and bare desert in the winter.	N	N	No suitable habitat present on the project site.
Aechmophorus occidentalis	Western grebe		Nests on large, marshy lakes in the Modoc Plateau south to Inyo County. Also nests locally elsewhere, including Sacramento National Wildlife Refuge, Lake Havasu, and Salton Sea. Common to abundant along coast from October to May.	N	N	No suitable habitat present on the project site.
Agelaius tricolor	Tricolored blackbird	FSC; CSC	Nests in freshwater marshes with tules or cattails, or in other dense vegetation such as thistle, blackberry thickets, etc. in close proximity to open water. Forages in a variety of habitats including pastures, agricultural fields, rice fields, and feedlots.	Y	U	Suitable habitat present on the project site. See discussion in Section 5.2.1.
Amphispiza belli belli	Bell's sage sparrow	FSC, CSC	Found in chaparral dominated by dense stands of chamise. Found in coastal sage scrub in the southern part of its range. Nests on the ground beneath a shrub, or in a shrub 6 – 18 inches above ground.	N	N	No suitable habitat present on the project site.
Aquila chrysaetos	Golden eagle	CSC	Occurs in rolling foothills, mountain areas, sage-juniper flats, and deserts. Nests in cliffs and in large trees in open areas. Rugged, open habitats with canyons and escarpments are most commonly used for nesting.	N	N	No suitable habitat present on the project site.
Ardea albus	Great egret		Colonial nester in large trees near marshes, tide-flats, irrigated pastures, and margins of rivers and lakes.	N (Rookery sites)	N (Rookery sites)	No suitable habitat present on the project site.
Ardea herodias	Great blue heron		Colonial nester in large trees, cliffsides, and sequestered spots on marshes. Rookery sites in close proximity to foraging areas: marshes, lake margins, tide-flats, rivers and streams, wet meadows.	N (Rookery sites)	N (Rookery sites)	No suitable habitat present on the project site.
Asio flammens	Short-eared owl	FSC, CSC	Fresh and salt water swamp lands, low land meadows, irrigated alfalfa fields.	Y	U	Suitable habitat present on the project site. See discussion in Section 5.2.2.

Scientific Name	Common Name	Status	Habitat Requirements	Habitat Present (Y/N)	Species Present (Y/N/U)	Rationale
Athene cunicularia hypugaea	Western burrowing owl	FSC; CSC	Burrow sites in open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, California ground squirrel.	Y	U	Suitable habitat present on the project site. See discussion in Section 5.2.2.
Branta canadensis leucopareia	Aleutian Canada goose	FD	During migration and on wintering grounds, the geese are commonly found in marshes, harvested agriculture fields, and flood-irrigated and non-irrigated land. Forages on natural pasture or cultivated to grain; loafs on lakes, reservoirs and ponds.	Y	U	Suitable winter foraging habitat present on the project site; however no suitable breeding habitat occurs on the project site. See discussion in Section 5.2.3.
Buteo regalis	Ferruginous hawk	FSC; CSC	Winters in open grasslands, sagebrush flats, desert scrub, low foothills, and fringes of pinyon-juniper habitats. Mostly eats lagomorphs, ground squirrels, and mice. Population trends may follow lagomorph population cycles.	Y	U	Suitable breeding and foraging habitat present on the project site. See discussion in Section 5.2.4.
Buteo swainsoni	Swainson's hawk	ST	Breeds in stands with few trees in juniper-sage flats, riparian areas and oak savannahs. Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations.	Y	Y	Suitable breeding and foraging habitat present on the project site. Three pairs of Swainson's hawks were observed nesting on the project site during the 2005 surveys. See discussion in Section 5.2.5.
Carduelis lawrencei	Lawrence's goldfinch	FSC	Nests in open oak woodland, chaparral, riparian woodland, pinyon-juniper association, and weedy areas in arid regions but usually near water. Often nests in dense foliage in conifers, 3 - 39 ft (1 – 12 m) above ground.	N	N	No suitable habitat present on the project site.
Chaetura vauxi	Vaux's swift	FSC	Nests in redwood, Douglas fir, and other coniferous forests. Nests in large hollows of tree snags; often in flocks. Forages over most terrains and habitats but shows a preference for foraging over rivers and lakes	N	N	No suitable habitat present on the project site.
Charadrius montanus	Mountain plover	CSC	Wintering in short grasslands, freshly plowed fields, newly sprouting grain fields, and sometimes sod farms. Prefers short vegetation, bare ground and flat topography. Prefers grazed areas and areas with burrowing rodents.	Y	U	Suitable habitat present on the project site. See discussion in Section 5.2.2.

Scientific Name	Common Name	Status	Habitat Requirements	Habitat Present (Y/N)	Species Present (Y/N/U)	Rationale
Coccyzus americanus occidentalis	Western yellow-billed cuckoo	SE	Nests in riparian systems along the broad lower flood-bottoms of larger river systems; requires dense riparian vegetation.	N	N	No suitable habitat present on the project site.
Circus cyanus	Northern harrier	CSC	Nests mostly in emergent wetlands or along rivers or lakes, but may nest in grasslands, grain fields, or on sagebrush flats several miles from water.	Y	U	Suitable habitat present on the project site. See discussion in Section 5.2.2.
Dendroica petechia brewsteri	Yellow warbler	CSC	Nesting in riparian habitats and prefers willows, cottonwoods, aspens, sycamores, and alders for both nesting and foraging. Also nests in montane shrubbery in open conifer forests.	N	N	No suitable habitat present on the project site.
Egretta thula	Snowy egret		Locally common in the Central Valley all year. Feeds in shallow water or along shores of wetlands or aquatic habitats. Nests in protected beds of dense tules.	N (Rookery Sites)	N (Rookery Sites)	No suitable habitat present on the project site.
Elanus leucurus	White-tailed kite	FSC	Nests on rolling foothills/valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodlands. Found in open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching.	Y	Y	Suitable breeding and foraging habitat present on the project site. See discussion in Section 5.2.6.
Empidonax traillii brewsteri	Little willow flycatcher	FSC;	Extensive thickets of low, dense willows on the edge of wet meadows, at elevations from 2,000 – 8,000 ft (610 – 2438 m).	N	N	No suitable habitat present on the project site.
Eremophila alpestris actia	California horned lark	FSC, CSC	Coastal regions and in the main part of the San Joaquin Valley and east to the foothills. Found in short-grass prairie, bald hills, mountain meadows, open coastal plains, fallow grain fields, and alkali flats.	N	N	No suitable habitat present on the project site.
Falco columbarius	Merlin	CSC	Uncommon winter migrant from September to May. Frequents coastlines, open grasslands, savannahs, woodlands, lakes, wetlands, edges, and early successional stages. Ranges from annual grasslands to ponderosa pine and montane hardwood-conifer habitats. Nests in Alaska and Canada.	Y	U	Suitable foraging habitat present on the project site. See discussion in Section
Falco mexicanus	Prairie falcon	CSC	Nests on cliffs in dry, open terrain. Forages in open areas including grasslands, rangeland, savannahs, desert scrub, and some agricultural fields.	Y	U	Suitable foraging habitat present on the project site. See discussion in Section

Scientific Name	Common Name	Status	Habitat Requirements	Habitat Present (Y/N)	Species Present (Y/N/U)	Rationale
Falco peregrinus anatum	American peregrine falcon	FD	Nesting near wetlands, lakes, rivers, or other water; on cliffs, banks, dunes, mounds, also human-made structures. Nest consists of a scrape on a depression or ledge in an open site.	N	N	No suitable habitat present on the project site.
Grus canadensis tabida	Greater sandhill crane	FSC, ST	Nests in wetland habitats in northeastern California, and winters in the Central valley. Prefers grain fields or irrigated pastures within 4 mi (6 km) of shallow water used as a roost site.	N	N	No suitable habitat present on the project site.
Haliaeetus leucocephalus	Bald eagle	FT, SE	Nests in large, old growth, or dominant live tree with open branches near ocean shore, lake margins, and rivers. Usually nests within 1 mi (1.6 km) of water.	N	N	No suitable habitat present on the project site.
Icteria virens	Yellow-breasted chat		California summer nesting resident. Inhabits riparian thickets of willow and other brushy tangles near watercourses. Nest in low dense riparian consisting of willows, blackberry, and wild grape, and forages within 10 feet of the ground.	N	N	No suitable habitat present on the project site.
Lanius ludovicianus	Loggerhead shrike	FSC, CSC	Nests in broken woodlands, savannah, pinyon-juniper, Joshua tree, and riparian woodlands, desert oases, scrub and washes. Prefers open country for hunting, with perches for scanning and fairly dense shrubs and brush for nesting.	Y	U	Suitable habitat present on the project site. See discussion in Section 5.2.2.
Laterallus jamaicensis coturniculus	California black rail	FSC, ST	Occurs in mostly in tidal salt marsh dominated by pickleweed, or in brackish marshes supporting bulrushes in association with pickleweed. Also occurs in fresh-water marshes supporting cattails, bulrushes, and saltgrass. Usually found in the immediate vicinity of tidal sloughs.	N	N	No suitable habitat present on the project site.
Limosa fedoa	Marbled godwit	FSC	Winters along the coast in estuarine mudflats, sandy beaches, open shores, saline emergent wetlands, and adjacent wet fields. Nests outside of California.	N	N	No suitable habitat present on the project site.
Melanerpes lewis	Lewis' woodpecker	FSC	Open deciduous and coniferous forests with brushy understory, and scattered snags, logged forests, river groves, or foothills.	N	N	No suitable habitat present on the project site.

Scientific Name	Common Name	Status	Habitat Requirements	Habitat Present (Y/N)	Species Present (Y/N/U)	Rationale
Numenius americanus	Long-billed curlew	FSC, CSC	Nests in dry prairies and moist meadows near water. Nests on ground usually in flat area with short grass, sometimes on more irregular terrain, often near rock or other conspicuous object.	N	N	No suitable habitat present on the project site.
Nycticorax nycticorax	Black-crowned night heron		Feeds along the margins of lacustrine, large riverine, and fresh and saline emergent habitats and, rarely, on kelp beds in marine subtidal habitats. Nests and roosts in dense-foliaged trees and dense emergent wetlands.	N (Rookery sites)	N (Rookery sites)	No suitable habitat present on the project site.
Pandion haliaetus	Osprey	CSC	Nesting in ocean shores, bays, freshwater lakes, and larger streams. Large nests built in tree-tops within 15 miles of a good fish-producing body of water.	N	N	No suitable habitat present on the project site.
Pelecanus erthrorhynchos	American white pelican	CSC	Colonial nester on large, inland lakes. Winters on salt ponds of San Francisco Bay, large inland lakes and estuaries, and on the coast from Sonoma County south.	N	N	No suitable habitat present on the project site.
Phalacrocorax auritus	Double-crested cormorant	CSC	Colonial nester in trees, on ground, or on cliffs near ponds, lakes, rivers, lagoons, estuaries, and along open coastlines.	N	N	No suitable habitat present on the project site.
Picoides nuttallii	Nuttall's woodpecker	FSLC	Oak forest and woodland, chaparral and riparian (especially willow-cottonwood) woodland. In the Sierra Nevada foothills, extensively uses interior live oak, blue oak and foothill pine outside the breeding season.	Y	U	Suitable habitat present on the project site. See discussion in Section 5.2.2.
Plegadis chihi	White-faced ibis	FSC	Marshes, swamps, ponds and rivers, mostly in freshwater habitats. Nests in marshes and dense tule thickets; in low tree, on the ground in bulrushes or reeds, or on a floating mat.	N	N	No suitable habitat present on the project site.
Riparia riparia	Bank swallow	FSC, ST	Open and partly open situations, frequently near flowing water. Colonial nester in steep sand, dirt, or gravel banks, in burrows dug near the top of the bank, along the edge of inland water or along the coast, or in gravel pits, road embankments, etc.	N	N	No suitable habitat present on the project site.
Selasphorus rufus	Rufous hummingbird	FSC	Coniferous forest, second growth, thickets and brushy hillsides, foraging in adjacent scrubby areas and meadows. During migration in winter they prefer open situations where rich in nectar-producing flowers are present.	N	N	No suitable habitat present on the project site.

Scientific Name	Common Name	Status	Habitat Requirements	Habitat Present (Y/N)	Species Present (Y/N/U)	Rationale
Toxostoma redivivum	California thrasher	FSC	Chaparral, foothills, valley thickets, parks, gardens.	N	N	No suitable habitat present on the project site.
Xanthocephalus xanthocephalus	Yellow-headed blackbird		Nests in freshwater emergent wetlands with dense vegetation and deep water, often along borders of lakes and ponds.	N	N	No suitable habitat present on the project site.
Reptiles						
Anniella pulchra pulchra	Silvery legless lizard	FSC, CSC	Found predominantly in the Coast Ranges, Transverse Mountains, and Peninsular Ranges and in northwest Baja California. Also found in scattered occurrences on the floor of the San Joaquin Valley. Forages at the base of shrubs, usually on moist substrate with plenty of leaf litter.	N	N	No suitable habitat present on the project site.
Emys (=Clemmys) marmorata	Western pond turtle	CSC	Occurs in permanent or nearly permanent water sources, ponds, marshes, rivers, streams and irrigation ditches with emergent vegetation and basking sites. Lays eggs in upland habitat consisting of sandy banks or grassy, open fields.	Y	U	Suitable breeding and foraging habitat present on the project site. See discussion in Section 5.2.7.
Masticophis flagellum ruddocki	San Joaquin whipsnake	FSC, CSC	Open, dry habitats with little or no tree cover; valley grassland and saltbush scrub.	N	N	No suitable habitat present on the project site.
Phrynosoma coronatum frontale	California horned lizard	FSC, CSC	Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes. Found in open areas for sunning, bushes for cover, patches of loose soil for burial, and abundant supply of ants and other insects.	N	N	No suitable habitat present on the project site.
Thamnophis gigas	Giant garter snake	FT; ST	Streams and sloughs, usually with mud bottom. One of the most aquatic of garter snakes; usually in areas of freshwater marsh and low-gradient streams with emergent vegetation, also drainage canals, irrigation ditches, ponds, and small lakes.	Y	U	Suitable habitat present on the project site. See discussion in Section 5.2.8.

Scientific Name	Common Name	Status	Habitat Requirements	Habitat Present (Y/N)	Species Present (Y/N/U)	Rationale
Amphibians						
Ambystoma californiense	California tiger salamander	FT; CSC	Most commonly found in grasslands or open woodland habitats. Lives in vacant or mammal-occupied burrows (e.g., California ground squirrel, valley pocket gopher), and occasionally other underground retreats, throughout most of the year. Lays eggs on submerged stems and leaves, usually in shallow ephemeral or semi-permanent pools and ponds that fill during heavy winter rains, sometimes in permanent ponds.	N	N	No suitable habitat present on the project site.
Rana aurora draytonii	California red-legged frog	FT	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation.	N	N	No suitable habitat present on the project site.
Rana boylii	Foothill yellow-legged frog	FC, CSC	Partially-shaded, shallow streams and riffles with a rocky substrate in a variety of habitats. Need at least some cobble-sized substrate for egg-laying, with at least 15 weeks of running water to attain metamorphosis.	N	N	No suitable habitat present on the project site.
Spea hammondi	Western spadefoot toad	FSC, CSC	Occurs primarily in grassland habitats but also found in valley-foothill hardwood woodlands. Vernal pools are essential for breeding and egg-laying.	N	N	No suitable habitat present on the project site.
Fish						
Acipenser medirostris	Green sturgeon	FSC; CSC	Most often in marine waters; estuaries, lower reaches of large rivers, salt or brackish water off river mouths.	N	N	Project site is out of range of this species. No suitable habitat present.
Hypomesus transpacificus	Delta smelt	FT; ST	Sacramento-San Joaquin delta. Seasonally in Suisun bay, Carquinez strait, and San Pablo bay. Seldom found at salinites greater than 10 ppt. Most often in salinities less than 2 ppt.	Y	U	Suitable habitat present. See discussion in Section 5.2.9.
Lampetra ayresi	River lamprey	FSC; CSC	Lower Sacramento River, San Joaquin River, and Russian River. May occur in coastal streams north of San Francisco Bay. Adults inhabit clean, gravelly riffles; ammocoetes require sandy backwaters or stream edges. Both stages require good water quality and temperatures less than 25° C (77° F).	Y	U	Suitable habitat present. See discussion in Section 5.2.10.
Lampetra hubbsi	Kern brook lamprey	FSC; CSC	San Joaquin River system and Kern River. Adults require gravel-bottomed areas for spawning and ammocoetes need muddy-bottomed areas for burrowing and feeding.	Y	U	Suitable habitat present. See discussion in Section 5.2.10.

Scientific Name	Common Name	Status	Habitat Requirements	Habitat Present (Y/N)	Species Present (Y/N/U)	Rationale
Lampetra tridentata	Pacific lamprey	FSC	Upper drainages of the Sacramento-San Joaquin system. Spawning locations include, but are not limited to the following locations: below Friant Dam on the San Joaquin River; below Nimbus Dam and above Howe Avenue bridge crossing of the American River; and below Red Bluff dam on the Sacramento River.	Y	U	Suitable habitat present. See discussion in Section 5.2.10.
Oncorhynchus mykiss irideus	Central Valley steelhead	FT	Populations occur and spawn in the Sacramento and San Joaquin rivers and their tributaries.	Y	U	Suitable habitat present. See discussion in Section 5.2.11.
Oncorhynchus tshawytscha	Central Valley spring-run chinook salmon	FT; ST	Sacramento and San Joaquin Rivers and tributaries. Primarily found in Butte, Big Chico, Deer, and Mill creeks. Adult numbers depend on pool depth and volume, amount of cover, and proximity to gravel.	N	N	No suitable habitat present. Project area is located outside of the range of the species.
Oncorhynchus tshawytscha	Central Valley fall/late fall-run chinook salmon	FC; CSC	Found mainly in the Sacramento River and its tributaries, and most spawning and rearing of juveniles takes place in the reach between Red Bluff and Redding (Keswick Dam). Adult numbers depend on pool depth and volume, amount of cover, and proximity to gravel.	Y	U	Suitable habitat present. See discussion in Section 5.2.11.
Oncorhynchus tshawytscha	Central Valley winter-run chinook salmon	FE; SE	Sacramento River below Keswick Dam. Spawns in the Sacramento River but not in tributary streams.	N	N	No suitable habitat present. Project area is located outside of the range of the species.
Pogonichthys macrolepidotus	Sacramento splittail	FSC; CSC	Largely confined to the Delta, Suisun Bay, Suisun Marsh, Napa River, Petaluma River, and other parts of the Sacramento-San Joaquin estuary. Occurs in slow moving river sections and dead end sloughs. Requires flooded vegetation for spawning and foraging for young.	Y	U	Suitable habitat present. See discussion in Section 5.2.12.
Spirinchus thaleichthys	Longfin smelt	FSC; CSC	Coastal waters near shore, bays, estuaries, and rivers, and landlocked in some lakes. In estuaries usually found in middle or bottom of water column.	N	N	No suitable habitat present on the project site.
Invertebrates						
Aegialia concinna	Ciervo aegialian scarab beetle	FR	Known only from Fresno County in sandy substrates.	N	N	No suitable habitat present on the project site.
Anthicus sacramento	Sacramento anthicid beetle	FSC	Restricted to sand dune areas of the Sacramento-San Joaquin Delta.	N	N	No suitable habitat present on the project site.
Branchinecta conservatio	Conservancy fairy shrimp	FE	Large turbid pools in grasslands of the Central Valley.	N	N	No suitable habitat present on the project site.

Scientific Name	Common Name	Status	Habitat Requirements	Habitat Present (Y/N)	Species Present (Y/N/U)	Rationale
Branchinecta longiantenna	Longhorn fairy shrimp	FE	Inhabits small, clear-water depressions in sandstone and clear to turbid clay/grass-bottomed pools in shallow swales in the eastern margin of the Central Coast Mountains in seasonally astatic grassland vernal pools.	N	N	No suitable habitat present on the project site.
Branchinecta lynchi	Vernal pool fairy shrimp	FT	Endemic to the grasslands of the Central Valley, Central Coast Mountains and South Coast Mountains, in astatic rain-filled pools. Inhabit small, clear-water sandstone-depression pools and grassed swales, earthen slumps, or basalt-flow depression pools.	N	N	No suitable habitat present on the project site.
Branchinecta mesovallensis	Midvalley fairy shrimp	FSC	Occurs in seasonal vernal pools or other topographic depressions throughout the Central Valley.	N	N	No suitable habitat present on the project site.
Desmocerus californicus dimorphus	Valley elderberry longhorn beetle	FT	Occurs only in the Central Valley of California, in association with blue elderberry (Sambucus mexicana). Prefers branches greater than 1 in (2.5 cm) in diameter.	N	N	No suitable habitat present on the project site.
Hygrotis curvipes	Curved-foot diving beetle	FSC	Aquatic; found in shallow, muddy pools in Oakley, Contra Costa County.	N	N	No suitable habitat present on the project site.
Lepidurus packardi	Vernal pool tadpole shrimp	FE	Found in a variety of natural, and artificial, seasonally ponded habitat types including: vernal pools, swales, ephemeral drainages, stock ponds, reservoirs, ditches, backhoe pits, and ruts caused by vehicular activities. Within the Sacramento Valley.	N	N	No suitable habitat present on the project site.
Linderiella occidentalis	California linderiella fairy shrimp	FSC	Seasonal pools in unplowed grasslands with old alluvial soils underlain by hardpan or in sandstone depressions. Water in the pools has very low alkalinity and conductivity.	N	N	No suitable habitat present on the project site.
Lytta moesta	Moestan blister beetle	FSC	Annual grassland, foothill woodland, and saltbush scrub in the Central Valley, Coast Range, and Sierra Nevada foothills.	N	N	No suitable habitat present on the project site.
Lytta molesta	Molestan blister beetle	FSC	Annual grassland, foothill woodland, and saltbush scrub in the Central Valley, Coast Range, and Sierra Nevada foothills.	N	N	No suitable habitat present on the project site.
Plants						
Amsinckia grandiflora	Large-flowered fiddleneck	FE, SE, CNPS 1B	Cismontane woodland and valley and foothill grasslands (275 – 550 m). Blooms April to May.	N	N	No suitable habitat present on the project site.

Scientific Name	Common Name	Status	Habitat Requirements	Habitat Present (Y/N)	Species Present (Y/N/U)	Rationale
Aster lentus	Suisun marsh aster	CNPS 1B	Brackish and freshwater marshes and swamps in Sacramento/San Joaquin River delta (0-3 m). Blooms May to November.	Y	N	Potential habitat present on the project site. One similar species was observed during the June survey, but was unidentified because it was not blooming. A follow-up survey in August identified this plant as sticktight (*Bidens frondosa*). Suisun marsh aster was not observed during focused surveys, and is considered absent from the project site.
Astragalus tener var. *tener*	Alkali milk-vetch	CNPS 1B	Valley foothill grasslands, vernal pools (1-60 m). Blooms March to June.	N	N	No suitable habitat present on the project site.
Atriplex cordulata	Heartscale	FSC, CNPS 1B	Chenopod scrub, valley and foothill grasslands, meadows. Alkaline flats and scalds in the central valley with sandy soils 3 – 1230 ft (1 – 375 m). Blooms April to October.	N	N	No suitable habitat present on the project site.
Atriplex joaquiniana	San Joaquin spearscale	CNPS 1B	Alkaline grasslands, chenopod scrub (1-835 m). Blooms April to October.	N	N	No suitable habitat present on the project site.
Blepharizonia plumose	Big tarplant	CNPS 1B	Valley foothill grassland (30-505 m). Blooms July to October	N	N	No suitable habitat present on the project site.
Calycadenia hooveri	Hoover's calycadenia	FSC, CNPS 1B	On exposed, rocky, barren soil in cismontane woodland and valley and foothill grassland (65-260 m). Blooms July to September.	N	N	No suitable habitat present on the project site.
Carex comosa	Bristly sedge	CNPS 2	Marshes and swamps, lake margins, wet places (0-625 m). Blooms May to September.	Y	N	Potential habitat present on the project site, but this species was not observed during focused surveys in June and August, 2005. This species is considered absent from the project site.
Castilleja campestris ssp. *succulenta*	Succulent owl's clover	FT, SE, CNPS 1B	Vernal pools in valley and foothill grasslands 82 – 2461 ft (25 – 750 m).	N	N	No suitable habitat present on the project site.
Cirsium crassicaule	Slough thistle	FSC; CNPS 1B	Chenopod scrub, sloughs, riverbanks, and marshy areas of San Joaquin Valley (3-10 m). Blooms May to August.	Y	N	Potential habitat present on the project site, but this species was not observed during focused surveys in June and August, 2005. This species is considered absent from the project site.

Scientific Name	Common Name	Status	Habitat Requirements	Habitat Present (Y/N)	Species Present (Y/N/U)	Rationale
Cordylanthus palmatus	Palmate-bracted bird's-beak	FE, SE, CNPS 1B	Alkaline valley and foothill grassland (5-155 m). Blooms May to October.	N	N	No suitable habitat present on the project site.
Coreopsis hamiltonii	Mt. Hamilton coreopsis	FSC, CNPS 1B	On steep, shale talus in cismontane woodland (530 – 1300 m). Blooms March to May.	N	N	No suitable habitat present on the project site.
Delphinium californicum ssp. *interius*	Hospital Canyon larkspur	FSC, CNPS 1B	Wet, boggy meadows, openings in chaparral, and in canyons of cismontane woodland and chaparral (230 – 1095 m). Blooms April to June.	N	N	No suitable habitat present on the project site.
Delphinium recurvatum	Recurved larkspur	CNPS 1B	Alkaline valley foothill grassland, chenopod scrub cismontane woodlands (3-750 m). Blooms March to May.	N	N	No suitable habitat present on the project site.
Erodium macrophyllum	Round-leaved filaree	CNPS 2	Valley foothill grassland, cismontane woodlands (15-1200 m). Blooms March to May.	N	N	No suitable habitat present on the project site.
Eryngium racemosum	Delta button-celery	SE, CNPS 1B	Seasonally inundated floodplain on clay soil in riparian scrub habitat 10 – 246 ft (3 – 75 m). Blooms June to September.	N	N	No suitable habitat present on the project site.
Eschscholzia rhombipetala	Diamond-petaled poppy	FSC, CNPS 1B	Valley and foothill grassland on alkaline and clay slopes and flats (0-975 m). Blooms March to April.	N	N	No suitable habitat present on the project site.
Gratiola heterosepala	Boggs Lake hedge-hyssop	FSC, SE, CNPS 1B	Freshwater marshes and swamps, vernal pools. Usually found in clay soils of vernal pools and lake margins (10 – 2375 m).	N	N	No suitable habitat present on the project site.
Hibiscus lasiocarpus	Rose-mallow	CNPS 2	Freshwater marshes and swamps (0 – 120 m). Blooms June to September.	Y	N	Potential habitat present on the project site, but this species was not observed during focused surveys in June and August, 2005. This species is considered absent from the project site.
Juncus leiospermus var. *leiospermus*	Red Bluff dwarf rush	FSC, CNPS 1B	Chaparral, valley and foothill grasslands, cismontane woodland, and vernal pools. Found in vernally mesic sites on the edges of vernal pools. 30-1020m. Blooms March to May.	N	N	No suitable habitat present on the project site.

Scientific Name	Common Name	Status	Habitat Requirements	Habitat Present (Y/N)	Species Present (Y/N/U)	Rationale
Lathyrus jepsonii var. *jepsonii*	Delta tule pea	CNPS 1B	Freshwater and brackish marshes. Most of the distribution is restricted to the Sacramento/San Joaquin river delta. Often found with *Typha* spp., *Aster lentus*, *Rosa californica*, *Juncus* spp., *Scirpus*, etc. Usually on marsh and slough edges (0-4m). Blooms May to September.	Y	N	Potential habitat present on the project site, but this species was not observed during focused surveys in June and August, 2005. This species is considered absent from the project site.
Legenere limosa	Legenere	FSC, CNPS 1B	In wet areas and beds of vernal pools. 1-880m. Blooms April to June.	N	N	No suitable habitat present on the project site.
Lilaeopsis masonii	Mason's lilaeopsis	FSC; CNPS 1B	Freshwater and brackish water marshes, and riparian scrub in regularly flooded tidal zones, on mud-banks and flats along creek banks (0-10m). Blooms April to November.	Y	N	Potential habitat present on the project site, but this species was not observed during focused surveys in June and August, 2005. This species is considered absent from the project site.
Limosella subulata	Delta mudwort	CNPS 2	Freshwater and brackish marshes. Most of the distribution is restricted to the Sacramento/San Joaquin river delta. Often found with *Aster lentus*, *Lilaeopsis masonii*, and *Lathyrus jepsonii var. jepsonii*. Usually on intertidal flats and muddy banks of watercourses in estuarine areas (0-3 m). Blooms May to August.	Y	N	Potential habitat present on the project site, but this species was not observed during focused surveys in June and August, 2005. This species is considered absent from the project site.
Madia radiata	Showy madia	CNPS 1B	Valley and foothill grassland, chenopod scrub, cismontane woodland. Occurs mostly on adobe clay in grassland or among shrubs (25 – 900 m). Blooms March to May.	N	N	No suitable habitat present on the project site.
Sagittaria sanfordii	Sanford's arrowhead	FSC; CNPS 1B	In standing or slow-moving freshwater ponds, marshes, swamps and ditches (0 – 610 m). Blooms May to October.	Y	N	Potential habitat present on the project site, but this species was not observed during focused surveys in June and August, 2005. This species is considered absent from the project site.
Scutellaria lateriflora	Mad-dog skullcap	CNPS 2	Meadows, seeps, marshes, and swamps (0 – 500 m). Blooms July to September.	N	N	No suitable habitat present on the project site.
Trichocoronis wrightii var. *wrightii*	Wright's trichocoronis	CNPS 2	Marshes and swamps, riparian forests and alkaline vernal pools (5-435 m). Blooms May to September.	Y	N	Potential habitat present on the project site, but this species was not observed during focused surveys in June and August, 2005. This species is considered absent from the project site.
Tropidocarpum capparideum	Caper-fruited tropidocarpum	CNPS 1B	Alkaline valley and foothill grassland (1-455 m). Blooms March to April.	N	N	No suitable habitat present on the project site.

Scientific Name	Common Name	Status	Habitat Requirements	Habitat Present (Y/N)	Species Present (Y/N/U)	Rationale
Tuctoria greenei	Greene's tuctoria	FE, SR, CNPS 1B	Dry bottoms of vernal pools in open grasslands (30 – 70 m). Blooms May to September.	N	N	No suitable habitat present on the project site.

Y = Yes / N= No / U = Unknown

Federal
FT = Threatened
FPE = Proposed Endangered
FPT = Proposed Threatened
FC = Candidate
FSC = Species of Concern
FD =Delisted

State
SE = Endangered
ST = Threatened
SR = Rare
CSC = Species of Special Concern

CNPS
CNPS 1A = Presumed extinct in California
CNPS 1B = Rare or Endangered in California and elsewhere
CNPS 2 = Rare or Endangered in California, more common elsewhere

5.3.3 Short-eared Owl

The short-eared owl (*Asio flammeus*) is a federal and State species of concern. This species occurs in open areas with few trees, such as perennial and annual grasslands, meadows, prairies, dunes, irrigated lands and emergent wetlands. Short-eared owls require dense vegetation, and nest in a depression on the ground. They are found in treeless areas with elevated sites for perching. The CNDDB does not contain any records of short-eared owls within 10 miles of the project site, but suitable habitat occurs. This species could nest and forage on the project site.

5.3.4 Western Burrowing Owl

The western burrowing owl (*Athene cunicularia*) is a federal and State species of concern. Burrowing owls occur in warmer valleys, open, dry grasslands, deserts, and scrublands associated with agriculture and urban areas that support populations of California ground squirrels. Burrowing owls nest below ground, utilizing abandoned burrows of other species, most commonly ground squirrel burrows, and feed on insects and small mammals. The CNDDB contains several records of burrowing owls within five miles of the project site. Surveys of the project site in 2005 identified several suitable burrows throughout the project site but no signs of burrowing owls utilizing the burrows. Burrowing owl sign (i.e., pellets, whitewash) was identified in other areas of the project site, indicating that burrowing owls are foraging on the project site.

5.3.5 Aleutian Canada Goose

The Aleutian Canada goose (*Branta canadensis leucopareia*) is a federal delisted species. This species forages in flooded, disced, cut, or irrigated fields during fall migration. Canada geese are highly mobile while foraging, and can relocate to nearby foraging habitat if they are disturbed. No Canada geese were observed on the project site, and the CNDDB does not contain any records for this species within 10 miles of the project site. This species could forage on the project site.

5.3.6 Ferruginous Hawk

The ferruginous hawk (*Buteo regalis*) is a State and federal species of concern. This species occurs in open grasslands, sagebrush flats, desert scrub, low foothills, and fringes of pinyon-juniper habitats. The Ferruginous hawk is an uncommon winter resident and migrant at lower elevations and open grasslands in the Modoc Plateau, Central Valley, and Coast Ranges, and is a fairly common winter resident of grasslands and agricultural areas in southwestern California.

The CNDDB does not contain any records of Ferruginous hawk within 10 miles of the project site, and this species was not observed during surveys. However, Ferruginous hawks could forage on the project site during the winter.

5.3.7 Swainson's Hawk

The Swainson's hawk (*Buteo swainsoni*) is a State threatened species. It has no formal federal status. Swainson's hawks are long distance migrants, wintering primarily in South America, and returning north to breed. Swainson's hawks are large, broad-winged hawks that occur in open country throughout the western half of the United States. In California, Swainson's hawks occur in the northeastern portion of the state, in the Great Basin Province, and in the Central Valley. They return to the Central Valley in mid-March and begin migrating south in August. Nests are built in the tops of large trees, primarily those associated with riparian habitats. Home ranges maintained by Swainson's hawks for foraging average about 6,800 acres and range from 830 acres to 21,500 acres (Estep 1989). They are known to forage up to 10 miles from their nest sites.

Three Swainson's hawk nests were identified on the project site (see Figure 5). The CNDDB also contains many records for Swainson's hawks within 5 miles of the project. The agricultural fields on the project site provide suitable foraging habitat for Swainson's hawk.

5.3.8 Mountain Plover

The mountain plover (*Charadrius montanus*) is a State species of concern. This species winters in short grasslands, freshly plowed fields, newly sprouting grain fields, and sod farms. Mountain plovers do not nest in California.

The CNDDB does not contain any records of mountain plover within 10 miles of the project site, and this species was not observed during surveys. However, mountain plovers could forage on the project site during the winter.

5.3.9 Northern Harrier

The northern harrier (*Circus cyanus*) is a State species of concern. It has no federal status. Northern harriers occur in a variety of habitats, including grasslands, grain fields, sagebrush flats, emergent wetlands, and alpine meadows. This species usually nests in emergent wetlands or along rivers or lakes, but may nest in grasslands, grain fields, or on sagebrush flats.

The CNDDB does not contain any records for northern harrier within 10 miles of the project site, and no northern harriers were observed during the 2005 surveys. However, this species could nest and forage on the project site.

5.3.10 Merlin

The merlin (*Falco columbarius*) is a State species of special concern, but has no federal status. This species is an uncommon winter migrant from September to May. Merlins nest in Alaska and Canada; they do not nest in California. This species winters in a variety of habitats, including open grasslands, savannahs, woodlands, edges, and early successional stages.

Figure 5: Swainson's hawk nest locations

The CNDDB does not contain any records of the merlin within 10 miles of the project site, and this species was not observed during the 2005 surveys. However, merlins could forage on the project site during the winter.

5.3.11 Prairie Falcon

The prairie falcon (*Falco mexicanus*) is a State species of concern, but has no federal status. This species nests on cliffs in dry, open terrain, and forages in open areas such as grasslands, rangeland, savannahs, desert scrub, and agricultural fields.

No prairie falcon nesting habitat occurs on the project site. The CNDDB does not contain any records of the prairie falcon within 10 miles of the project site, and this species was not observed during the 2005 surveys. However, prairie falcons could forage on the project site.

5.3.12 White-Tailed Kite

The white-tailed kite (*Elanus leucurus*) is fully protected under California Fish and Game Code and the MBTA. This raptor species uses scattered trees for breeding, and open grasslands and marshes for foraging. The CNDDB does not contain any records of white-tailed kite nesting within 10 miles of the project site, but one white-tailed kite nest was identified on the project site. The agricultural fields on the project site provide suitable foraging habitat for white-tailed kite.

5.3.13 Loggerhead Shrike

The loggerhead shrike (*Lanius ludovicianus*) is a federal and State species of concern. This species nests in broken woodlands, savannahs, riparian, and other woodlands. Loggerhead shrikes prefer open country with scattered perches for hunting, with dense shrubs and brush for nesting.

The CNDDB does not contain any records of loggerhead shrike within 10 miles of the project site. Suitable habitat occurs on the project site, and this species could nest and forage here.

5.3.14 Nuttall's Woodpecker

The Nuttall's woodpecker (*Picoides nuttallii*) is a federal species of local concern; it has no State status. This species inhabits oak forest and woodland, chaparral, and riparian woodland. The Nuttall's woodpecker nests in tree cavities in riparian habitats. This species usually nests in dead trunks or limbs of cottonwood, sycamore, alder, and willow, but sometimes utilizes oak species.

There are no reported occurrences of this species in the CNDDB, and no Nuttall's woodpeckers were observed during the 2005 site visits. Suitable nesting and foraging habitat for Nuttall's woodpecker exists on the project site, and this species could occur here.

5.3.15 Western Pond Turtle

The western pond turtle (*Clemmys marmorata*), a California and federal species of concern, ranges from western Washington state south to northwestern Baja California. Pond turtles are an aquatic species, found in ponds, marshes, rivers, streams, and irrigation ditches that typically have rocky or muddy bottoms and are vegetated with aquatic vegetation. Eggs are laid at upland sites, away from the water, from April through August. The CNDDB does not contain any records for western pond turtle within 10 miles of the project site, but French Camp Slough provides potential habitat for this species.

5.3.16 Giant Garter Snake

The giant garter snake (*Thamnophis gigas*) is a federal and State threatened species. This species occurs in the Sacramento and San Joaquin Valleys in California. Giant garter snakes utilize agricultural wetlands, irrigation and drainage canals, ricelands, marshes, sloughs, ponds, small lakes, low gradient streams, and adjacent upland areas. The giant garter snake requires several habitat components, including adequate water during the active season (early spring through late fall) to provide an adequate food source; emergent, herbaceous wetland vegetation for cover and foraging; upland habitat for basking; and higher elevation upland habitat for cover and refugia.

The banks of French Camp Slough on the project site are steep, the water levels fluctuate daily, and there is very little emergent vegetation in the slough. These factors limit the suitability of the project site for giant garter snakes and reduce the likelihood of their presence. The upland areas adjacent to French Camp Slough provide only marginal habitat for this species due to the high level of cultivation on the project site. The closest CNDDB occurrence for giant garter snake is approximately 6.5 miles north of the project site in the Stockton diverting canal near State Route 99.

Per the SJMSCP (2000), known occupied habitat for giant garter snake includes the area west of I-5 on Terminous Tract, Shin Kee Tract, White Slough Wildlife Area, and Rio Blanco Tract. The project site is not within known occupied habitat for giant garter snake, but is within potential giant garter snake habitat as described in the SJMSCP (2000).

5.3.17 Delta Smelt

The Delta smelt (*Hypomesus transpacificus*) is a State and federal threatened species. This species has been found as far inland as Mossdale on the San Joaquin River (SJMSCP 2000). The distribution of the species within the Delta varies depending on the volume of freshwater outflow and how it affects the saltwater intrusion. Delta smelt utilize shallow water habitat between mean high water and about 10 feet below mean low water. Spawning occurs from December to the end of June in dead-end sloughs, shore areas of the Delta, or river edges. Spawning occurs in the water column above vegetation or in open water above sandy or rocky substrates. Delta smelt have been collected and observed from waterways within the delta system and suitable habitat exists in French Camp Slough within the project area.

5.3.18 River Lamprey, Kern Brook Lamprey, and Pacific Lamprey

The river lamprey (*Lampetra ayresi*), Kern brook lamprey (*Lampetra hubbsi*), and Pacific lamprey (*Lampetra tridentata*) are federal species of concern. The river lamprey and Kern brook lamprey are also State species of concern. These species are anadromous and spawn in the Sacramento, San Joaquin, and Russian Rivers (*L. ayresi*); lower reaches of the Merced River, Kaweah River, Kings River, and San Joaquin River (*L. hubbsi*); and the Sacramento, San Joaquin, and American Rivers (*L. tridentata*). Adult lampreys require clean, gravelly riffles in permanent streams for spawning, and juveniles utilize backwater areas, side channels, and low gradient areas.

5.3.19 Central Valley Steelhead and Fall Run/Late-Fall Run Chinook Salmon

The Central Valley steelhead (*Oncorhynchus mykiss*) is a federal threatened species, and the Central Valley fall run/late-fall run chinook salmon (*Oncorhynchus tshawytscha*) is a federal species of concern. Neither species has any State status. Steelhead and salmon are anadromous fish that spend part of their life cycle in freshwater and part in saltwater. These species spawn in small, freshwater streams where the young remain for one to several years before migrating to the ocean to feed and grow. Adults return to their natal streams to spawn and complete their lifecycle. French Camp Slough provides potential migration habitat for juveniles and adults of these species. French Camp Slough is also designated as Essential Fish Habitat (EFH) for chinook salmon.

5.3.20 Sacramento Splittail

The Sacramento splittail (*Pogonichthys macrolepidotus*) is a federal and State species of concern. This species was previously listed as federally threatened. On September 22, 2003, the USFWS removed the Sacramento splittail from the list of threatened species. Sacramento splittail occur commonly throughout the Delta and Suisun Bay, and also occur in the Sacramento River and its tributaries. This species prefers large channels or sloughs (often dead end sloughs) that are fed by freshwater streams. Splittail utilize shallow edgewater areas with emergent aquatic vegetation, and require shallow, seasonally flooded vegetation for spawning.

5.4 POTENTIAL JURISDICTIONAL WATERS

A wetland delineation was conducted on the project site in April/June 2006. Aquatic resources (e.g., French Camp Slough) on the project site may be subject to U.S. Army Corps of Engineers, State or Regional Water Quality Control Board, and/or California Department of Fish and Game jurisdiction as waters of the United States or waters of the State. Fill of jurisdictional areas would require appropriate permits from the agencies named above.

CHAPTER 6.0 PROJECT IMPACTS AND RECOMMENDED MITIGATION MEASURES

This section provides an analysis of the project impacts that may occur with development of the project site and the recommended mitigation measures for offsetting those impacts. The evaluation of impacts is based on the resources present, or reasonably likely to be present, on the project site and the proposed project as described herein.

6.1 IMPACT EVALUATION

6.1.1 Plant Communities and Associated Wildlife

Impacts to plant communities and associated wildlife will occur as a result of development of the project site. Both native and nonnative plant communities and associated wildlife habitat occurring on the site will be affected. Plant communities affected will include agricultural land, orchard, valley oak series, and ruderal habitat. Wildlife using these areas could be killed outright or displaced to other adjacent habitats, ultimately leading to locally reduced wildlife populations. Impacts to wildlife may be greater if work begins in spring, when many species are breeding/nesting. The loss of habitat in this region will contribute to the regional cumulative loss of wildlife habitat, including habitat for special status species.

The loss of nesting/roosting and foraging habitat for special status species is discussed in more detail in the following sections of this report.

6.1.2 Tree Removal

The proposed project will involve extensive grading and disturbance of the project site as construction proceeds, and the development of proposed land uses may impact existing vegetation, including 290 native trees located throughout the project site (see Figure 6). Of these 290 native trees, 248 are valley oaks, and 87 valley oaks are classified as heritage trees by the City of Stockton Heritage Tree Ordinance. Impacts to individual trees are summarized in Table 5, below. Tree impacts are included as part of plant community impact acreage, and thus are covered in accordance with the SJMSCP provisions. In addition, mitigation in accordance with the City of Stockton Heritage Tree Ordinance may be required.

Figure 6: Tree Impacts

Table 5: Native Trees Impacted by the Project

Common Name	Scientific Name	# Trees Impacted	# Heritage Trees Impacted
Black walnut	*Juglans californica* var. *hindsii*	1	--
Box elder	*Acer negundo* var. *californica*	13	--
Fremont cottonwood	*Populus fremontii*	2	--
Goodding's black willow	*Salix gooddingii*	12	--
Oregon ash	*Fraxinus latifolia*	14	--
Valley Oak	*Quercus lobata*	248	87
Total		**290**	**87**

6.1.3 Special Status Species

6.1.3.1 Bat Species

Focused surveys for bat species were not conducted. Many species of bats are known to occur in San Joaquin County, and potential roost sites (i.e., buildings, trees, etc.) exist on the project site. Project construction could result in direct impacts to bats, bat roosting, and foraging habitat. Bat species are covered in the SJMSCP. Incidental Take Minimization Measures, outlined in Section 6.2.3.1 below, may be required to offset potential impacts to roosting bats.

6.1.3.2 Tricolored Blackbird

Red-winged blackbirds were observed nesting in a large patch of milk thistle adjacent to French Camp Slough on the project site, but no tricolored blackbirds were observed. Tricolored blackbirds could nest and forage in this area on the project site. If nesting occurs on the project site, a large number of tricolored blackbirds, which are highly colonial, could be affected by the proposed project. The tricolored blackbird is covered under the SJMSCP. Incidental Take Minimization Measures, outlined in Section 6.2.3.2 below, may be required to offset potential impacts to nesting birds.

6.1.3.3 Short-Eared Owl and Northern Harrier

The proposed project may result in direct impacts to nesting short-eared owls and northern harriers, and will impact suitable nesting and foraging habitat for these species. The short-eared owl and northern harrier are covered under the SJMSCP. Mitigation is required to offset potential impacts to nesting birds (see Section 6.2.3.3 below).

6.1.3.4 Western Burrowing Owl

The proposed project may result in impacts to nesting and/or wintering birds and impacts to suitable foraging habitat (i.e., croplands) for burrowing owls. The CNDDB contains several records for burrowing owl within 8.0 km (5.0 mi) of the project site. Since no occupied burrows were observed, burrowing owls are considered absent from the burrows on the project site. However, since this

species is migratory and is foraging on the project site, burrowing owls could migrate into the burrows on the project site prior to construction.

Project development may result in the direct loss of nesting sites (burrows). Development of the project site will also contribute to the cumulative loss of foraging habitat for burrowing owls. The burrowing owl is a covered species under the SJMSCP. Mitigation is required to offset potential impacts to nesting birds (see Section 6.2.3.4 below).

6.1.3.5 Aleutian Canada Goose

The proposed project will impact Aleutian Canada goose wintering habitat. Loss of wintering habitat for this species is covered under the SJMSCP. The risk of actually killing or harming a Canada goose during project construction is nearly non-existent because this species is highly mobile. Therefore, Incidental Take Minimization Measures for the Aleutian Canada goose are not included in the SJMSCP, and this is considered to be consistent with the provisions of the Migratory Bird Treaty Act. No additional mitigation is required.

6.1.3.6 Ferruginous Hawk

The proposed project will remove potential wintering habitat for ferruginous hawk. The risk of taking a Ferruginous hawk during project construction is very low since this species can relocate if disturbed by construction activities. This species does not nest in California; consequently, impacts to nesting habitat will not occur. The ferruginous hawk is covered under the SJMSCP. No additional mitigation is required.

6.1.3.7 Swainson's Hawk

The proposed project will remove potential nesting trees, and will impact Swainson’s hawk foraging habitat. Swainson’s hawk is a covered species under the SJMSCP. Mitigation is required to offset potential impacts to nesting birds (see Section 6.2.3.5 below).

6.1.3.8 Mountain Plover

The project will remove potential wintering habitat for mountain plover. The risk of taking a mountain plover during project construction is very low since this species can relocate if disturbed by construction activities. The mountain plover is covered under the SJMSCP. No additional mitigation is required.

6.1.3.9 Merlin

The project will remove suitable wintering habitat for this species. The risk of taking a merlin during project construction is very low since this species can relocate if disturbed by construction activities. The project will remove potential wintering habitat for this species, but will not impact nesting habitat or nesting merlins. The merlin is covered under the SJMSCP. No additional mitigation is required.

6.1.3.10 Prairie Falcon

The project will remove suitable foraging habitat for this species, but will not impact nesting habitat or nesting prairie falcons. The risk of taking a prairie falcon during project construction is very low since this species can relocate if disturbed by construction activities. Loss of foraging habitat for the prairie falcon is covered under the SJMSCP. No additional mitigation is required.

6.1.3.11 White Tailed Kite

The proposed project will remove potential nesting trees and will impact white-tailed kite foraging habitat. The white-tailed kite is covered under the SJMSCP. Mitigation is required to offset potential impacts to nesting birds (see Section 6.2.3.6 below).

6.1.3.12 Loggerhead Shrike

The project will remove potential nesting and foraging habitat for loggerhead shrike. The loggerhead shrike is covered under the SJMSCP. Mitigation is required to offset potential impacts to nesting birds (see Section 6.2.3.7 below).

6.1.3.13 Nuttall's Woodpecker

The project will remove potential nesting and foraging habitat for Nuttall's woodpecker. This species is not covered under the SJMSCP. Mitigation is required to offset potential impacts to nesting birds (see Section 6.2.3.7 below).

6.1.3.14 Western Pond Turtle

The reach of French Camp Slough on the project site may be used by pond turtles. Impacts to pond turtles may occur through alteration of adjacent upland areas where pond turtles nest. No work will be conducted in French Camp Slough. This species is covered under the SJMSCP. Mitigaton is required to offset potential impacts to western pond turtle (see Section 6.2.3.8 below).

6.1.3.15 Giant Garter Snake

The project will impact potential giant garter snake upland habitat. The giant garter snake is covered under the SJMSCP except for projects in known occupied habitat. Per the SJMSCP (2000), known occupied habitat for giant garter snake includes the area west of I-5 on Terminous Tract, Shin Kee Tract, White Slough Wildlife Area, and Rio Blanco Tract. The project site is not within known occupied habitat for giant garter snake, but is within potential giant garter snake habitat as described in the SJMSCP (2000). Mitigation measures are required to minimize impacts to giant garter snake (see Section 6.2.3.9 below).

6.1.3.16 Delta Smelt

Delta smelt have been collected and observed from waterways within the Delta system, and suitable habitat exists in French Camp Slough on the project site. The bridge crossings will span French Camp Slough, and no construction will be conducted in the water. The project will impact riparian vegetation along French Camp Slough, which could adversely affect habitat for Delta Smelt due to water quality impacts. Delta smelt are covered under the SJMSCP. Mitigation measures are required to minimize impacts to Delta smelt (see Section 6.2.3.10 below).

6.1.3.17 River Lamprey, Kern Brook Lamprey, and Pacific Lamprey

Suitable habitat for river lamprey, Kern brook lamprey, and Pacific lamprey exists in French Camp Slough within the project area. The bridge crossings will span French Camp Slough, and no construction will be conducted in the water. The project will impact riparian vegetation along French Camp Slough, which could affect habitat for lamprey species due to water quality impacts. Lamprey species are not covered under the SJMSCP. Mitigation measures are required to minimize impacts to lamprey species (see Section 6.2.3.11 below).

6.1.3.18 Central Valley Steelhead and Central Valley Fall Run/Late-Fall Run Chinook Salmon

French Camp Slough provides potential migration habitat for Central Valley steelhead and Central Valley fall run/late-fall run chinook salmon. French Camp Slough is designated as Essential Fish Habitat (EFH) for chinook salmon. The bridge crossings will span French Camp Slough, and no construction will be conducted in the water. The project will impact riparian vegetation along French Camp Slough, which could impact these species due to water quality impacts. Steelhead and salmon species are not covered under the SJMSCP. Mitigation measures are required to minimize impacts to steelhead and salmon (see Section 6.2.3.11 below).

6.1.3.19 Sacramento Splittail

French Camp Slough provides potential habitat for Sacramento splittail. The bridge crossings will span French Camp Slough, and no construction will be conducted in the water. The project will impact riparian vegetation along French Camp Slough, which could impact this species due to water quality impacts. Impacts to Sacramento splittail are covered under the SJMSCP. Mitigation measures are required to minimize impacts to Sacramento splittail (see Section 6.2.3.11 below).

6.2 MITIGATION MEASURES

LSA recommends the following mitigation measures to minimize impacts to biological resources. These mitigation measures are consistent with the mitigation and Incidental Take Minimization Measures outlined in the SJMSCP, as applicable. Mitigation measures are also provided for species not covered under the SJMSCP. The Incidental Take Minimization Measures from the SJMSCP represent the best management practices known at the time of adoption of the SJMSCP. Incidental Take Minimization Measures shall be completed prior to site disturbance as indicated in the conditions of project approval.

6.2.1 Compensation Mitigation

The project shall implement the SJMSCP conservation strategy which includes one or a combination of two or more of the following options, to provide compensation pursuant to the SJMSCP:

1. Pay the appropriate fee as indicated in the SJMSCP; or

2. Dedicate, as conservation easements or fee title, or in-lieu dedications; or

3. Purchase approved mitigation bank credits; or

4. Propose an alternative mitigation plan, consistent with the goals of the SJMSCP and equivalent in biological value to options A, B, and C, above, subject to approval by the JPA with the concurrence of the Permitting Agencies' representatives on the TAC.

Once the applicant selects from these options, additional interaction with SJCOG, Inc. will be required. This includes a biologist on-call with SJCOG, Inc. conducting a survey of the project site to confirm findings from prior biological surveys. The biologist will collect information relating to the project site such as habitat type and potential presence of covered species. This information will be used to formulate Incidental Take Minimization Measures for the project applicant consistent with the SJMSCP. Focused wildlife and plant surveys, including preconstruction surveys, are not conducted by the SJCOG, Inc. biologist, but are the responsibility of the project applicant (Steve Mayo, SJCOG, Inc., pers. comm). Mitigation measures consistent with the SJMSCP are included in the mitigation requirements for individual species, as described in Section 6.2.3, below.

6.2.2 Tree Mitigation

Since impacts to native trees are included within plant community impact acreages, loss of trees shall be mitigated through the SJMSCP as part of mitigation for open space conversion. The SJMSCP includes minimum criteria (i.e., preserve size, canopy cover, adjacent habitat, etc.) for establishing preserves based on the type of habitat preserved.

Impacts to individual heritage oak trees shall be mitigated in accordance with the City of Stockton Heritage Tree Ordinance. Compliance with the Heritage Tree Ordinance requires the following:

1. The applicant shall apply to the City Parks and Recreation Department for a permit and pay a fee to cover the cost of processing the application, including the cost of publication of the notice.

2. The City Landscape Architect, or designee as determined by the Director of Parks and Recreation, shall review each application and any written or oral testimony and decide if a permit should be granted based on the following:

    a. The condition of the tree or trees with respect to disease, danger of falling, proximity to existing or proposed structures and interference with utility services.

b. The necessity to remove the tree or trees in order to construct any proposed improvements, and the possibility of revising proposed tentative subdivision maps and improvement plans in order to save the trees.

c. The topography of the land and the effect of the removal of the tree on erosion, soil retention and diversion or increased flow of surface waters.

d. The number of similar trees existing in the vicinity.

3. The applicant shall replace all trees removed on a one for one basis at the discretion of the City Landscape Architect. The size of the replacement tree shall be determined by the City Landscape Architect based on the size of the tree that is removed. If possible, the replacement tree or trees shall be planted on the same parcel as the trees that were removed. If that is not possible, the replacement tree or trees shall be planted in a City park or some other suitable location as determined by the City Landscape Architect.

6.2.3 Special Status Species

6.2.3.1 Bat Species

Focused bat surveys shall be conducted on the project site by a qualified bat biologist to determine if nursery or roost sites are present. Focused surveys shall be the responsibility of the project applicant. If bats are roosting on the project site, the following measures shall be implemented:

1. Prior to the nursery season indicated in the following table for these species, nursery sites shall be sealed.

Bat Species	Preferred Occupation Site	Nursery Season
Greater western mastiff bat	Cliff or rock crevice (usual), tree or snag (occasional)	April – September
Small-footed myotis	Cave, adit, cliff, rock crevice, building	May – August
Long-eared myotis	Cave, adit, tree, snag	May – August
Fringed myotis	Cave, adit, cliff, rock crevice, building	May – August
Long-legged myotis	Cave, adit, cliff, rock crevice, tree, snag, building	May – August
Western red bat	Tree, snag, cave (occasionally)	May – August
Yuma myotis	Cave, adit, cliff, rock crevice, structure, cistern, bridge, tree, snag	May – August
Pale big-eared bat	Cave, adit, cliff, rock crevice, structure, cistern, bridge	May – August
Pacific western big-eared bat	Cave, adit, cliff, rock crevice, structure, cistern, bridge	April – August

2. Seal hibernation sites, prior to the hibernation season (November through March) when hibernation sites are identified on the project site.

3. When colonial roosting sites located in trees or structures must be removed, removal shall occur outside of the nursery and/or hibernation seasons and shall occur during dusk and/or evening hours after bats have left the roosting site, unless otherwise approved by the JPA and Permitting Agencies.

6.2.3.2 Tricolored Blackbird

Direct take of nesting tricolored blackbirds would be in violation of the Fish and Game Code and MBTA, and tricolored blackbird is a covered species under the SJMSCP. The following mitigation measures are consistent with the SJMSCP Incidental Take Minimization Measures for tricolored blackbird and the provisions of the MBTA.

1. Prior to issuance of a grading permit, the project proponent shall implement the SJMSCP conservation strategy, as described in Section 6.2.1, to provide compensation pursuant to the SJMSCP.

2. If project construction is to begin during the nesting season (March 1 - September 15), all suitable nesting habitat on the project site and within 500 feet of the limits of work shall be surveyed by a qualified biologist prior to initiating construction-related activities. Surveys shall be conducted no more than 14 days prior to the start of work.

3. If nesting areas are identified, a setback of 500 feet from colonial nesting areas shall be established and maintained during the nesting season for the period encompassing nest building and continuing until fledglings leave nests. This setback applies whenever construction or other ground-disturbing activities must begin during the nesting season in the presence of nests which are known to be occupied. Setbacks shall be marked by brightly colored temporary fencing.

6.2.3.3 Short-Eared Owl and Northern Harrier

Direct take of nesting short-eared owls and northern harriers would be in violation of the Fish and Game Code and MBTA, and these species are covered under the SJMSCP. The following mitigation measures are consistent with the SJMSCP Incidental Take Minimization Measures for short-eared owl and northern harrier, and the provisions of the MBTA.

1. Prior to issuance of a grading permit, the project proponent shall implement the SJMSCP conservation strategy, as described in Section 6.2.1, to provide compensation pursuant to the SJMSCP.

2. If project construction is to begin during the nesting season (March 1 - September 15), all suitable nesting habitat on the project site and within 500 feet of the limits of work shall be surveyed by a qualified biologist prior to initiating construction-related activities. Surveys shall be conducted no more than 14 days prior to the start of work.

3. A setback of 500 feet from nesting areas shall be established and maintained during the nesting season for the period encompassing nest building and continuing until fledglings leave the nest. This setback applies whenever construction or other ground-disturbing activities must begin during the nesting season in the presence of nests which are known to be occupied. Setbacks shall be marked by brightly colored temporary fencing.

6.2.3.4 Burrowing Owl

Direct take of nesting burrowing owls would be in violation of the Fish and Game Code and MBTA, and burrowing owl is a covered species under the SJMSCP. The following mitigation measures are consistent with the SJMSCP Incidental Take Minimization Measures for burrowing owl and the provisions of the MBTA.

1. Prior to issuance of a grading permit, the project proponent shall implement the SJMSCP conservation strategy, as described in Section 6.2.1, to provide compensation pursuant to the SJMSCP.

2. No more than 30 days prior to any ground disturbing activities, a qualified biologist shall conduct surveys for burrowing owls. If ground disturbing activities are delayed or suspended for more than 30 days after the initial preconstruction surveys, the site shall be resurveyed. All surveys shall be conducted in accordance with CDFG's Staff Report on Burrowing Owls (CDFG, 1995).

3. If the preconstruction surveys identify burrowing owls on the site during the non-breeding season (September 1 through January 31), burrowing owls occupying the project site shall be evicted from the project site by passive relocation as described in the CDFG's Staff Report on Burrowing Owls (CDFG 1995).

4. If the preconstruction surveys identify burrowing owls on the site during the breeding season (February 1 through August 31), occupied burrows shall not be disturbed and shall be provided with a 250-foot protective buffer. The buffer shall be maintained until the SJMSCP Technical Advisory Committee (TAC), with the concurrence of CDFG representatives on the TAC, or a qualified biologist approved by CDFG, verifies through non-invasive means that either: 1) the birds have not begun egg laying, or 2) juveniles from the occupied burrows are foraging independently and are capable of independent survival. Once the fledglings are capable of independent survival, the burrow(s) can be destroyed.

6.2.3.5 Swainson's Hawk

Direct take of nesting Swainson's hawk would be in violation of the Fish and Game Code and MBTA. In addition, Swainson's hawk is a covered species under the SJMSCP. The following mitigation measures are consistent with the SJMSCP Incidental Take Minimization Measures for this species and the provisions of the MTBA.

1. Prior to issuance of a grading permit, the project proponent shall implement the SJMSCP conservation strategy, as described in Section 6.2.1, to provide compensation pursuant to the SJMSCP.

2. Removal of suitable nest trees shall be completed during the non-nesting season (when the nests are unoccupied), between September 1 and February 15.

3. If suitable nest trees will be retained and ground disturbing activities will commence during the nesting season (February 16 through August 31), all suitable nest trees on the site will be surveyed by a qualified biologist prior to initiating construction-related activities. Surveys will be conducted no more than 14 days prior to the start of work. If an active nest is discovered, a 100-foot buffer shall be established around the nest tree and delineated using orange construction fence or equivalent. The buffer shall be maintained in place until the end of the breeding season or until the young have fledged, as determined by a qualified biologist.

   In some instances, CDFG may approve decreasing the specified buffers with implementation of other avoidance and minimization measures (e.g., having a qualified biologist on-site during construction activities during the nesting season to monitor nesting activity). If no nesting is discovered, construction can begin as planned. Construction beginning during the non-nesting season and continuing into the nesting season shall not be subject to these measures.

6.2.3.6 White-Tailed Kite

Direct take of nesting white-tailed kites would be in violation of the Fish and Game Code and MBTA. White-tailed kite is a covered species under the SJMSCP. The following mitigation measures are consistent with the SJMSCP Incidental Take Minimization Measures for white-tailed kite and the provisions of the MBTA.

1. Prior to issuance of a grading permit, the project proponent shall implement the SJMSCP conservation strategy, as described in Section 6.2.1, to provide compensation pursuant to the SJMSCP.

2. Removal of suitable nest trees shall be completed during the non-nesting season (when the nests are unoccupied), between September 1 and February 15.

3. If suitable nest trees will be retained and ground disturbing activities will commence during the nesting season (February 16 through August 31), all suitable nest trees on the site will be surveyed by a qualified biologist prior to initiating construction-related activities. Surveys will be conducted no more than 14 days prior to the start of work.

4. If an active nest is discovered, a 100-foot buffer shall be established around the nest tree and delineated using orange construction fence or equivalent. The buffer shall be maintained in place until the end of the breeding season or until the young have fledged, as determined by a qualified biologist.

6.2.3.7 Loggerhead Shrike and Nuttall's Woodpecker

Direct take of nesting loggerhead shrikes and Nuttall's woodpeckers would be in violation of the Fish and Game Code and MBTA. Loggerhead shrike is a covered species under the SJMSCP. The following mitigation measures are consistent with the SJMSCP Incidental Take Minimization Measures for loggerhead shrike and the provisions of the MBTA.

1. Prior to issuance of a grading permit, the project proponent shall implement the SJMSCP conservation strategy, as described in Section 6.2.1, to provide compensation pursuant to the SJMSCP.

2. If project construction is to begin during the nesting season (March 1 - September 15), all suitable nesting habitat on the project site and within 100 feet of the limits of work shall be surveyed by a qualified biologist prior to initiating construction-related activities. Surveys shall be conducted no more than 14 days prior to the start of work

3. A 100-foot setback from nesting areas shall be established and maintained during the nesting season for the period encompassing nest building, and continuing until fledglings leave nests. This setback applies whenever construction or other ground-disturbing activities must begin during the nesting season in the presence of nests which are known to be occupied. Setbacks shall be marked by brightly colored temporary fencing.

6.2.3.8 Western Pond Turtle

Western pond turtle is a covered species under the SJMSCP. The following mitigation measures are consistent with the SJMSCP Incidental Take Minimization Measures for western pond turtle.

1. Prior to issuance of a grading permit, the project proponent shall implement the SJMSCP conservation strategy, as described in Section 6.2.1, to provide compensation pursuant to the SJMSCP.

2. Preconstruction surveys for western pond turtle shall be conducted no more than 14 days prior to project construction.

3. If nesting areas for pond turtles are identified on the project site, a buffer area of 300 feet shall be established between the nesting site and the wetland located near the nesting site. These buffers shall be indicated by temporary fencing if construction has or will begin before nesting periods are ended (the period from egg laying to emergence of hatchlings is normally April to November).

6.2.3.9 Giant Garter Snake

The giant garter snake is a covered species under the SJMSCP. The following mitigation measures are consistent with the SJMSCP Incidental Take Minimization Measures for giant garter snake.

1. Prior to issuance of a grading permit, the project proponent shall implement the SJMSCP conservation strategy, as described in Section 6.2.1, to provide compensation pursuant to the SJMSCP. Documentation of fee payment shall be provided to the USFWS prior to the start of construction.

2. Construction shall occur during the active period for the snake, between May 1 and October. Between October 2 and April 30 contact the Service's Sacramento Fish and Wildlife Office to determine if additional measures are necessary to minimize and avoid take.

3. Limit vegetation clearing within 200 feet of the banks of potential giant garter snake aquatic habitat to the minimal area necessary.

4. Confine the movement of heavy equipment within 200 feet of the banks of potential giant garter snake aquatic habitat to existing roadways to minimize habitat disturbance.

5. Prior to ground disturbance, all on-site construction personnel shall be given instruction regarding the presence of SJMSCP Covered Species and the importance of avoiding impacts to these species and their habitats.

6. In areas where wetlands, irrigation ditches, marsh areas, or other potential giant garter snake habitats are being retained on the site:

    a. Install temporary fencing at the edge of the construction area and the adjacent wetland, marsh, or ditch;

    b. Restrict working areas, spoils, and equipment storage and other project activities to areas outside of marshes, wetlands and ditches; and

    c. Maintain water quality and limit construction runoff into wetland areas through the use of hay bales, filter fences, vegetative buffer strips, or other accepted equivalents.

7. If on-site wetlands, irrigation ditches, marshes, etc. are being relocated in the vicinity, the newly created aquatic habitat shall be created and filled with water prior to dewatering and destroying the pre-existing aquatic habitat. In addition, non-predatory fish species that exist in the aquatic habitat and which are to be relocated shall be seined and transported to the new aquatic habitat as the old site is dewatered.

8. If wetlands, irrigation ditches, marshes, etc. shall not be relocated in the vicinity, then the aquatic habitat shall be dewatered at least two weeks prior to commencing construction.

9. Pre-construction surveys for the giant garter snake (conducted after completion of environmental reviews and prior to ground disturbance) shall occur within 24 hours of ground disturbance.

10. Other provisions of the USFWS Standard Avoidance and Minimization Measures during Construction Activities in Giant Garter Snake Habitat shall be implemented (excluding

programmatic mitigation ratios which are superseded by the SJMSCP's mitigation ratios). These provisions are listed below:

a. Survey of the project area shall be repeated if a lapse in construction activity of two weeks or greater has occurred. If a snake is encountered during construction, activities shall cease until appropriate corrective measures have been completed or it has been determined that the snake shall not be harmed. Report any sightings and any incidental take to the Service immediately by telephone at (916) 414-6600.

b. Following project completion, all areas temporarily disturbed during construction shall be restored following the "Guidelines for Restoration and/or Replacement of Giant Garter Snake Habitat" outlined below.

    i. The disturbed area shall be regraded to its preexisting contour and ripped, if necessary, to decompact the soil.

    ii. The area shall be hydroseeded. Hydroseed mix shall contain at least 20-40 percent native grass seeds. Some acceptable native grasses include annual fescue (*Vulpia* spp.), California brome (*Bromus carinatus*), blue wildrye (*Elymus glaucus*), and needle grass (*Nassella* spp.). The seed mix shall also contain 2-10 percent native forb seeds, five percent rose clover (*Trifolium hirtum*), and five percent alfalfa (*Medicago sativa*). Approximately 40-68 percent of the mixture may be non-aggressive European annual grasses, such as wild oats (*Avena sativa*), wheat (*Triticum* sp.), and barley (*Hordeum vulgare*). Aggressive non-native grasses shall not be included in the seed mix. These grasses include perennial ryegrass (*Lolium perenne*), cheatgrass (*Bromus tectorum*), fescue (*Festuca* sp.), giant reed (*Arundo donax*), medusa-head (*Taeniatherum caput-medusae*), or Pampas grass (*Cortaderia selloana*). Endophyte-infected grasses shall not be included in the seed mix.

In addition to the above measures, the following avoidance and minimization measures shall also be implemented

11. All construction shall be conducted during daylight hours.

12. Measures consistent with the current Caltrans' Construction Site Best Management Practices (BMPs) Manual (including the Storm Water Pollution Prevention Plan [SWPPP] and Water Pollution Control Program [WPCP] Manuals [http://www.dot.ca.gov/hq/construc/Construction_Site_BMPs.pdf])[2] shall be implemented to minimize effects to giant garter snake (e.g., siltation, etc.) during construction.

[2] The Caltrans Construction BMPs Manual is considered the industry standard for protection of water quality during construction activities and, as such, is also applicable to non-roadway projects.

6.2.3.10 Delta Smelt

The Delta smelt is covered under the SJMSCP. The following mitigation measures are consistent with the SJMSCP Incidental Take Minimization Measures for fish species.

1. Prior to issuance of a grading permit, the project proponent shall implement the SJMSCP conservation strategy, as described in Section 6.2.1, to provide compensation pursuant to the SJMSCP. Documentation of fee payment shall be provided to the USFWS prior to the start of construction.

2. All construction shall be conducted during daylight hours.

3. Measures consistent with the current Caltrans' Construction BMPs Manual (including the SWPPP and WPCP Manuals [http://www.dot.ca.gov/hq/construc/Construction_Site_BMPs.pdf]) shall be implemented to minimize effects to fish species (e.g., siltation, etc.) during construction.

6.2.3.11 River Lamprey, Kern Brook Lamprey, Pacific Lamprey, Central Valley Steelhead, Chinook Salmon, and Sacramento Splittail

Lamprey species, Central Valley steelhead, and chinook salmon are not covered under the SJMSCP. Sacramento splittail is a covered species under the SJMSCP. The following mitigation measures, which are consistent with the Incidental Take Minimization Measures for SJMSCP covered fish species, will also minimize impacts to lamprey species, Central Valley steelhead, and chinook salmon.

1. Prior to issuance of a grading permit, the project proponent shall implement the SJMSCP conservation strategy, as described in Section 6.2.1, to provide compensation pursuant to the SJMSCP.

2. All construction shall be conducted during daylight hours.

3. Measures consistent with the current Caltrans' Construction BMPs Manual (including the SWPPP and WPCP Manuals [http://www.dot.ca.gov/hq/construc/Construction_Site_BMPs.pdf]) shall be implemented to minimize effects to fish species (e.g., siltation, etc.) during construction.

CHAPTER 7.0 REFERENCES AND LITERATURE CITED

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APPENDIX A

CNDDB, CNPS AND USFWS LISTS

APPENDIX B

WILDLIFE AND PLANT SPECIES OBSERVED ON THE TIDEWATER CROSSING PROJECT SITE

Wildlife

Scientific Name	Common Name
Agelaius phoeniceus	Red-winged blackbird
Aphelocoma californica	Western scrub-jay
Buteo jamaicensis	Red-tailed hawk
Buteo lineatus	Red-shouldered hawk
Buteo swainsoni	Swainson's hawk
Callipepla californica	California quail
Charadrius vociferus	Killdeer
Corvus brachyrhynchos	American crow
Guiraca caerulea	Blue grosbeak
Icterus cucullatus	Hooded oriole
Lanius ludovicianus	Loggerhead shrike
Mimus polyglottos	Northern mockingbird
Orconectes virilis	Crayfish
Petrochelidon pyrrhonota	Cliff swallow
Pica nuttalli	Yellow-billed magpie
Sayornis nigricans	Black phoebe
Spermophilus beecheyi	California ground squirrel
Sturnella neglecta	Western meadowlark
Sylvilagus audubonii	Audubon's cottontail
Tyrannus verticalis	Western kingbird
Zenaida macroura	Mourning dove

Plants

Scientific Name	Common Name	Family
Acer negundo var. *californicum*	Box-elder	Aceraceae
Agrostis exerata		Poaceae
Allium cepa	Onion	Liliaceae
Amaranthus albus	tumbleweed	Asteraceae
Ammi visnaga	Bisnaga	Apiaceae
Anagallis arvensis	Scarlet Pimpernel	Primulaceae
Anthemis cotula	Mayweed	Asteraceae
Artemisia douglasiana	Mugwort	Asteraceae
Asclepias fascicularis	Narow-leaf milkweed	Asclepiadaceae
Asparagus officinalis	Asparagus	Liliaceae
Aster sp.	Aster	Asteraceae
Avena barbata	Wild oats	Poaceae
Brassica nigra	Black mustard	Brassicaceae
Bromus diandrus	Ripgut brome	Poaceae

Scientific Name	Common Name	Family
Bromus hordeaceus	Soft chess	Poaceae
Capsella bursa-pastoris	Sheperd's purse	Brassicaceae
Carduus pycnocephalus	Italian thistle	Asteraceae
Centaurea solstitialis	Yellow star-thistle	Asteraceae
Chenopodium album sp. album		Chenopodiaceae
Cichorium intybus	Chicory	Asteraceae
Cirsium vulgaris	Bull thistle	Asteraceae
Conium maculatum	Poison hemlock	Apiaceae
Convolvulus arvensis	Field bindweed	Convolulaceae
Conyza sp.	Horsetail	Asteraceae
Cucurbita sp.	Gourd	Cucurbitaceae
Cuscuta sp.	Dodder	Cuscutaceae
Cynara cardunculus	Artichoke thistle	Asteraceae
Cynodon dactylon	Bermuda grass	Poaceae
Cyperus eragrostis	Nutsedge	Cyperaceae
Cyperus eragrostis	Nutsedge	Cyperaceae
Elymus glaucus	Blue wildrye	Poaceae
Epilobium brachycarpum	Willow herb	Onagraceae
Epilobium ciliatum	Willow herb	Onagraceae
Foeniculum vulgare	Fennel	Apiaceae
Fraxinus latifolia	Oregon ash	Oleaceae
Gnaphalium luteo-album	Cudweed	Asteraceae
Helenium puberulum	Sneezeweed	Asteraceae
Helianthus annuus	Sunflower	Asteraceae
Holcus lanatus	Common velvet grass	Poaceae
Hordeum murinum		Poaceae
Juglans californica var. hindsii	Black walnut	Juglandaceae
Juncus bufonius	Toad Rush	Juncaceae
Kickxia elatine	Fluellin	Scrophulariaceae
Lactuca serriola	Prickly lettuce	Asteraceae
Lepidium latifolium	Perennial Pepperweed	Brassicaceae
Leymus triticoides	Creeping wildrye	Poaceae
Lolium multiflorum	Ryegrass	Poaceae
Lotus corniculatus	Birdsfoot treefoil	Fabaceae
Ludwigia peploides	Water primrose	Onagraceae
Malvella leprosa		Malvaceae
Melilotus indica	Sourclover	Fabaceae
Modiola caroliniana		Malvaceae
Nicotiana quadrivalvis	Tobacco	Solanaceae
Oxalis pes-caprae	Bermuda buttercup	Oxalidaceae
Paspalum dilatatum	Dallis Grass	Poaceae
Phalaris arundinacea	Reed canarygrass	Poaceae
Phalaris paradoxa		Poaceae
Phoenix canariensis	Palm tree	Arecaceae
Phyla nodiflora var. nodiflora		Verbenaceae
Picris echioides	Bristly ox-tongue	Asteraceae

Scientific Name	Common Name	Family
Plantago lanceolata	English plantain	Plantaginaceae
Polygonum arenastrum	Common knotweed	Polygonaceae
Polygonum lapathifolium	Willow weed	Polygonaceae
Polypogon monspeliensis	Rabbitfoot grass	Poaceae
Populus fremontii ssp. fremontii	Fremont's cottonwood	Salicaceae
Prunus sp.		Rosaceae
Quercus lobata	Valley oak	Fagaceae
Rorippa palustris var. occidentalis	Yellowcress	Brassicaceae
Rosa californica	California wild rose	Rosaceae
Rumex crispus	Curly dock	Polygonaceae
Rumex obtusifolius	Bitter dock	Chenopodiaceae
Salix gooddingii	Gooddings wilow	Salicaceae
Salix lasiolepis	Arroyo willow	Salicaceae
Salsola tragus	Russian thistle	Chenopodiaceae
Scirpus acutus var. occidentalis	Tule	Cyperaceae
Senecio vulgaris		Asteraceae
Setaria pumila		Poaceae
Silybum marianum	Milk thistle	Asteraceae
Sorghum halepense	Johnson grass	Poaceae
Toxicodendron diversilobum	Poison oak	Anarcardiaceae
Urtica dioica ssp. holosericea	Hoary nettle	Urticaceae
Verbascum blattaria	Moth mullein	Scrophulariaceae
Verbascum thapsus	Wooly mullein	Scrophulariaceae
Verbena bonariensis	Vervain	Verbenaceae
Veronica peregrine ssp. xalapensis	Purslane speedwell	Scrophulariaceae
Vulpia bromoides		Poaceae
Xanthium strumarium	Cocklebur	Asteraceae