THE AVENUES SPECIFIC PLAN

CITY OF TRACY, SAN JOAQUIN COUNTY, CALIFORNIA

Habitat Assessment and San Joaquin County Multi-Species Habitat Conservation and Open Space Plan Consistency Analysis

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Prepared For:

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February 2017
JN: 156918

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The undersigned certify that the statements furnished in this report and exhibits present data and information required for this biological evaluation, and the facts, statements, and information presented is a complete and accurate account of the findings and conclusions to the best of our knowledge and beliefs.

Travis J. McGill
Biologist
Natural Resources

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Natural Resources

February 2017
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Executive Summary

This report contains the findings of Michael Baker International's Habitat Assessment and San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP) Consistency Analysis for the Avenues Specific Plan (ASP), hereinafter referred to as project site or site, located in the City of Tracy, San Joaquin County, California. The ASP is located within the Central/Southwest Transition Zone of the SJMSCP.

Agricultural land uses and developments (i.e., residential and religious) on and surrounding the proposed project site have removed naturally occurring habitats, reducing ability of the project site to support special-status plant and wildlife species. No undisturbed, natural plant communities were observed within the boundaries of the project site during the habitat assessment. One (1) vegetation community was observed on-site: agricultural land. In addition, two (2) agricultural detention basins were observed on-site as well as a land cover type that would be classified as disturbed.

Based on habitat requirements for specific special-status plant species and the availability and quality of habitats needed by each species, no special-status plant species are expected to occur and are presumed absent from the project site. As a result of ongoing agricultural activities, it was determined that the heavily disturbed project site does not provide suitable habitat for any of the special-status plant species known to occur in the generally vicinity of the project site. Although the site investigation was conducted outside of the spring blooming season, no special-status plant species were observed on-site.

No special-status wildlife species were observed on-site during the habitat assessment. Based on habitat requirements for specific special-status wildlife species and the availability and quality of habitats needed by each species, it was determined that the project site has a high potential to provide suitable habitat for California horned lark (*Eremophila alpestris actia*), and a low potential to provide suitable habitat for burrowing owl (*Athene cunicularia*), Swainson's hawk (*Buteo swainsoni*), prairie falcon (*Falco mexicanus*), San Joaquin coachwhip (*Masticophis flagellum ruddocki*), and San Joaquin kit fox (*Vulpes macrotis mutica*).

To mitigate for the potential adverse impacts on special-status species, and provide for the incidental take of state and/or federally listed species or SJMSCP Covered Species within the project site, the applicant will comply with all relevant Incidental Take Minimization Measures defined in Section 5.2 of the SJMSCP (refer to Appendix D) pertinent to the proposed project. Part of the Incidental Take Minimization Measures would include conducting pre-construction surveys and relocation measures as noted in Section 5.2 of this report.

No jurisdictional drainage and/or wetland features were observed within the proposed project footprint. Therefore, development of the proposed project will not result in impacts to United States Army Corps of Engineers (Corps), Regional Water Quality Control Board (Regional Board), or the California

Department of Fish and Wildlife (CDFW) jurisdictional areas and regulatory approvals will not be required. It should be noted that two agricultural detention basins observed within the ASP project site that only contain water during irrigation events for the agricultural fields. These detention basins were constructed in the uplands for agricultural activities, and do not possess a surface hydrologic connection to jurisdictional water features; therefore, the detention basins would do not qualify and "waters of the United States" or "waters of the State."

Pursuant to the Migratory Bird Treaty Act and California Fish and Game Code, future construction activities and/or the removal of any trees, shrubs, or any other potential nesting habitat should be conducted outside the avian nesting season. The nesting season generally extends from February 1 through August 31, beginning as early as January 1 for raptor species, but can vary slightly from year to year based upon seasonal weather conditions. If construction or vegetation clearing activities occur during the avian nesting season a pre-construction nesting bird clearance survey will be required.

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EXHIBITS

APPENDIX

LIST OF ACRONYMS

ASP	Avenues Specific Plan
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
Corps	United States Army Corp of Engineers
CWA	Clean Water Act
° F	Degrees Fahrenheit
FR	Federal Register
GIS	Geographic Information System
MBTA	Migratory Bird Treaty Act
Michael Baker	Michael Baker International
NRCS	Natural Resources Conservation Service
Regional Board	Regional Water Quality Control Board
SJMSCP	San Joaquin County Multi-Species Habitat Conservation and Open Space Plan
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

Section 1 Introduction

This report contains the findings of Michael Baker International's (Michael Baker) Habitat Assessment and San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP) Consistency Analysis for the Avenues Specific Plan (ASP) located in the City of Tracy, San Joaquin County, California (project site or site). The habitat assessment was conducted by Michael Baker biologists Thomas C. Millington and Travis J. McGill on December 6, 2016 to verify existing site conditions and assess the probability of occurrence for special-status[1] plant and wildlife that could pose a constraint to development of the proposed project. Special attention was given to the suitability of the on-site habitat to support burrowing owl (*Athene cunicularia*), San Joaquin kit fox (*Vulpes macrotis mutica*), Swainson's hawk (*Buteo swainsoni*), and several other special-status plant and wildlife species identified by the SJMSCP, California Department of Fish and Wildlife's (CDFW) California Natural Diversity Database (CNDDB), and other electronic databases as potentially occurring in the vicinity of the project site.

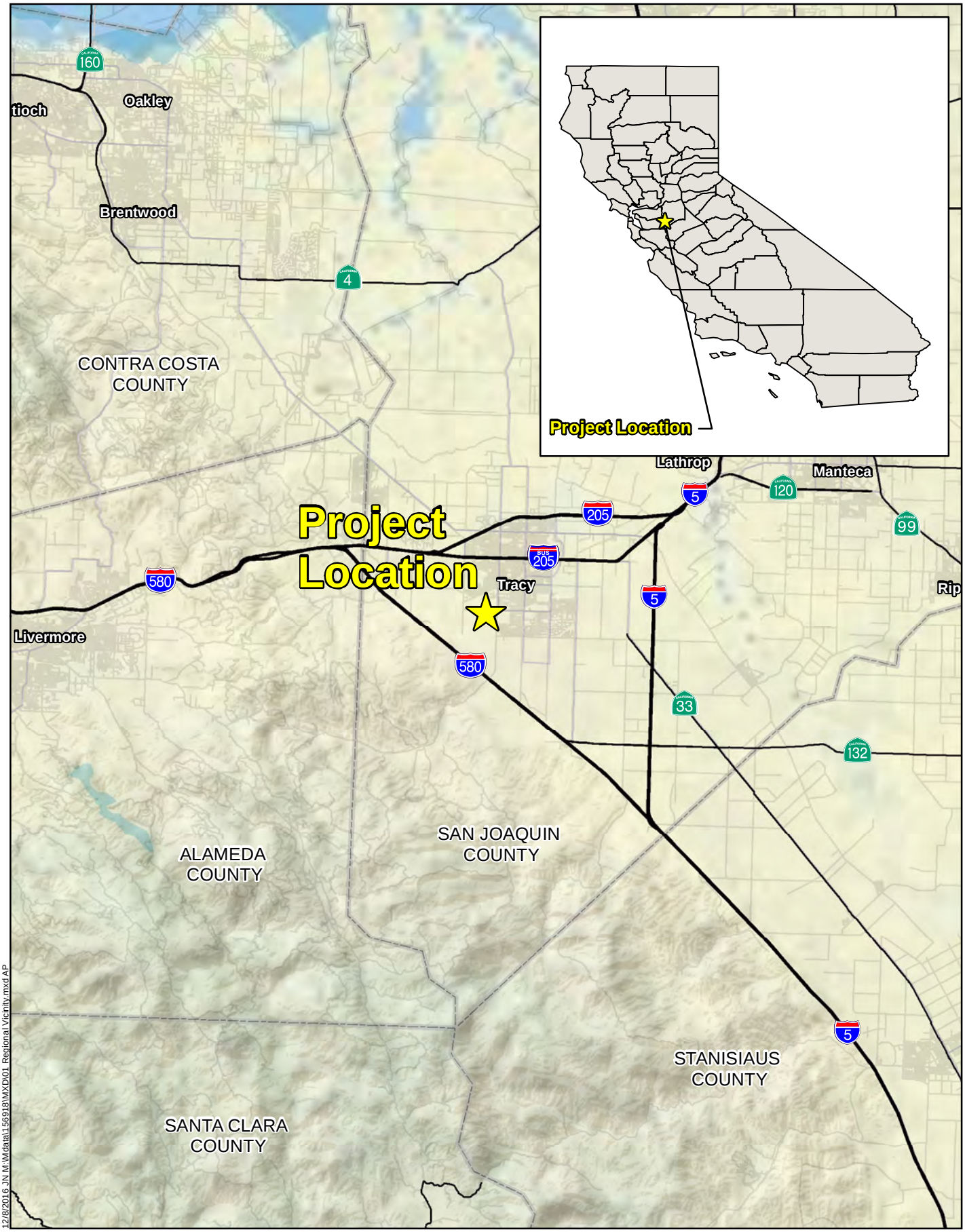
1.1 PROJECT LOCATION

The project site is generally located northeast of Interstate 580 (I-580), south of Interstate 205 (I-205), and west of Interstate 5 (I-5) in the of City of Tracy, San Joaquin County, California (Exhibit 1, *Regional Vicinity*). The project site is depicted on the Tracy quadrangle of the United States Geological Survey's (USGS) 7.5-minute topographic map series within Section 6 of Townships 2 and 3 south, Range 5 east (Exhibit 2, *Site Vicinity*). Specifically, the project site is located east of Lammers Road, south of Valpico Road, and west of Corral Hollow Road (Exhibit 3, *Project Site*).

1.2 PROJECT DESCRIPTION

The ASP will develop approximately 95.8 acres of land into a mix of residential and recreational land uses. The plan will accommodate a maximum of 480 residential units (minimum of 380 units) not including secondary residential units and, consistent with City requirements, approximately 4 acres per 1,000 people of parks. The plan contains a pedestrian friendly neighborhood, linked by a comprehensive system of local streets, and pedestrian and bicycle paths. Residential areas within the ASP include a mix of housing types.

[1] As used in this report, "special-status" refers to plant and wildlife species that are federally, State, and SJMSCP listed, proposed, or candidates; plant species that have been designated with a California Native Plant Society Rare Plant Rank; wildlife species that are designated by the California Department of Fish and Wildlife as fully protected, species of special concern, or watch list species; and specially protected natural vegetation communities as designated by the CDFW.



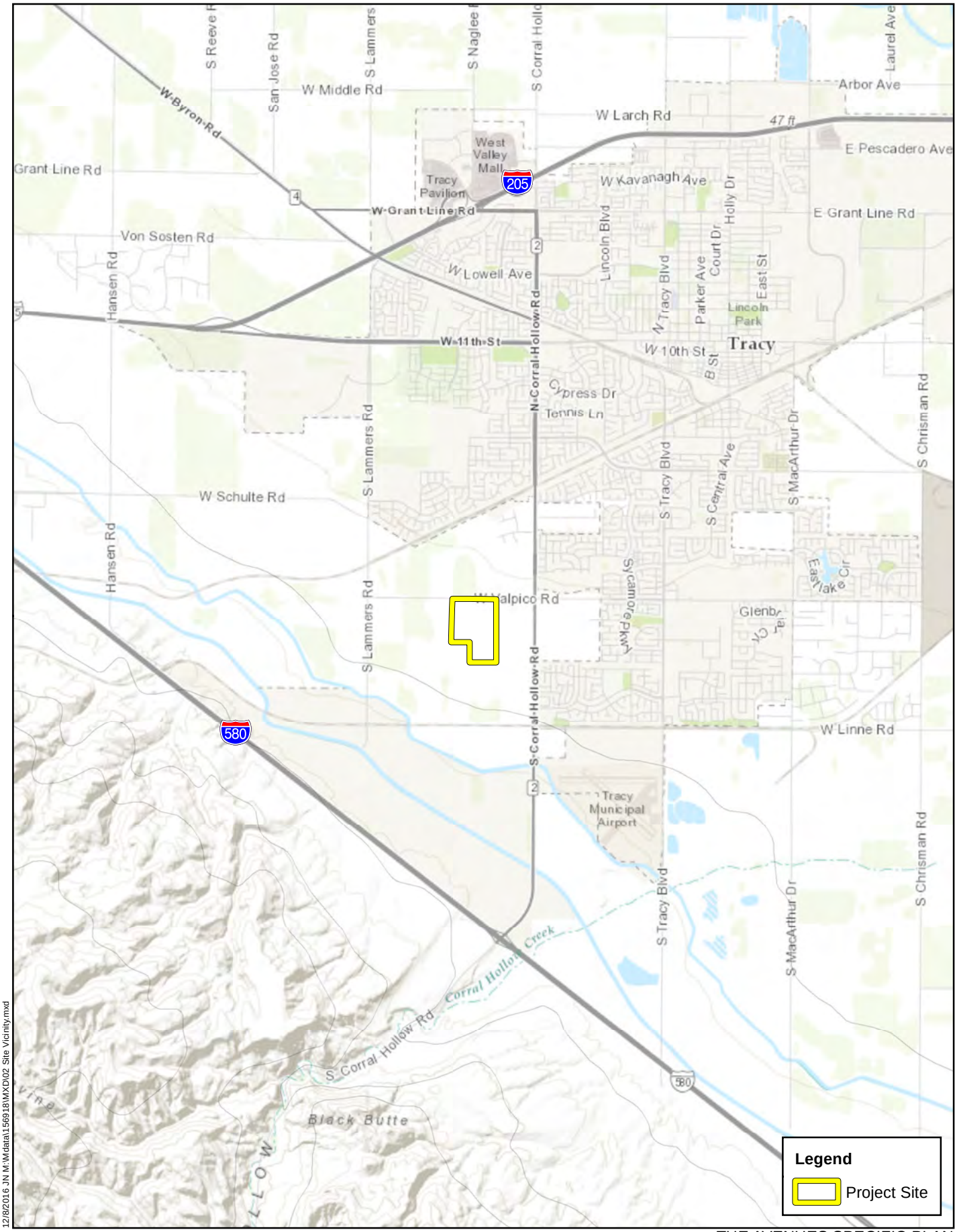
12/8/2016 JN M:\Mdata\156918\MXD\01 Regional Vicinity.mxd AP

Source: ESRI Relief Map, National Highway Planning Network

THE AVENUES SPECIFIC PLAN
HABITAT ASSESSMENT AND SJMSCP CONSISTENCY ANALYSIS

Regional Vicinity

Exhibit 1



12/8/2016 JN M:\Mdata\156918\MXD\02 Site Vicinity.mxd

THE AVENUES SPECIFIC PLAN
HABITAT ASSESSMENT AND SJMSCP CONSISTENCY ANALYSIS

Site Vicinity

Michael Baker INTERNATIONAL

0 0.5 1 Miles

Source: San Bernardino County, ESRI USA Topographic Basemap

Exhibit 2

12/7/2016 JN M:\Mdata\156918\MXD\03 Project Site.mxd

Michael Baker INTERNATIONAL

0 125 250 500
Feet

Source: NearMaps 2016

THE AVENUES SPECIFIC PLAN
HABITAT ASSESSMENT AND SJMSCP CONSISTENCY ANALYSIS

Project Site

Exhibit 3

Section 2 Methodology

Michael Baker conducted literature review and records search to determine which special-status biological resources have the potential to occur on or within the general vicinity of the project site. In addition, a general habitat assessment and field investigation of the project site was conducted that provided information of the existing conditions and the potential for the project site to support special-status biological resources.

2.1 SJMSCP CONSISTENCY ANALYSIS

The SJMSCP was adopted in 2001 and is intended to provide a strategy for conserving agricultural land and wildlife habitat, while accommodating a growing population and property rights of individual landowners. The SJMSCP has established an assessment process for conversion of land to non-open space uses when such conversion might affect the plant and wildlife species covered by the SJMSCP. The SJMSCP addresses ninety-seven (97) special-status plant, fish, and wildlife species in fifty-two (52) vegetative communities. The ultimate goal of the SJMSCP is to provide 100,241 acres of habitat preserves over the projected 50-year lifetime of the SJMSCP. Most of the land for these preserves would be designated as conservation easements over existing agricultural lands in the areas covered by the SJMSCP.

The ASP area is located within the Central/Southwest Transition Zone of the SJMSCP. The habitat types within the Central/Southwest Transition Zone are generally the same as those found within the Central Zone (the Row and Field Crop/Riparian Preserve Types as described in Section 5.3.3.3(D1). However, occurrence records for the San Joaquin kit fox indicate that this SJMSCP Covered Species occasionally wanders outside of the Southwest Zone and into the area along the common boundary between the Southwest Zone and the Central Zone. To recognize this transition, the Central/Southwest Transition Zone was created.

When Conversions of Open Space occur within the Central/Southwest Transition Zone, they are regarded as impacting both the suite of species associated with habitats in the Southwest Zone Grassland Preserve Type and those habitat types associated with the Row and Field Crop/Riparian Preserves in the Central Zone. To offset impacts occurring with the Central/Southwest Transition Zone, Preserves may be established in either the Central Zone's Row and Field Crop/Riparian Preserve system (which includes habitat within the Central/Southwest Transition Zone) or within the Southwest Zone's Grassland Preserve system as described in Section 5.3.3.3(B1).

The SJMSCP is a habitat-based approach to mitigation for the loss of habitat for covered species. The habitat types within the ASP site are primarily composed of Row and Field Crops which are covered in the Central Zone. Most of the Covered Species within the Central Zone are mobile, widely-distributed bird species that are not restricted solely to the Central Zone. Preserves designed for the loss

of Row and Field Crop/Riparian habitat within the Central Zone will be designed and managed primarily for Swainson's hawk and other avian species associated with agricultural landscapes.

2.2 LITERATURE REVIEW

Prior to conducting the field investigation, a literature review and records search was conducted for special-status biological resources potentially occurring on or within the vicinity of the project site. Previously recorded occurrences of special-status plant and wildlife species and their proximity to the project site were determined through a query of the CDFW QuickView Tool in the Biogeographic Information and Observation System (BIOS), CNDDB Rarefind 5, the California Native Plant Society (CNPS) Electronic Inventory of Rare and Endangered Vascular Plants of California, Calflora Database, compendia of special-status species published by CDFW, and the U.S. Fish and Wildlife Service (USFWS) species listings.

All available reports, survey results, and literature detailing the biological resources previously observed on or within the vicinity of the project site were reviewed to understand existing site conditions and note the extent of any disturbances that have occurred on the project site that would otherwise limit the distribution of special-status biological resources. Standard field guides and texts were reviewed for specific habitat requirements of special-status and non-special-status biological resources, as well as the following resources:

- Ellis Specific Plan: Habitat Assessment Update (RBF Consulting, April 2012);
- Google Earth Pro historic aerial imagery (1993 – 2016);
- United States Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS), Soil Survey;
- USFWS Critical Habitat designations for Threatened and Endangered Species; and
- USFWS Endangered Species Profile and Primary Constituent Elements (PCEs) for San Joaquin kit fox.

The literature review provided a baseline from which to inventory the biological resources potentially occurring within the project site. Additional recorded occurrences of those species found on or near the project site were derived from database queries. The CNDDB database was used, in conjunction with ArcGIS software, to locate the occurrence records and determine the distance from the project site.

2.3 HABITAT ASSESSMENT

Michael Baker biologists Thomas C. Millington and Travis J. McGill inventoried and evaluated the condition of the habitat within the project site on December 6, 2016. Plant communities identified on aerial photographs during the literature review were verified by walking meandering transects through the plant communities and along boundaries between plant communities. In addition, aerial

photography was reviewed prior to locate and inspect any potential natural drainage features and water bodies that may or fall under the jurisdiction of the Corps, Regional Board, or CDFW, as well as natural corridors and linkages that may support the movement of wildlife through the area. These areas identified on aerial photography were then walked during the field investigation.

Special attention was paid to any special-status habitats and/or undeveloped, natural areas, which have a higher potential to support special-status plant and wildlife species. Areas providing suitable habitat for burrowing owl were closely surveyed for signs of presence during the habitat assessment. Methods to detect the presence of burrowing owl included direct observation, aural detection, and signs of presence including pellets, white wash, feathers, or prey remains.

All plant and wildlife species observed, as well as dominant plant species within each plant community, were recorded. Plant species observed during the field investigation were identified by visual characteristics and morphology in the field. Unusual and less familiar plant species were photographed during the survey and identified in the laboratory using taxonomical guides. Wildlife detections were made through observation of scat, trails, tracks, burrows, nests, and/or visual and aural observation. In addition, site characteristics such as soil condition, topography, hydrology, anthropogenic disturbances, indicator species, condition of on-site plant communities, and presence of potential jurisdictional drainage and/or wetland features were noted.

2.4 SOIL SERIES ASSESSMENT

On-site and adjoining soils were researched prior to the field visit using the USDA NRCS Soil Survey for San Joaquin County, California. In addition, a review of the local geological conditions and historical aerial photographs was conducted to assess the ecological changes the project site has undergone.

2.5 PLANT COMMUNITIES

Plant communities were mapped using 7.5-minute USGS topographic base maps and aerial photography. The plant communities were classified in accordance with accordance with those described in the SJMSCP, delineated on an aerial photograph, and then digitized into GIS Arcview. The Arcview application was used to compute the area of each plant community in acres.

2.6 PLANTS

Common plant species observed during the field survey were identified by visual characteristics and morphology in the field, and recorded in a field notebook. Unusual and less familiar plants were photographed in the field and identified in the laboratory using taxonomic guides. Taxonomic nomenclature used in this study follows the 2012 Jepson Manual. In this report, scientific names are provided immediately following common names of plant species (first reference only).

2.7 WILDLIFE

Wildlife species detected during field surveys by sight, calls, tracks, scat, or other sign were recorded during surveys in a field notebook. Field guides were used to assist with identification of species during surveys included The Sibley Field Guide to the Birds of Western North America (Sibley 2003) and The Sibley Guide to Birds (Sibley 2014) for birds, A Field Guide to Western Reptiles and Amphibians (Stebbins 2003) for herpetofauna, and A Field Guide to Mammals of North America (Reid 2006). Although common names of wildlife species are fairly well standardized, scientific names are provided immediately following common names in this report (first reference only).

2.8 STATE AND FEDERAL JURISDICTIONAL AREAS

Aerial photography was reviewed prior to conducting the habitat assessment. The aerials were used to locate and inspect any potential natural drainage features, ponded areas, or water bodies that may fall under the jurisdiction of the Corps, Regional Board, or CDFW. In general, surface drainage features indicated as blue-line streams on USGS maps that are observed or expected to exhibit evidence of flow are considered potential riparian/riverine habitat and are also subject to state and federal regulatory authorities.

Section 3 Existing Conditions

3.1 LOCAL CLIMATE

San Joaquin County features a somewhat cooler version of a Mediterranean climate, or semi-arid climate, with warm, sunny, dry summers and cool, rainy, mild winters. Relative to other areas in Northern California, winters are colder with frost and with chilly to cold morning temperatures common. Climatological data for the City of Tracy obtained from nearby weather stations indicates the annual precipitation averages 0.88 inches per year. Almost all of the precipitation in the form of rain occurs in the months between November and March, with hardly any occurring between the months of July and August. The wettest month is January, with a monthly average total precipitation of 1.97 inches, and the driest month is July, with a monthly average total precipitation of 0.04 inches. The average maximum and minimum temperatures for the City of Tracy are 74.8 and 45.2 degrees Fahrenheit (° F) respectively with July (monthly average high 93° F) being the hottest month and December (monthly average low 34° F) being the coldest. The temperature during the site visit was in the mid-50s (degrees Fahrenheit).

3.2 TOPOGRAPHY AND SOILS

On-site surface elevation ranges from approximately 112 to 140 feet above mean sea level (msl) and generally slopes to the south. Based on the USDA NRCS Web Soil Survey, the project site is underlain by the following soil units (Exhibit 4, *Soils*):

- **Capay clay, 0 to 2 percent (118):** The Capay clay (0 to 2 percent slopes) soil series consists of moderately well drained soils formed from alluvium derived from mixed rock sources. It is found on basin floors. Elevations are recorded at 30 to 200 feet above msl.
- **Zacharias clay loam, 0 to 2 percent slopes (281):** Zacharias clay loam (0 to 2 percent slopes) soils consists of well drained soils formed from alluvium derived from mixed rock sources. It is found within alluvial fans and stream terraces. Elevations are recorded at 50 to 300 feet above msl.
- **Zacharias gravelly clay loam, 0 to 2 percent slopes (282):** Zacharias gravelly clay loam (0 to 2 percent slopes) soils consists of well drained soils formed from alluvium derived from mixed rock sources. It is found within alluvial fans and stream terraces. Elevations are recorded at 50 to 300 feet above msl.

3.3 SURROUNDING LAND USES

Land uses in the vicinity of the ASP mainly consist of agricultural and residential land uses. Residential developments are located to the south of the project site, and agricultural lands are located to the north, east and west of the project site. The Tracy Municipal Airport is located approximately 1 mile southeast

of the project site. The Edgewood residential development is located east of the project site, across Corral Hollow Road. Sparse rural residential development such as small-acre ranches and farmsteads along with the appurtenant structures (e.g., barns, storage sheds etc.) are located to the west of the project site. The Delta Mendota Canal, which supplies water to the Central Valley, is located approximately 0.67 miles southwest of the project site. The Church of Jesus Christ of Latter-Day Saints and Holy Family Center Catholic Church are located to the east of the project site.

12/7/2016 JN M:\Mdata\156918\MXD\04 Soils.mxd

Michael Baker INTERNATIONAL

0 125 250 500 Feet

Source: NearMaps 2016

THE AVENUES SPECIFIC PLAN
HABITAT ASSESSMENT AND SJMSCP CONSISTENCY ANALYSIS

Soils

Exhibit 4

Section 4 Discussion

4.1 SITE CONDITIONS

The project site consists of active agricultural land supporting row crops. On-site and surrounding land uses have heavily disturbed, if not completely eliminated, naturally occurring habitats from the proposed project site, reducing the suitability of the habitat to support special-status plant and wildlife species. Channelization of surrounding waterways for flood control and agricultural purposes has also changed the hydrology of the area, further altering the natural habitats that once occurred in the area. The habitats within the ASP site have been converted to agricultural land and are no longer connected to naturally occurring habitats, preventing natural plant communities from re-establishing.

4.2 VEGETATION

The project site consists of active agricultural land supporting row crops (Exhibit 5, *Vegetation*). In addition, the project site contains two (2) detention basins and land cover types that would be classified as disturbed. These areas are described in further detail below.

4.2.1 ACTIVE AGRICULTURE

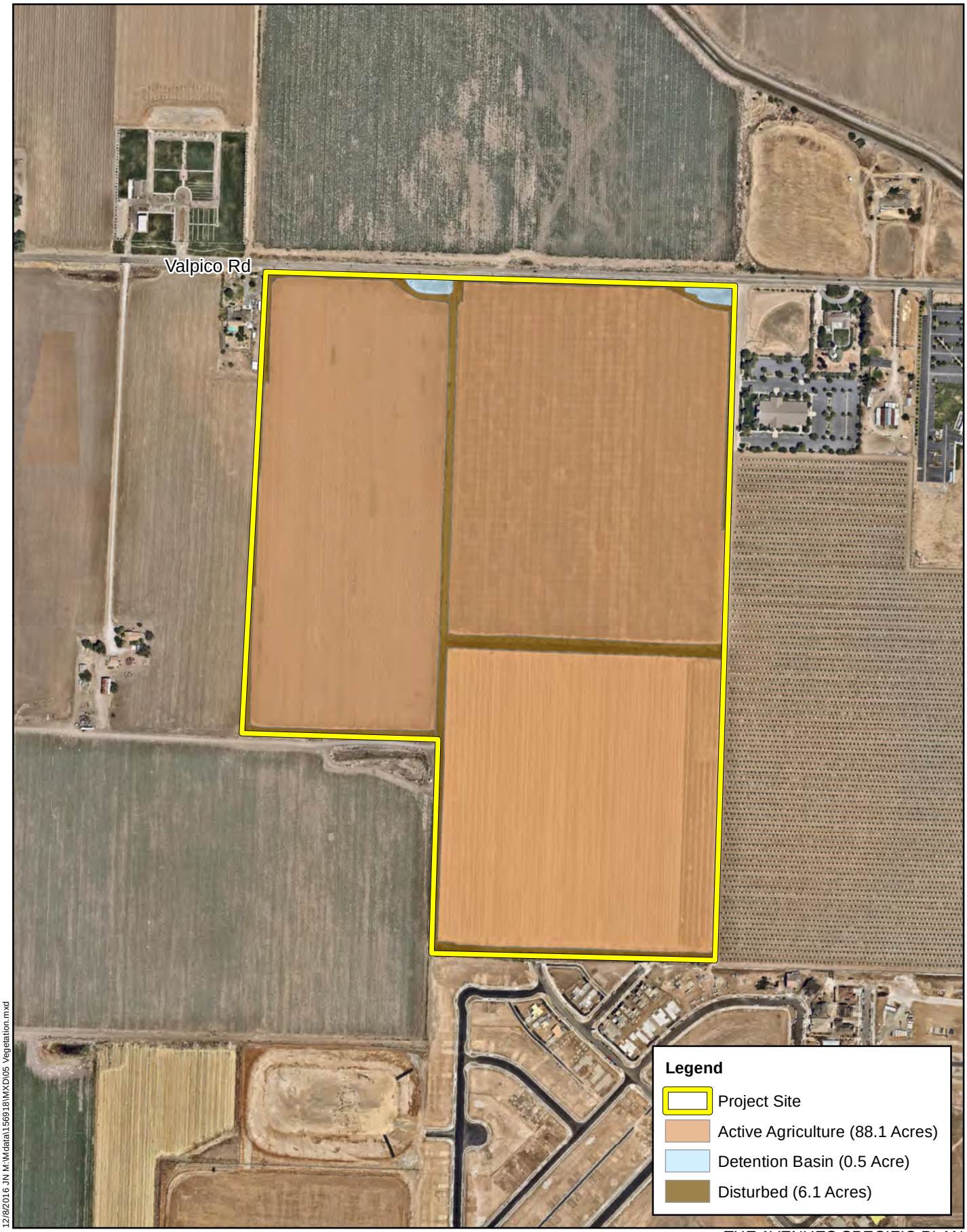
The ASP site is mainly composed of three (3) active agricultural fields. At the time of the site investigation, the two (2) fields located immediately south of Valpico Road supported cotton (*Gossypium* sp.) and lima bean (*Phaseolus lunatus*) crops, while the southernmost field support a crop of winter wheat (*Triticum* sp.). Prior to the site investigation, all of the crops had been harvested.

4.2.2 DISTURBED

Disturbed areas within the project site have been exposed to routine and continual anthropogenic disturbances that have resulted in the growth of early successional and non-native weedy plant species and no longer constitute a plant community. Disturbed areas on-site are characterized as dirt access roads between the agricultural fields. Plant species observed within on-site disturbed areas include Russian thistle (*Salsola tragus*), wild oat (*Avena fatua*), red stemmed filaree (*Erodium cicutarium*), cheeseweed (*Malva parviflora*), common sunflower (*Helianthus annuus*), telegraph weed (*Heterotheca grandiflora*), short-podded mustard (*Hirschfeldia incana*), and London rocket (*Sisymbrium irio*).

4.2.3 DETENTION BASINS

Two detention basins associated with the agricultural fields are located within the northeastern corner of the project site and in the middle of the northern boundary of the project site, just south of Valpico Road. The two basins were dry during the habitat assessment and were primarily composed of non-native grasses and ruderal/weedy plant species. These detention basins were constructed in the uplands for agricultural activities, to function as irrigation holding ponds or as irrigation water runoff basins.



12/8/2016 JN M:\Mdata\156918\MXD\05 Vegetation.mxd

Michael Baker INTERNATIONAL

0 125 250 500 Feet

Source: NearMaps 2016

THE AVENUES SPECIFIC PLAN
HABITAT ASSESSMENT AND SJMSCP CONSISTENCY ANALYSIS

Vegetation

Exhibit 5

4.3 WILDLIFE

Plant communities provide foraging habitat, nesting/denning sites, and shelter from adverse weather or predation. This section provides a discussion of those wildlife species that were observed or are expected to occur within the project site. The discussion is to be used a general reference and is limited by the season, time of day, and weather conditions in which the field survey was conducted. Wildlife detections were based on calls, songs, scat, tracks, burrows, and direct observation.

4.3.1 FISH

No fish or hydrogeomorphic features (e.g., creeks, ponds, lakes, reservoirs) with frequent sources of water that would support populations of fish were observed on or within the vicinity of the project site. The basins located within the northern portion of the project site were dry during the habitat assessment and most likely does not support standing water for long periods of time that would be sufficient to support populations of fish. Therefore, no fish are expected to occur and are presumed absent from the project site.

4.3.2 AMPHIBIANS

No amphibians or hydrogeomorphic features (e.g., creeks, ponds, lakes, reservoirs) with frequent sources of water that would support populations of amphibians were observed on the project site. The basins located within the northern portion of the project site were dry during the habitat assessment and likely do not support standing water for long periods of time that would be sufficient to support populations of amphibians. Therefore, no amphibians are expected to occur and are presumed absent from the project site.

4.3.3 REPTILES

The agricultural fields have the potential to support a limited number of reptilian species. However, no reptilian species were detected during the habitat assessment. Reptilian species that are expected to occur on-site include western side-blotched lizard (*Uta stansburiana elegans*), western fence lizard (*Sceloporus occidentalis*), and gopher snake (*Pituophis catenifer*).

4.3.4 BIRDS

The project site provides suitable foraging and cover habitat for a variety of resident and migrant bird species. Common bird species detected during the field survey included house finch (*Haemorhous mexicanus*), mourning dove (*Zenaida macroura*), sage sparrow (*Artemisiospiza nevadensis*), red-tailed hawk (*Buteo jamaicensis*), turkey vulture (*Cathartes aura*), American kestrel (*Falco sparverius*), and white-crowned sparrow (*Zonotrichia leucophrys*).

4.3.5 MAMMALS

The project site and surrounding habitat has the potential to support a variety of mammalian species. However, most mammal species are nocturnal and are difficult to observe during a diurnal field survey. No mammalian species were observed/detected during the field survey. Common mammalian species that are expected to occur on-site include Audubon's cottontail (*Sylvilagus audubonii*), raccoon (*Procyon lotor*), Botta's pocket gopher (*Thomomys bottae*), opossum (*Didelphis virginiana*), and striped skunk (*Mephitis mephitis*).

4.4 NESTING BIRDS

No active nests or birds displaying nesting behavior were observed during the field survey. The project site and surrounding agricultural fields provide suitable foraging and minimal cover habitat for year-round and seasonal avian residents, as well as migrating songbirds that could occur in the area. The project site provides limitned nesting opportunites for birds that nest on the open ground, such as killdeer and western meadowlark.

4.5 MIGRATORY CORRIDORS AND LINKAGES

Habitat linkages provide links between larger habitat areas that are separated by development. Wildlife corridors are similar to linkages, but provide specific opportunities for animals to disperse or migrate between areas. A corridor can be defined as a linear landscape feature of sufficient width to allow animal movement between two comparatively undisturbed habitat fragments. Adequate cover is essential for a corridor to function as a wildlife movement area. It is possible for a habitat corridor to be adequate for one species yet, inadequate for others. Wildlife corridors are significant features for dispersal, seasonal migration, breeding, and foraging. Additionally, open space can provide a buffer against both human disturbance and natural fluctuations in resources.

The project site is located within the Central/Southwest Transition Zone of the SJMSCP. This zone was created to reflect that San Joaquin kit foxes might occasionally roam outside of the Southwest Zone and into the area along the common boundary between the Southwest Zone and the Central Zone. Although heavily disturbed, the project site has the potential to provide minimal wildlife movement opportunities through the adjacent agricultural fields to the north and south. Implementation of the project is not expected to result in temporary and/or permanent impacts to potential wildlife movement opportunities.

4.6 STATE AND FEDERAL JURISDICTIONAL AREAS

There are three key agencies that regulate activities within inland streams, wetlands, and riparian areas in California. The Corps Regulatory Branch regulates discharge of dredge or fill materials into "waters of the United States" pursuant to Section 404 of the Federal CWA and Section 10 of the Rivers and Harbors Act. Of the State agencies, the Regional Board regulates discharges to surface waters pursuant

to Section 401 of the CWA and the California Porter-Cologne Water Quality Control Act and the CDFW regulates alterations to streambed and associated plant communities under Fish and Wildlife Code Sections 1600 *et seq.*

No jurisdictional drainage and/or wetland features were observed within or adjacent to the project site. Therefore, development of the project site will not result in impacts to Corps, Regional Board, or CDFW jurisdictional areas and regulatory approvals will not be required. It should be noted that two agricultural detention basins observed within the ASP project site that only contain water during irrigation events for the agricultural fields. These detention basins were constructed in the uplands for agricultural activities, and do not possess a surface hydrologic connection to jurisdictional water features; therefore, the detention basins would do not qualify and "waters of the United States" or "waters of the State."

4.7 SPECIAL-STATUS BIOLOGICAL RESOURCES

The CNDDB Rarefind 5, CNDDB Quickview Tool in BIOS, and the CNPS Electronic Inventory of Rare and Endangered Vascular Plants of California was queried for reported locations of special-status plant and wildlife species as well as special-status natural plant communities in the Tracy USGS 7.5-minute quadrangle. Only one quadrangle was queried since the project site is surrounding by existing development and agricultural land uses and is isolated from native, undisturbed habitats. The habitat assessment evaluated the conditions of the habitat(s) within the boundaries of the project site to determine if the existing plant communities, at the time of the survey, have the potential to provide suitable habitat(s) for special-status plant and wildlife species.

The literature search identified seven (7) special-status plant species and twenty-four (24) special-status wildlife species as having the potential to occur within the Tracy USGS 7.5-minute quadrangle. No special-status plant communities were identified as occurring within the Tracy USGS 7.5-minute quadrangle. Special-status plant and wildlife species were evaluated for their potential to occur within the project site based on habitat requirements, availability and quality of suitable habitat, and known distributions. Species determined to have the potential to occur within the general vicinity of the project site are presented in Appendix C, *Potentially Occurring Special-Status Biological Resources*. Refer to Appendix C for a detailed analysis regarding the potential occurrence of special-status plant and wildlife species within the project site.

4.7.1 SPECIAL-STATUS PLANTS

Seven (7) special-status plant species have been recorded in the CNDDB and CNPS in the Tracy USGS 7.5-minute quadrangle (Appendix C). No special-status plant species were observed on-site during the habitat assessment. Based on habitat requirements for specific special-status plant species and the availability and quality of habitats needed by each species, it was determined that the project site does not provide suitable habitat for special-status plant species identified in the CNDDB or CNPS. The majority of the project site is composed of active agricultural land uses that have removed the natural

plant communities that once occurred within the boundaries of the project site. As a result, all special-status plant species are not expected to occur and are presumed to be absent from the project site.

4.7.2 SPECIAL-STATUS WILDLIFE

Twenty-four (24) special-status wildlife species have been reported in the Tracy USGS 7.5-minute quadrangle (Appendix C). No special-status wildlife species were observed on-site during the habitat assessment. Based on habitat requirements for specific special-status wildlife species and the availability and quality of habitats needed by each species, it was determined that the project site has a high potential to support California horned lark (*Eremophila alpestris actia*), and a low potential to support burrowing owl, Swainson's hawk (*Buteo swainsoni*), prairie falcon (*Falco mexicanus*), San Joaquin coachwhip (*Masticophis flagellum ruddocki*), and San Joaquin kit fox. California horned lark, prairie falcon, San Joaquin coachwhip, and San Joaquin kit fox are all fully covered under the SJMSCP and require no further analysis. All other special-status wildlife species are presumed absent from the project site based on habitat requirements for specific special-status wildlife species and the availability and quality of habitats needed by each species. The potential occurrences of California horned lark, burrowing owl, Swainson's hawk, prairie falcon, San Joaquin coachwhip, and San Joaquin kit fox within the project site is described in further below.

California Horned Lark

The California horned lark is on the CDFW watch list of sensitive species. The horned lark is a common to abundant resident in a variety of open habitats, usually where trees and large shrubs are absent. They breed in level or gently sloping shortgrass prairie, montane meadows, "bald" hills, open coastal plains, fallow grain fields, and alkali flats. In non-agricultural lands, this species typically inhabits areas of short vegetation or bare ground, including shortgrass prairie, deserts, brushy flats, and alpine habitat. In California, the horned larks breed primarily in open fields, (short) grasslands, and rangelands. Grasses, shrubs, forbs, rocks, litter, clods of soil, and other surface irregularities provide cover.

The California horned lark was not observed on the project site during the 2016 habitat assessment. Based on habitat requirements, it was determined that the project site has a high potential to support this species. The agricultural fields on the project site have the potential to provide suitable nesting and foraging opportunities for this species. It is recommended that a pre-construction clearance survey be conducted prior to any ground disturbance or vegetation removal activities to ensure no California horned lark are nesting on-site. With implementation of a pre-construction nesting bird clearance survey, no impacts to California horned lark will occur.

Burrowing Owl

The burrowing owl is currently listed as a California Species of Special Concern. It is a grassland specialist distributed throughout western North America where it occupies open areas with short vegetation and bare ground within shrub, desert, and grassland environments. Burrowing owls use a

wide variety of arid and semi-arid environments with well-drained, level to gently-sloping areas characterized by sparse vegetation and bare ground (Haug and Didiuk 1993; Dechant et al. 1999). Burrowing owls are dependent upon the presence of burrowing mammals (such as ground squirrels) whose burrows are used for roosting and nesting (Haug and Didiuk 1993). The presence or absence of colonial mammal burrows is often a major factor that limits the presence or absence of burrowing owls. Where mammal burrows are scarce, burrowing owls have been found occupying man-made cavities, such as buried and non-functioning drain pipes, stand-pipes, and dry culverts. Burrowing mammals may burrow beneath rocks and debris or large, heavy objects such as abandoned cars, concrete blocks, or concrete pads. They also require open vegetation allowing line-of-sight observation of the surrounding habitat to forage as well as watch for predators.

Burrowing owls have crepuscular (dawn and dusk) hunting habits, but are often observed perched in or near the burrow entrance during the day. They prey upon invertebrates and small vertebrates (Thomsen 1971) through the low vegetation which allows for foraging visibility. The nesting season typically occurs between February 1 and August 31. Burrowing owls in southern California are considered year round residents.

No burrowing owls or sign (i.e., pellets, feathers, castings, or white wash) were observed on-site during the habitat assessment. Further, no fossorial mammal burrows (>4 inches in diameter) were observed within the boundaries of the project site during the habitat assessment. Although agricultural activities on-site have likely precluded burrowing owls from inhabiting the project site, the project site provides line-of-site opportunities and suitable foraging habitat for burrowing owls. Therefore, it was determined that burrowing owl has a low potential to occur within the boundaries of the project site. However, no focused surveys are recommended since no suitable burrows or sign was observed on-site. It is recommended that a pre-construction clearance survey be conducted prior to any ground disturbance or vegetation removal activities to ensure that burrowing owl remain absent from the project site. With implementation of a pre-construction nesting bird clearance survey, no impacts to burrowing owl will occur.

Swainson's Hawk

Swainson's hawk is state listed as threatened. It is a medium sized buteo with relatively long, pointed wings. The most distinctive feature of adults is a dark head and breast band distinctive from the lighter colored belly, and the underside of the wing with the linings lighter than the dark gray flight feathers. The preferred habitat for Swainson's hawk is open desert, grassland, or cropland containing scattered, large trees or small groves. This species breeds in stands with few trees in juniper-sage flats, riparian areas, and in oak savannah in the Central Valley while foraging in adjacent grassland or suitable grain or alfalfa fields or livestock pastures.

Swainson's hawk was not observed during the 2016 habitat assessment. The plant communities within the project site provide suitable foraging habitat for the Swainson's hawk. However, there is no nesting habitat on the project site; this species prefers stands with few trees in juniper-sage flats, riparian areas,

and oak savannah habitats. Due to the suitable foraging habitat on-site, it was determined this species has a low potential to occur within the boundaries of the project site. It is recommended that a pre-construction clearance survey be conducted prior to any ground disturbance or vegetation removal activities to ensure no Swainson's hawk will not be impacted from implementation of the project. With implementation of a pre-construction nesting bird clearance survey, no impacts to Swainson's hawk will occur.

Prairie Falcon

The prairie falcon is on the CDFW watch list of sensitive species. It is about the size of a peregrine falcon (*Falco peregrinus*) with brown color above and pale with brown markings on the breast and belly. A prairie falcon's hunting behavior consists of pursuing small prey with rapid, maneuverable flight close to the ground. This species occupies open, treeless terrain including prairies, deserts, riverine escarpments, canyons, foothills, and mountains in relatively arid environments.

The prairie falcon was not observed during the 2016 habitat assessment. The plant communities within the project site provide suitable foraging habitat for this species. However, there is no nesting habitat within the boundaries of the project site; prairie falcons nest on a ledge, within a cavity, or crevice of a cliff face. It is recommended that a pre-construction clearance survey be conducted prior to any ground disturbance or vegetation removal activities to ensure no prairie falcon will not be impacted from implementation of the project. With implementation of a pre-construction nesting bird clearance survey, no impacts to prairie falcon will occur.

San Joaquin coachwhip

The San Joaquin coachwhip is a California Species of Concern. Adults of this species are 36 to 56 inches in length with smooth scales, a large head and eyes, a thin neck, and a long thin tail. The colors of this species range from tan, olive brown, or yellowish brown and lacks the very dark head and neckbands of other subspecies of *Coluber flagellum*. San Joaquin coachwhip occurs in open, dry, treeless areas including grassland and saltbush scrub. Can be found taking refuge in rodent burrows, under shaded vegetation, and under surface objects.

San Joaquin coachwhip was not observed on-site during the 2016 habitat assessment. The plant communities within the project site provide limited refuge habitat for this species; however, the on-site disturbances have likely precluded this species from occurring within the boundaries of the project site. Based on habitat requirements for this species, it was determined that the San Joaquin coachwhip has a low potential to occur within the boundaries of the project site, and implementation of the proposed project will not impact this species.

San Joaquin Kit Fox

The San Joaquin kit fox inhabits areas of suitable habitat on the San Joaquin Valley floor and in the surrounding foothills of the coastal ranges, Sierra Nevada, and Tehachapi Mountains, from Kern County north to Contra Costa, Alameda, and San Joaquin Counties on the west and near La Grange, Stanislaus County on the east side of the Valley. Kit foxes also occur westward into the interior coastal ranges in Monterey, San Benito, and Santa Clara Counties, in the Salinas River watershed, Monterey and San Luis Obispo Counties. In the United States, the San Joaquin kit fox was listed as an endangered species on March 11, 1967. In the State of California, this species is listed as threatened.

The San Joaquin kit fox is the smallest canid species in North America. The average male San Joaquin kit fox measures about 32 inches in length, 12 inches high at the shoulder, and weighs about 5 pounds. General physical characteristics of kit foxes include a small, slim body, relatively large ears set close together, narrow nose, and a long, bushy tail tapering slightly towards the tip. Most common described colorations of this species are buff, tan, grizzled, or yellowish-gray dorsal coats. However, the color and texture of the coats varies geographically and seasonally.

This species requires dens for shelter, protection, and reproduction. Open, level habitat with loose-textured soils supporting scattered shrubby vegetation with little human disturbances is preferred. Historically, this species would inhabit annual grassland and various scrub and subshrub communities. However, much of this habitat has been converted to agriculture and urban areas. The San Joaquin kit fox continue to utilize small remnants of native habitat interspersed with development provided there is minimal disturbance, dispersal corridors, and sufficient prey. Diet of kit foxes includes California ground squirrels, kangaroo rats, white-footed mice, pocket mice, black-tailed hares, desert cottontails, ground-nesting birds, and insects.

Per the CNDDB, the closest recorded occurrence of this species from the project site was in 1991. Tracks of this species were recovered from baited scent stations 0.2 miles southeast of the intersection of Valpico Road and Jefferson Road (CNDDB 1991). This species was not observed on-site during the 2016 habitat assessment. As previously stated, this species prefers open, level areas with loose-textured soils supporting scattered shrubby vegetation with little human disturbance. The project site mainly consists of active agricultural land that is subjected to human disturbance from agricultural operations. Further, the project site does not contain suitable den sites for this species. Therefore, it was determined that the San Joaquin kit fox has a low potential to occur within the boundaries of the project site, and implementation of the proposed project will not impact this species.

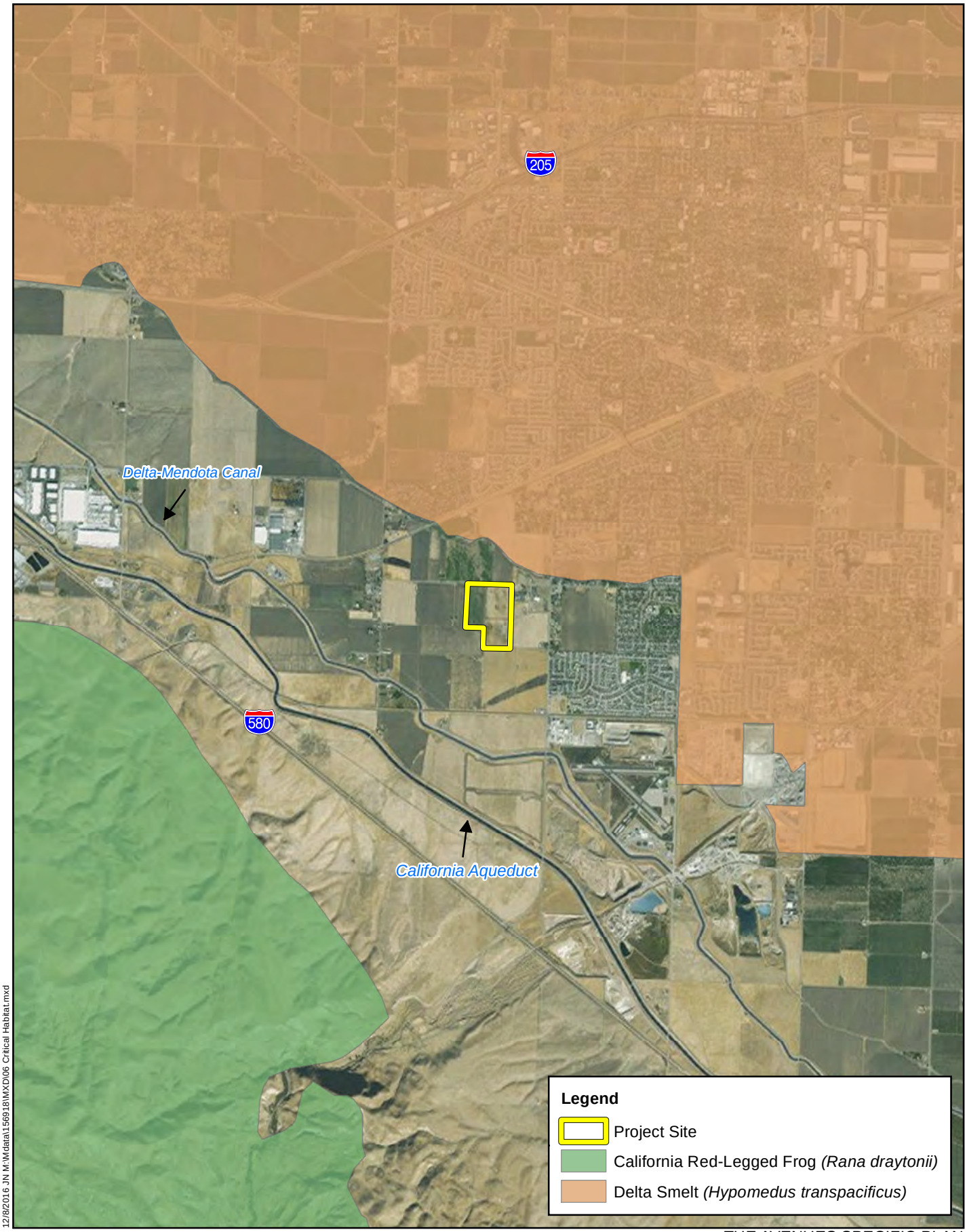
4.7.3 SPECIAL-STATUS PLANT COMMUNITIES

The CNDDB does not identify any special-status plant communities as occurring within the Tracy USGS 7.5-minute quadrangle. Therefore, special-status plant communities do not occur within the boundaries of the project site.

4.7.4 CRITICAL HABITAT

Under the federal Endangered Species Act, "Critical Habitat" is designated at the time of listing of a species or within one year of listing. Critical Habitat refers to specific areas within the geographical range of a species at the time it is listed that include the physical or biological features that are essential to the survival and eventual recovery of that species. Maintenance of these physical and biological features requires special management considerations or protection, regardless of whether individuals or the species are present or not. All federal agencies are required to consult with the USFWS regarding activities they authorize, fund, or permit which may affect a federally listed species or its designated Critical Habitat. The purpose of the consultation is to ensure that projects will not jeopardize the continued existence of the listed species or adversely modify or destroy its designated Critical Habitat. The designation of Critical Habitat does not affect private landowners, unless a project they are proposing is on federal lands, uses federal funds, or requires federal authorization or permits (e.g., funding from the Federal Highways Administration or a CWA Permit from the Corps). If a there is a federal nexus, then the federal agency that is responsible for providing the funding or permit would consult with the USFWS.

The project site is not located within federally designated Critical Habitat (Exhibit 6, *Critical Habitat*). The closest designated Critical Habitat is for Delta smelt (*Hypomesus transpacificus*) which is located approximately 0.20 miles north of the project site.



12/8/2016 JN M:\Mdata\156918\MXD\06 Critical Habitat.mxd

Michael Baker INTERNATIONAL

0 0.5 1 Miles

Source: Esri Imagery

THE AVENUES SPECIFIC PLAN
HABITAT ASSESSMENT AND SJMSCP CONSISTENCY ANALYSIS

Critical Habitat

Exhibit 6

Section 5 SJMSCP Consistency Analysis

The SJMSCP provides a strategy for balancing the conversion of open space to non-open space uses with the need for the long-term management of plant, fish and wildlife species, especially those that are currently listed, or may be listed in the future, under the Federal Endangered Species Act (FESA) or the California Endangered Species Act (CESA). The SJMSCP provides comprehensive compensation for impacts to threatened, endangered, rare and unlisted SJMSCP covered species and other wildlife, and compensation for some non-wildlife related impacts to recreation, agriculture, scenic values, and other beneficial open space uses (San Joaquin Council of Governments 2000).

The City of Tracy is a signatory to the SJMSCP. Covered Projects receive clearance under both the state and federal endangered species acts (FESA and CESA) if they are consistent with the SJMSCP. Compliance with the SJMSCP ensures that the impacts are mitigated below a level of significance in compliance with the California Environmental Quality Act (CEQA). The City of Tracy retains responsibility for ensuring that the appropriate Incidental Take Minimization Measures are properly implemented/monitored and that the appropriate fees are paid in compliance with the SJMSCP. The ASP area is located within the Central/Southwest Transition Zone of the SJMSCP.

5.1 SJMSCP INDEX ZONE

The overall strategy of the SJMSCP is built upon the division of the County into five distinct zones: Central Zone, Southwest Zone, Vernal Pool Zone, Primary Zone of the Delta, and Central/Southwest Transition Zone. These zones are distinguished by soil types, water regimes, elevation, topography, and vegetation type. The ASP is located within the Southwest Zone and Central/Southwest Transition Zone designated by the SJMSCP.

5.1.1 CENTRAL/SOUTHWEST TRANSITION ZONE

The Central/Southwest Transition Zone was established by the SJMSCP primarily to allow a special exception to the SJMSCP requirement that impacts to the Covered Species in any given SJMSCP Index Zone be compensated in the same Index Zone. Section 5.1.2.6 of the SJMSCP describes the basis for this exception. Primarily it involves the fact that the San Jaoquin kit fox may sometimes occur outside the Southwest Zone in areas that are part of the Central/Southwest Transition Zone. This provision allows compensation for habitat conversions in the Central/Southwest Transition Zone to occur in either the Central Zone or the Southwest Zone. In addition, the exception placed a high priority on the establishment of stepping stone refugia for the San Jaoquin kit fox within the Central/Southwest Transition Zone. Recent studies indicate that San Jaoquin kit fox may travel along the canal corridors.

5.2 MEASURES TO MINIMIZE IMPACTS

The SJMSCP covers 97 species, including species listed under the California and Federal Endangered Species Acts, and describes best management practices and establishes testing protocols and mitigation

procedures for the loss of habitat and associated incidental take of species resulting from the conversion of open space in the County over the next 50 years. All permanent impacts to habitats within San Joaquin County and associated species to which impacts could occur are covered by the SJMSCP. Prior to project implementation of the SJMSCP, there are four (4) categories of pre-construction surveys that need to be considered:

- Surveys to verify vegetation types proposed to be impacted to determine the suitability for SJMSCP Covered Species;
- Surveys prior to ground disturbing activities to determine success of relocated and/or implementation of Incidental Take Minimization Measures as specified in conditions of project approval;
- Surveys conducted in compliance with USFWS protocols to determine presence/absence of Conservancy and/or longhorn fairy shrimp (*Branchinecta longiantenna*) within vernal pools or other wetlands in the Southwest Zone, unless no vernal pools or wetlands occur onsite or will be avoided; and
- Surveys conducted pursuant to the protocol established in Section 5.2.2.5(A-C) for specific sensitive plant species. Sensitive plant species that have the potential to occur within the Central/Southwest Transition Zone are larger-flowered fiddleneck (*Amsinckia grandiflora*), showy madia (*Madia radiata*), Hospital canyon larkspur (*Delphinium californicum*), diamond-petaled poppy (*Eschscholzia rhombipetala*), and slough thistle (*Cirsium crassicaule*).

5.2.1 AVENUES SPECIFIC PLAN

To mitigate for the potential adverse impacts on special-status species, and provide for the incidental take of state and/or federally listed species or SJMSCP Covered Species within the project site, the applicant will comply with all relevant Incidental Take Minimization Measures defined in Section 5.2 of the SJMSCP pertinent to the project site. Part of the Incidental Take Minimization Measures would include conducting pre-construction surveys and relocation measures as noted above.

5.3 SJMSCP MITIGATION REQUIREMENTS

If a project applicant elects for coverage through participation in the SJMSCP, then the following options are available:

(1) Pay the applicable fee (Section 7.4.1 of the SJMSCP);

(2) Dedicate, as conservation easements or fee title, or in-lieu dedications (Sections 5.3.2.2 and 5.3.2.3 of the SJMSCP);

(3) Purchase approved mitigation bank credits (Section 5.3.2.4 of the SJMSCP); or

(4) Propose an alternative mitigation plan.

Mitigation of unavoidable impacts to species covered in the SJMSCP emphasizes compensation for habitat losses through the establishment, enhancement and management of habitat preserves. The preserves are normally located outside of designated existing and planned urban boundaries on agricultural lands throughout the County. Acquisition of preserve lands is accomplished primarily through the purchase of easements from landowners willing to sell urban development rights. In lieu of dedication of preserve land, the SJMSCP allows project proponents the option of providing mitigation through the payment of development fees on a per-acre basis, according to the type of habitat that is converted to non-open space uses.

Section 6 Conclusion and Recommendations

The ASP primarily consists of active agricultural land that is heavily disturbed and no longer contains native plant communities. On-site and surrounding land uses have heavily disturbed, if not completely eliminated, naturally occurring habitats from the proposed project site, reducing the suitability of the habitat to support special-status plant and wildlife species. No undisturbed, natural plant communities were observed within the boundaries of the project site during the habitat assessment. The vegetation on-site can be characterized as active agricultural fields. In addition, the project site contains land cover types that would be classified as detention basins and disturbed.

Based on this updated habitat assessment, there have been no changes to the biological resources occurring on the project site have occurred since the 2012 habitat assessment. All mitigation measures described in this document should be implemented prior to development of the ASP site.

No special-status plant species were observed on-site during the habitat assessment. Based on habitat requirements for specific special-status plant species and the availability and quality of habitats needed by each species, no special-status plant species are expected to occur and are presumed to be absent from the project site. No additional surveys are recommended.

No special-status wildlife species were observed on-site during the habitat assessment. Based on habitat requirements for specific special-status wildlife species and the availability and quality of habitats needed by each species, it was determined that the project site has a high potential to support California horned lark, and a low potential to support burrowing owl, Swainson's hawk, prairie falcon, San Joaquin coachwhip, and San Joaquin kit fox.

No jurisdictional drainage and/or wetland features were observed within or adjacent to the project site. Therefore, development of the project site will not result in impacts to Corps, Regional Board, or CDFW jurisdictional areas and regulatory approvals will not be required.

To mitigate for the potential adverse impacts on special-status species, and provide for the incidental take of state and/or federally listed species or SJMSCP Covered Species within the project site, the applicant will comply with all relevant Incidental Take Minimization Measures defined in Section 5.2 of the SJMSCP pertinent to the project site. Part of the Incidental Take Minimization Measures would include conducting pre-construction surveys and relocation measures as noted above (Section 5.2 Measures to Minimize Impacts).

Pursuant to the Migratory Bird Treaty Act (MBTA) and Fish and Game Code, removal of any trees, shrubs, or any other potential nesting habitat should be conducted outside the avian nesting season. The nesting season generally extends from early February through August, but can vary slightly from year to year based upon seasonal weather conditions. If ground disturbance and vegetation removal cannot occur outside of the nesting season, a pre-construction clearance survey for nesting birds should be

conducted within three (3) days of the start of any vegetation removal or ground disturbing activities to ensure that no nesting birds will be disturbed during construction. The biologist conducting the clearance survey should document a negative survey with a brief letter report indicating that no impacts to active avian nests will occur. If an active avian nest is discovered during the pre-construction clearance survey, construction activities should stay outside of a 300-foot buffer around the active nest. For raptor species, this buffer is expanded to 500 feet. It is recommended that a biological monitor be present to delineate the boundaries of the buffer area and to monitor the active nest to ensure that nesting behavior is not adversely affected by the construction activity. Once the young have fledged and left the nest, or the nest otherwise becomes inactive under natural conditions, normal construction activities can occur. As part of the nesting bird clearance survey, a pre-construction burrowing owl clearance survey shall be conducted within thirty days of the start of ground disturbing activities to ensure that burrowing owl, and least Bell's vireo remain absent from the project site.

Pursuant to Fish and Game Code Section 3503, it is unlawful to destroy any bird's nest or any bird's eggs that are protected under the MBTA. Further, any birds in the orders Falconiformes or Strigiformes (Birds of Prey, such as hawks and owls) are protected under Fish and Game Code Section 3503.5 which makes it unlawful to take, possess, or destroy their nest or eggs. Consultation with CDFW might be required prior to the removal of any raptor nest on the project site, if found.

Section 7 References

Bell, H. M. 1994. Analysis of habitat characteristics of San Joaquin kit fox in its northern range. M.S. Thesis, California State University, Hayward, CA. 90 pages.

Berryman Ecological, 2006. Tracy Hills San Joaquin Kit Fox Analysis.

California Department of Fish and Wildlife. 2012. Staff Report on Burrowing Owl Mitigation. State of California Natural Resources Agency.

California Department of Fish and Wildlife. 2017. RareFind 5, California Natural Diversity Data Base, California. Data Base report on threatened, endangered, rare or otherwise sensitive species and communities for the Tracy 7.5-minute USGS quadrangle.

California Native Plant Society. 2014. Inventory of Rare and Endangered Plants of California. Rare Plant Scientific Advisory Committee, David P. Tibor, Convening Editor. California Native Plant Society. Sacramento, California. Available at: http://www.cnps.org/inventory.

Google, Inc. 2013. Google Earth Pro version 7.1.2.2041, build date 10/7/2013. Historical aerial imagery from 1993 to 2016.

Hickman, J.C., ed. 2012. *The Jepson Manual: Higher Plants of California*. University of California Press.

Holland, R. F. 1986. Preliminary descriptions of the Terrestrial Natural Communities of California. Calif. Dept. of Fish and Game, Sacramento, CA.

Intellicast. 2016. Historical Weather Averages for Tracy, California. Available online at http://www.intellicast.com/Local/History.aspx?location=USCA1155.

Reid, F.A. 2006. A Field Guide to Mammals of North America, Fourth Edition. Houghton Mifflin Company, New York, New York.

Riverside County. 2003 (June). Final Western Riverside County Multiple Species Habitat Conservation Plan. http://www.rcip.org/

San Joaquin Council of Governments, 2000. S*an Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP).*

Sibley, D.A. 2003. The Sibley Field Guide to Birds of Western North America. Alfred A. Knopf, Inc., New York, New York.

Sibley, D.A. 2014. The Sibley Guide to Birds, Second Edition. Alfred A. Knopf, Inc., New York, New York.

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

U.S. Department of Agriculture, Natural Resources Conservation Service. 2016 *Web Soil Survey.* Online at http://websoilsurvey.nrcs.usda.gov/app/.

U.S. Department of the Interior, Geological Survey. 1979. 7.5-minute topographic map for the Tracy quadrangle.

Appendix A Site Photographs

Photograph 1: Standing within then northwest portion of the project site looking east.

Photograph 2: Looking south across the cotton field located within the western portion of the project site.

Photograph 3: One of two detention basins located along the northern portion of the project site.

Photograph 4: Standing within the south portion of the project site looking north.

Photograph 5: Standing within the eastern portion of the project site looking north.

Photograph 6: Looking south along the eastern boundary of the project site.

Appendix B Flora and Fauna Compendium

Table B – 1: Plant Species

Scientific Name	**Common Name**
*Avena fatua**	wild oat
*Erodium cicutarium**	red stemmed filaree
Gossypium sp.	cotton
Helianthus annuus	common sunflower
Heterotheca grandiflora	telegraph weed
*Hirschfeldia incana**	short-podded mustard
Lactuca sativa	lettuce
Leptochloa fusca	sprangletop
*Lycopersicon esculentum**	tomato
Malacothrix sonchoides	sow thistle
*Malva parviflora**	cheeseweed
Phaseolus lunatus	lima beans
Prunus dulcis	almonds
Salsola tragus	Russian thistle
*Silybum marianum**	milk thistle
*Sisymbrium irio**	London rocket
Solanum sp.	nightshade
Triticum sp.	wheat
*Urtica urens**	dwarf nettle
Xanthium strumarium	rough cockleburr

Table B– 2: Wildlife Species

Scientific Name	**Common Name**
Aves	**Birds**
Artemisiospiza nevadensis	sage sparrow
Buteo jamaicensis	red-tailed hawk
Calypte anna	Anna's hummingbird
Cathartes aura	turkey vulture
Corvus corax	common raven
Falco sparverius	American kestrel
Haemorhous mexicanus	house finch
Numenius phaeopus	whimbrel
Zenaida macroura	mourning dove
Zonotrichia leucophrys	white-crowned sparrow

*Non-native/invasive

Appendix C Potentially Occurring Special-Status Biological Resources

Table C-1: Potentially Occurring Special-Status Biological Resources

Scientific Name Common Name	**Status**	**Habitat**	**Covered by SJMSCP**	**Observed On-site**	**Potential to Occur**
SPECIAL-STATUS WILDLIFE SPECIES					
Agelaius tricolor tricolored blackbird	Fed: None CA: SSC	Can be found in a wide variety of habitat including annual grasslands, wet and dry vernal pools and other seasonal wetlands, agricultural fields, cattle feedlots, and dairies. Occasionally forage in riparian scrub habitats along marsh borders. Basic habitat requirements for breeding include open accessible water, protected nesting substrate (freshwater marsh dominated by cattails, willows, and bulrushes [*Schoenoplectus* sp.]), and either flooded or thorny or spiny vegetation and suitable foraging space providing adequate insect prey.	Yes	No	**Presumed Absent** No suitable habitat is present on-site.
Ambystoma californiense California tiger salamander	Fed: **THR** CA: **THR** ; WL	Nocturnal, and fossorial, spending most time underground in animal burrows. Frequents grassland, oak savanna, and edges of mixed woodland and lower elevation coniferous forest.	Yes	No	**Presumed Absent** No suitable habitat is present on-site.
Antrozous pallidus pallid bat	Fed: None CA: SSC	Locally common species of low elevation in California. Occurs in grasslands, shrublands, woodlands, and forests from sea level up through mixed conifer forests. Most common in open, dry habitats with rocky areas for roosting.	No	No	**Presumed Absent** No suitable habitat is present on-site.
Aquila chrysaetos golden eagle	Fed: None CA: FP ; WL	Occupies nearly all terrestrial habitats of the western states except densely forested areas. Favors secluded cliffs with overhanging ledges and large trees for nesting and cover. Hilly or mountainous country where takeoff and soaring are supported by updrafts is generally preferred to flat habitats. Deeply cut canyons rising to open mountain slopes and crags are ideal habitat.	Yes	No	**Presumed Absent** No suitable habitat is present on-site.
Arizona elegans occidentalis California glossy snake	Fed: None CA: SSC	Inhabits arid scrub, rocky washes, grasslands, and chaparral habitats.	No	No	**Presumed Absent** No suitable habitat is present on-site.
Athene cunicularia burrowing owl	Fed: None CA: SSC	Primarily a grassland species, but it persists and even thrives in some landscapes highly altered by human activity. Occurs in open, annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. The overriding characteristics of suitable habitat appear to be burrows for roosting and nesting and relatively short vegetation with only sparse shrubs and taller vegetation.	No	No	**Low** The project site provides line-of-sight opportunities favored by burrowing owls.
Bombus crotchii Crotch bumble bee	Fed: None CA: None	Exclusive to coastal California east towards the Sierra-Cascade Crest; less common in western Nevada.	No	No	**Presumed Absent** No suitable habitat is present on-site.

Scientific Name Common Name	**Status**	**Habitat**	**Covered by SJMSCP**	**Observed On-site**	**Potential to Occur**
Buteo swainsoni Swainson's hawk	Fed: None CA: **THR**	Typical habitat is open desert, grassland, or cropland containing scattered, large trees or small groves. Breeds in stands with few trees in juniper-sage flats, riparian areas, and in oak savannah in the Central Valley. Forages in adjacent grassland or suitable grain or alfalfa fields or livestock pastures.	No	No	**Low** The project site provides suitable foraging habitat for this species.
Corynorhinus townsendii Townsend's big-eared bat	Fed: None CA: **CTHR** ; SSC	Utilize a variety of habitats, almost always near caves or other roosting areas. Can be found in pine forests and arid desert scrub habitats.	Yes	No	**Presumed Absent** No suitable habitat is present on-site.
Desmocerus californicus dimorphus valley elderberry longhorn beetle	Fed: **THR** CA: None	Always found on or close to its host plant, red or blue elderberry (*Sambucus* sp.), along rivers and streams.	Yes	No	**Presumed Absent** No suitable habitat is present on-site.
Emys marmorata western pond turtle	Fed: None CA: SSC	Requires both aquatic and terrestrial habitats. Uses permanent and seasonal aquatic habitats including rivers, sloughs, lakes, reservoirs, ponds, and irrigation canals. Moves onto land for nesting, overwintering, dispersal, and basking.	No	No	**Presumed Absent** No suitable habitat is present on-site.
Eremophila alpestris actia California horned lark	Fed: None CA: WL	Occurs in meadows, grasslands, open fields, prairie, and alkali flats. This subspecies is typically found in coastal regions.	Yes	No	**High** Suitable habitat for this species is present on-site.
Eumops perotis californicus western mastiff bat	Fed: None CA: SSC	Primarily a cliff-dwelling species, roost generally under exfoliating rock slabs. Roosts are generally high above the ground, usually allowing a clear vertical drop of at least three meters below the entrance for flight. In California, it is most frequently encountered in broad open areas. Its foraging habitat includes dry desert washes, flood plains, chaparral, oak woodland, open ponderosa pine forest, grassland, and agricultural areas.	Yes	No	**Presumed Absent** No suitable habitat is present on-site.
Falco mexicanus prairie falcon	Fed: None CA: WL	Occupy open treeless terrain including prairies, deserts, riverine escarpments, canyons, foothills, and mountains in relatively arid western regions.	Yes	No	**Low** The project site provides suitable foraging habitat for this species.
Masticophis flagellum ruddocki San Joaquin coachwhip	Fed: None CA: SSC	Occurs in open, dry treeless areas, including grassland and saltbrush scrub. Takes refuge in rodent burrows, under shaded vegetation, and under surface objects.	Yes	No	**Low** The project site provides some suitable habitat for this species.
Melospiza melodia song sparrow (Modesto population)	Fed: None CA: SSC	Prefers emergent freshwater marshes dominated by tules (*Scirpus* spp.) and cattails (*Typha* spp.) as well as riparian willow (*Salix* spp.) thickets.	No	No	**Presumed Absent** No suitable habitat is present on-site.
Perognathus inornatus San Joaquin Pocket Mouse	Fed: None CA: None	Occurs in dry, open grasslands or scrub areas on fine-textures soils between 1,100 and 2,000 feet in the Central and Salinas valleys.	Yes	No	**Presumed Absent** No suitable habitat is present on-site.

Scientific Name Common Name	**Status**	**Habitat**	**Covered by SJMSCP**	**Observed On-site**	**Potential to Occur**
Phrynosoma blainvillii coast horned lizard	Fed: None CA: SSC	Found in a wide variety of vegetation types including coastal sage scrub, annual grassland, chaparral, oak woodland, riparian woodland and coniferous forest. In inland areas, this species is restricted to areas with pockets of open microhabitat, created by disturbance (i.e. fire, floods, roads, grazing, fire breaks). The key elements of such habitats are loose, fine soils with a high sand fraction; an abundance of native ants or other insects; and open areas with limited overstory for basking and low, but relatively dense shrubs for refuge.	No	No	**Presumed Absent** No suitable habitat is present on-site.
Rana boylii foothill yellow-legged frog	Fed: None CA: SSC	Frequents rocky streams and rivers with rocky substrate and open, sunny banks, in forests, chaparral, and woodlands. Sometimes found in isolated pools, vegetated backwaters, and deep, shaded, spring-fed pools.	Yes	No	**Presumed Absent** No suitable habitat is present on-site.
Rana draytonii California red-legged frog	Fed: **THR** CA: SSC	Found mainly near ponds in humid forests, woodlands, grasslands, coastal scrub, and streamsides with plant cover. Most common in lowlands or foothills. Frequently found in woods adjacent to streams. Occurs along the coast ranges from Mendocino County south and in portions of the Sierra Nevada and Cascades ranges.	No	No	**Presumed Absent** No suitable habitat is present on-site.
Spea hammondii western spadefoot	Fed: None CA: SSC	Prefers open areas with sandy or gravelly soils, in a variety of habitats including mixed woodlands, grasslands, coastal sage scrub, chaparral, sandy washed, lowlands, river floodplains, alluvial fans, playas, alkali flats, foothills, and mountains. Rain pools which do not contain bullfrogs, fish, or crayfish are necessary for breeding.	No	No	**Presumed Absent** No suitable habitat is present on-site.
Taxidea taxus American badger	Fed: None CA: SSC	Primarily occupy grasslands, parklands, farms, tallgrass and shortgrass prairies, meadows, shrub-steppe communities and other treeless areas with sandy loam soils where it can dig more easily for its prey. Occasionally found in open chaparral (with less than 50% plant cover) and riparian zones.	Yes	No	**Presumed Absent** No suitable habitat is present on-site.
Vireo bellii pusillus least Bell's vireo	Fed: **END** CA: **END**	Primarily occupy Riverine riparian habitat that typically feature dense cover within 1 -2 meters of the ground and a dense, stratified canopy. Typically it is associated with southern willow scrub, cottonwood-willow forest, mule fat scrub, sycamore alluvial woodlands, coast live oak riparian forest, arroyo willow riparian forest, or mesquite in desert localities. It uses habitat which is limited to the immediate vicinity of water courses, 2,000 feet elevation in the interior.	No	No	**Presumed Absent** No suitable habitat is present on-site.

Scientific Name Common Name	**Status**	**Habitat**	**Covered by SJMSCP**	**Observed On-site**	**Potential to Occur**
Vulpes macrotis mutica San Joaquin kit fox	Fed: **END** CA: **THR**	Nests in fresh emergent wetland with dense vegetation and deep water, often along borders of lakes or ponds. Forages in emergent wetland and moist, open areas, especially cropland and muddy shores of lacustrine habitat. Restricted distribution in Central Valley in winter, occurring mainly in the western portion.	Yes	No	**Low** The project site provides suitable foraging habitat for this species.
SPECIAL-STATUS PLANT SPECIES					
Amsinckia grandiflora large-flowered fiddleneck	Fed: **END** CA: **END** CNPS: 1B.1	Habitats include cismontane woodland and valley and foothill grassland. Found at elevations ranging from 886 to 1,804 feet. Blooming period is from March to May.	Yes	No	**Presumed Absent** No suitable habitat is present on-site.
Blepharizonia plumosa big tarplant	Fed: None CA: None CNPS: 1B.1	Grows in clay soils within valley and foothill grassland habitat. Found at elevations ranging from 98 to 1,657 feet. Blooming period is from July to October.	No	No	**Presumed Absent** No suitable habitat is present on-site.
California macrophylla round-leaved filaree	Fed: None CA: None CNPS: 1B.2	Grows in clay soils within cismontane woodland and valley and foothill grassland habitats. Found at elevations ranging from 49 to 3,937 feet. Blooming period is from March to May.	No	No	**Presumed Absent** No suitable habitat is present on-site.
Eschscholzia rhombipetala diamond-petaled California poppy	Fed: None CA: None CNPS: 1B.1	Found in valley and foothill grassland habitats. Found at elevations ranging from 0 to 3,199 feet. Blooming period is from March to April.	No	No	**Presumed Absent** No suitable habitat is present on-site.
Madia radiata showy golden madia	Fed: None CA: None CNPS: 1B.1	Habitats include cismontane woodland and valley and foothill grassland. Found at elevations ranging from 82 to 3,986 feet. Blooming period is from March to May.	Yes	No	**Presumed Absent** No suitable habitat is present on-site.
Symphyotrichum lentum Suisun Marsh aster	Fed: None CA: None CNPS: 1B.2	Found within marshes and swamps (brackish and freshwater). Found at elevations ranging from 0 to 10 feet. Blooming period is from April to November.	No	No	**Presumed Absent** No suitable habitat is present on-site.
Tropidocarpum capparideum caper-fruited tropidocarpum	Fed: None CA: None CNPS: 1B.1	Occurs in valley and foothill grassland habitats (alkaline hills). Found at elevations ranging from 3 to 1,493 feet. Blooming period is from March to April.	Yes	No	**Presumed Absent** No suitable habitat is present on-site.

U.S. Fish and Wildlife Service (USFWS) - Federal
END - Federal Endangered
THR - Federal Threatened

California Department of Fish and Wildlife (CDFW) - California
END - California Endangered
THR - California Threatened
CTHR – Candidate California Threatened
SSC - California Species of Concern
WL - Watch List
FP - California Fully Protected

California Native Plant Society (CNPS)
California Rare Plant Rank
1B - Plants Rare, Threatened, or Endangered in California and Elsewhere

Threat Ranks
0.1 - Seriously threatened in California
0.2 - Moderately threatened in California

Appendix D Measures to Minimize Impacts – Incidental Take Minimization Measures in the SJMSCP

5.2 MEASURES TO MINIMIZE IMPACTS - INCIDENTAL TAKE MINIMIZATION MEASURES

As noted in the preceding overview, efforts to minimize impacts to SJMSCP Covered Species are species-based emphasizing the implementation of Incidental Take Minimization Measures aimed at averting the actual killing or injury of individual SJMSCP Covered Species on Open Space lands being Converted to non-Open Space uses.

The following Incidental Take Minimization Measures represent the best management practices known at the time of adoption of the SJMSCP. These measures may be refined throughout the life of the Plan, pursuant to the SJMSCP's Adaptive Management Plan (see Section 5.9.4), in response to positive or negative results found in the application of these methods as identified in the SJMSCP's Monitoring Plan (see Sections 5.9.2 and 5.9.3) or to reflect improvements and new discoveries in methods of Incidental Take Minimization or other biological factors. Incidental Take Minimization Measures for the SJMSCP are described, in detail, in Section 5.2.4. Procedures for determining when these measures apply to projects are described as follows:

5.2.1 ESTABLISHING CONDITIONS OF PROJECT APPROVAL RELATED TO INCIDENTAL TAKE MINIMIZATION MEASURES

5.2.1.1 Review Process and Condition Format

Plan Participants shall forward Advisory Agency Notices to the Joint Powers Authority (JPA), as required by Section 8.1.3.2, at the beginning of a discretionary project's application review process. The JPA shall respond, in writing, to the Plan Participants in accordance with the SJMSCP stating that either:

A. No Incidental Take Minimization Measures are necessary for the project; or,

B. Incidental Take Minimization Measures are necessary for the project. The JPA shall list the applicable Incidental Take Minimization Measures in the written response.

Plan Participants shall attach Incidental Take Minimization Measures, in accordance with Sections 5.2.3 and 5.2.4 of the SJMSCP, as conditions of project approval as provided by the JPA and including the substance of the following text to be included as part of the conditions of project approval or as an attachment to conditions of project approval:

> "In reliance on the Section 10(a)(1)(B) Permit issued by the United States Fish and Wildlife Service and the Section 2081(b) Incidental Take Permit issued by the California Department of Fish and Game, the [City/County of] has [select one: issued a(n)/approved a(n)] [identify entitlement as appropriate: e.g., Conditional Use Permit/Site Development Permit/Subdivision Map/Parcel Map, etc.] to [name of Project Proponent/Applicant/Landowner], its successors, agents and assigns pursuant to the "Implementation Agreement for the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan" which will allow [name of Project Proponent/Applicant/Landowner], its successors, agents and assigns to construct, operate and maintain the Project commonly known as [name specific Project and cite document containing project description as approved by local jurisdiction] and located on [list parcel numbers and/or attach map] which may result in a legally permitted Incidental Take of the SJMSCP Covered Species in accordance with and subject to the terms and conditions of the [identify entitlement as appropriate: e.g., Conditional Use Permit/Site Development Permit/Subdivision Map/Parcel Map, etc.]. This

Certification applies only to activities on the subject parcel(s) which are carried out in full compliance with [identify entitlement as appropriate: e.g., Conditional Use Permit/Site Development Permit/Subdivision Map/Parcel Map, etc.], Section 10(a)(1)(B) Permit and Section 2081(b) Incidental Take Permit conditions."

5.2.1.2 Time Limits for JPA Review of Discretionary Projects

The JPA shall provide the written response required pursuant to Section 5.2.1.1 to Plan Participants within the following time periods commencing with the receipt of an Advisory Agency Notice from Plan Participants:

A. For projects 40 acres or less in size, written response will be provided by the JPA to the Plan Participants within 30 calendar days;

B. For projects of greater than 40 acres the JPA shall provide written responses to the Plan Participants within 60 calendar days;

C. For projects requiring an environmental impact report for other than biological reasons, time limits shall be extended to allow for surveys of SJMSCP Covered Plant Species during optimal blooming seasons.

Extensions of these time limits may be granted with the approval of the Project Proponent.

5.2.1.3 Completion of Incidental Take Minimization Measures-Responsibilities of the Project Proponent

Incidental Take Minimization Measures shall be completed prior to Site Disturbance (normally prior to grading) as indicated in the conditions of project approval. Some Incidental Take Minimization Measures will be carried out during project construction. The cost of implementing Incidental Take Minimization Measures is the responsibility of the Project Proponent. The JPA is responsible for costs and implementation of relocation efforts as approved by the Permitting Agencies and as determined necessary through preconstruction surveys.

The following paragraphs summarize the JPA's procedure for assessing the applicability of Incidental Take Avoidance Measures for individual projects.

5.2.2 PRECONSTRUCTION SURVEYS

5.2.2.1 Overview

There are four categories of preconstruction surveys necessary to the implementation of the SJMSCP:

A. Preconstruction surveys to verify vegetation types affected by the project and to determine if SJMSCP Covered Species are present and, if present, attaching Incidental Take Minimization Measures as conditions of project approval for individual projects (see Section 5.2.2.5 for survey methodologies and Section 5.2.2.4 for special provisions for conducting plant surveys). These preconstruction surveys shall be conducted in the field when a project is located on suitable habitat for one or more of the SJMSCP Covered Species;

B. Preconstruction surveys conducted prior to (or, for some Incidental Take Minimization Measures, during) ground-disturbing activities to determine if SJMSCP Covered Species have been successfully relocated and/or to determine if other Incidental Take Minimization Measures have been implemented, as specified in the conditions of project approval; and

C. Preconstruction surveys, conducted in compliance with current U.S. Fish and Wildlife Service protocols, to determine the presence or absence of Conservancy and/or longhorn fairy shrimp within vernal pools or other wetlands located southwest of I-580 in the *Southwest Zone* unless complete avoidance of vernal pools and/or wetlands is achieved in compliance with SJMSCP Section 5.5.9.

D. Preconstruction surveys conducted pursuant to the protocol established in Section 5.2.2.5(A-C) for:

- Large-flowered fiddleneck southwest of the 900 foot contour line in the *Southwest Zone* southwest of I-580;
- Showy madia in the *Southwest Zone*;
- Hospital canyon larkspur in the *Southwest Zone*;
- Diamond-petaled poppy in the *Southwest Zone*;
- Greene's tuctoria in the *Vernal Pool Zone*;
- Succulent owl's clover in the *Vernal Pool Zone*;
- Legenere in the *Vernal Pool Zone*;
- Delta button celery in the *Central Zone* in S(Scrub) vegetation types;
- Sanford's arrowhead in the *Central Zone* in W3, W4 and all I and R vegetation types; and
- Slough thistle in the *Central and Central/Southwest Transition Zones* in W4, R, R2, R3, R4 or R5 vegetation types–in particular where R touches or transitions to W.

The costs of conducting preconstruction surveys described in paragraphs A, B, and D, above, are calculated in the administrative costs for the SJMSCP and are included in funding estimates. The JPA shall conduct preconstruction surveys described in the paragraphs A, B, and D, above, at no additional cost to the Project Proponent. Preconstruction surveys required pursuant to paragraph C, above, are the responsibility of the Project Proponent.

5.2.2.2 Time Limits for Conducting JPA Preconstruction Surveys

The JPA shall conduct preconstruction surveys to determine the necessity of establishing Incidental Take Minimization Measures as conditions of project approval, as described above in 5.2.2.1(A and D) within the following time periods commencing from the date of receipt of Advisory Agency Notices from the Plan Participants except as provided in Section 5.2.2.5(B):

A. For projects of 40 acres or less, surveys shall be conducted within 30 calendar days

B. For projects of greater than 40 acres surveys shall be conducted within 60 calendar days,

C. For projects requiring an environmental impact report, the time limits shall be extended to allow for surveys for SJMSCP Covered Plant Species during optimal blooming seasons.

The JPA shall conduct preconstruction surveys prior to ground-disturbing activities to determine if SJMSCP Covered Species have been successfully relocated and/or to determine if other Incidental Take Minimization Measures have been implemented as specified in the conditions of project approval, as described above in Section 5.2.2.1(B), within two working days from the date that the JPA receives written or oral notice that the Project Proponent is ready to begin Site Disturbances except as provided in Sections 5.2.2.4(D) and 5.2.2.5(D) and 5.2.2.5 (E). Extensions of these time limits may be granted with the approval of the Project Proponent.

While the time limits for responding to Advisory Agency Notices remain as described above, actual preconstruction survey time limits do not apply for the following:

A. For projects proposed within potential habitat for the following plant species: large-flowered fiddleneck (*Amsinckia grandiflora*); succulent owl's clover (*Castilleja campestris* ssp. *succulenta*) Greene's tuctoria (*Tuctoria greenei*), Delta button celery (*Eryngium racemosum*), Diamond-petaled California poppy (*Escholzia rhombipetala*), showy madia (*Madia radiata*), slough thistle (*Cirsium crassicaule*), legenere (*Legenere limosa*), Hospital Canyon larkspur (*Delphinium californicum* ssp. *interius*), and Sanford's arrowhead (*Sagittaria sandfordii*). For these plant species, preconstruction surveys shall occur based on blooming periods for the plants and in accordance with the provisions of Section 5.2.2.5(B) unless otherwise approved pursuant to Section 5.2.2.5(C), unless full avoidance of all potential suitable habitat for the species occurs pursuant to Sections 5.5.9 (F) for narrowly distributed plant species or unless no kill/no Conversion of occupied habitat limits are lifted pursuant to Section 5.5.2.1; and

B. For projects proposed within potential habitat for the longhorn fairy shrimp and Conservancy fairy shrimp. Preconstruction surveys for these species shall be in accordance with current USFWS survey protocols unless full avoidance of all potential habitat for these species occurs pursuant to Section 5.5.9(B) or unless no kill/no Conversion of occupied

habitat limits are lifted pursuant to Section 5.5.2.7.

5.2.2.3 Determining the Necessity for Site Visits as Part of Preconstruction Surveys

To assist in its assessment of the necessity for Incidental Take Minimization Measures, the JPA shall consult the *SJMSCP GIS Database* or other sources (e.g., current reports from Permitting Agency field personnel; published results of field surveys conducted by, or on behalf of, Permitting Agencies or other local, state or federal agencies; the SJMSCP Biological Analysis; or other sources that provide information related to the location of SJMSCP Covered Species), if necessary, to determine the likelihood for disturbing an SJMSCP Covered Species or Natural Land area (in particular vernal pools or other wetlands) based on information indicating known species occupation sites, vegetation types present and the potential for the site to be occupied by a species given the vegetation types and species needs. If insufficient information exists to make a determination, the JPA shall conduct a preconstruction survey to assess the likelihood of the occurrence of an SJMSCP Covered Species or any Natural Lands located within the project area. It is anticipated that preconstruction surveys occurring on the project site will occur on the majority (perhaps up to 90%) of project sites. Preconstruction surveys at the project site will always occur when suitable habitat is present or potentially present for one or more of the SJMSCP Covered Species. The estimated 10% of projects which are unlikely to require a preconstruction survey include, for example, infill areas within well-developed urban centers with extensive ground disturbance and extensive paving.

5.2.2.4 Special Provisions for Conducting Preconstruction Surveys for Plants

Since plants permanently occupy a given site (and therefore cannot easily be avoided by timing construction to avoid breeding seasons) and some plants may only be seasonally identified during sometimes brief blooming seasons, special provisions have been included in the SJMSCP for conducting pre-construction surveys for plants to ensure that Incidental Take Minimization Measures can be undertaken.

SJMSCP Covered Plant Species in San Joaquin County are located primarily on Natural Lands outside the boundaries of proposed development areas anticipated over the next 50 years as illustrated in the following maps located at the back of the SJMSCP:

- *SJMSCP Planned Land Use Map* - Illustrates boundaries of proposed development areas for the next 50 years.

- San Joaquin County Habitat Map Conservation and Open Space Plan Maps - Distribution of Existing Vegetation Habitat Types in San Joaquin County. Provides overview of the locations of Natural Lands, Natural Lands which are Wetlands, High and Low Habitat Value Agricultural Lands, and Urban Lands.

- San Joaquin County Habitat Map Conservation and Open Space Plan Maps - Species Occurrence. This map provides an overview of the distribution of SJMSCP Covered plants, birds, mammals, amphibians, reptiles, and invertebrates.

These three maps illustrate that **most SJMSCP Covered Plant Species, with few exceptions (e.g., Delta slough thistle, Delta button celery and vernal pool species), are located almost exclusively on Natural Lands located outside of proposed development boundaries**.

Further, based upon development patterns over the past 30± years and the fact that proposed development

will occur primarily on highly disturbed and cultivated lands (Agricultural Habitat Lands) while most SJMSCP Covered Plant Species occur on Natural Lands, only minimal impacts are anticipated for most SJMSCP Covered Plant Species. In fact, **there is a much higher likelihood that most SJMSCP Covered Plant Species will be protected than they will be subject to Incidental Take under the SJMSCP.**

The following factors further support these conclusions:

- ***Southwest Zone.*** This area consists primarily of grasslands (Natural Lands). Virtually no development (except for some minor mineral resource development and urbanization concentrated along I-580--see the *SJMSCP Proposed Land Use Map* at the back of the SJMSCP) is proposed in this zone.

  While nearly devoid of proposed development, the following SJMSCP Covered Plant Species are located almost exclusively in the *Southwest Zone* and the likelihood of protecting these species within SJMSCP Preserves established for the San Joaquin kit fox are much higher than the likelihood of disturbing these species through SJMSCP Permitted Activities: Large-flowered fiddleneck (*Amsinckia grandiflora*), hospital canyon larkspur (*Delphinium californicum* ssp. *interius*), showy madia (*Madia radiata*) and recurved larkspur (*Delphinium recurvatum*). Alkali milk-vetch (*Astragalus tener* var. *tener*), brittlescale (*Atriplex depressa*), Mt. Hamilton coreopsis (*Coreopsis hamiltonii*), diamond-petaled California poppy (*Eschscholzia rhombipetala*), mad-dog skullcap (*Scutellaria lateriflora*), Wright's trichocoronis (*Trichocoronis wrightii* var. *wrightii*), and caper-fruited tropidocarpum (*Tropidocarpum capparideum*) also have their potential habitat in the *Southwest Zone*, although no known occurrences of these species exist in this zone. Similarly, heartscale (*Atriplex cordulata*) was found historically in the *Southwest Zone*, but has no current records identifying occupied habitat in the County. These species would be protected in the same manner as the other four plant species known to occur in the *Southwest Zone* should they be discovered over the life of the Plan.

  In addition, ensuring that no disturbance will occur to the most narrowly distributed of these species, the SJMSCP Permits prohibit kill of individuals and conversion of occupied habitat for the large-flowered fiddleneck, diamond-petaled California poppy, showy madia and Hospital canyon larkspur unless special findings have been made upon consultation with the Permitting Agencies in accordance with the criteria established in Section 5.5.2.1. Special provisions for pre-construction surveys to ensure identification of these species are included in Section 5.2.2.5(B).

- ***Primary Zone of the Delta.*** SJMSCP Covered Plant Species located in the *Primary Zone of the Delta* are well-documented due to extensive surveys undertaken in this zone by state and federal agencies often associated with the management of water resources in the Sacramento/San Joaquin Delta. In addition, the Delta Protection Act places strict limits on urban development and other SJMSCP Permitted Activities within the *Primary Zone of the Delta*. Therefore, SJMSCP Covered Plant Species in the *Primary Zone of the Delta* are both highly protected by state legislation and are easily located due to extensive study of this region and, as with the *Southwest Zone*, the likelihood of protecting SJMSCP Covered Plant Species within Preserves established for the California black rail and Valley elderberry longhorn beetle is much higher than the likelihood that SJMSCP Covered Plant species in the *Primary Zone of the Delta* will be subject to Incidental Take pursuant to the SJMSCP.

The following plants occur almost exclusively in the *Primary Zone of the Delta*: Suisun marsh aster (*Aster lentus*), California hibiscus (*Hibiscus lasiocarpus*), Delta tule pea (*Lathyrus jepsonii* var. *jepsonii*), Mason's lilaeopsis (*Lilaeopsis masonii*), Delta mudwort (*Limosella subulata*) and Sanford's arrowhead (*Sagittaria sanfordii*).

As previously noted, to ensure that no disturbance will occur to narrowly distributed species, the SJMSCP Permits prohibit kill of individuals and conversion of occupied habitat for Sanford's arrowhead unless special findings have been made upon consultation with the Permitting Agencies in accordance with the criteria established in Section 5.5.2.1. 5.5.2.1. Special provisions for pre-construction surveys to ensure identification of this species are included in Section 5.2.2.5(B).

- ***Vernal Pool Zone.*** The Conversion of up to 5,000 acres of vernal pool grasslands to orchards and vineyards, permitted pursuant to a pending U.S. Army Corps of Engineers Federal Clean Water Act Section 404 permit, or equivalent (as described in SJMSCP Section 5.6), is the primary activity anticipated to impact SJMSCP Covered Plant Species associated with vernal pools. This 5,000 acres of vernal pool grasslands contains approximately 707 acres of vernal pools (actual wetted surface area). Of the SJMSCP Covered Plant Species associated with vernal pools, only three are known to occur in San Joaquin County: succulent owl's clover (*Castilleja campestris* ssp. *succulenta*), Boggs Lake hedge-hyssop (*Gratiola heterosepala*), and legenere (*Legnere limosa*). The remaining plants have been proposed for coverage due to historical records of the species which are presumed extirpated within the County. The primary emphasis of the SJMSCP with respect to these presumed extirpated species is the potential reintroduction on an experimental basis as part of vernal pool creation efforts to be undertaken by the SJMSCP. These species are: Greene's tuctoria (*Tuctoria greenei*), Hoover's calycadenia (*Calycadenia hooveri*), bristly sedge (*Carex comosa*), and Red Bluff dwarf rush (*Juncus leiospermus*). In addition, due to their rarity, special protocols are required pursuant to Section 5.2.2.5(B) for conducting preconstruction surveys for Greene's tuctoria, legenere and the succulent owl's clover to protect against inadvertent take (i.e., kill of individuals or conversions of occupied habitat) of these species if these species are more widely distributed in the County than anticipated. Therefore, the SJMSCP includes special provisions for locating populations of the rarest of the vernal pool plant species and provides a potential for reintroducing populations for several extirpated vernal pool species in San Joaquin County.

  As previously noted, to ensure that no disturbance will occur to narrowly distributed species, the SJMSCP Permits prohibit kill of individuals and conversion of occupied habitat for succulent owl's clover, Greene's tuctoria, and legenere unless special findings have been made upon consultation with the Permitting Agencies in accordance with the criteria established in Section 5.5.2.1.

- ***Central Zone.*** Most SJMSCP Permitted Activities will occur within the *Central Zone.* While the majority of the Central Zone is composed of cultivated lands (i.e., Agricultural rather than Natural Lands), some Natural Lands associated with riparian corridors exists in this zone. These riparian corridors are associated with two plant species: the slough thistle (*Cirsium crassicaule*), and the Delta button-celery (*Eryngium racemosum*). In addition, Sanford's arrowhead is known to occur in this zone.
  As previously noted, to ensure that no disturbance will occur to narrowly distributed species,

the SJMSCP Permits prohibit kill of individuals and conversion of occupied habitat for Sanford's arrowhead, slough thistle and Delta button celery unless special findings have been made upon consultation with the Permitting Agencies in accordance with the criteria established in Section 5.5.2.1. 5.5.2.1. Special provisions for pre-construction surveys to ensure identification of this species are included in Section 5.2.2.5(B).

- All *SJMSCP Index Zones*. Based upon development proposals considered by local jurisdictions over the past 25 years, SJMSCP Planners conclude that new non-agricultural developments occurring on Natural Lands (the most likely location for SJMSCP Covered Plant Species) are almost always large developments which require long (i.e., often one year) review processes and preparation of environmental impact reports. Therefore, planners conclude, given the distribution of the SJMSCP Covered Plant Species and Natural Lands in San Joaquin County, approximately 95% of the SJMSCP Permitted Activities which will involve SJMSCP Covered Plant species will involve an environmental review process providing ample time (i.e., at least one year) to conduct both preconstruction surveys during optimal blooming seasons for SJMSCP Covered Plants and to implement appropriate mitigation measures (e.g., seed collections). The exception to this generalization is the Conversion of vernal pool grasslands to orchards and vineyards which is not subject to an environmental review process undertaken by local jurisdictions, but is normally subject to a Section 404 permit review process instead (thereby extending the project review period by a period of time similar to that of an environmental review and allowing for additional survey time).

- All *SJMSCP Index Zones*. In addition to SJMSCP restrictions against kill and Conversion of occupied habitat for ten of the SJMSCP's most narrowly distributed plant species (and, in fact true for all other non-plant SJMSCP Covered Species), two mechanisms are included in the SJMSCP to allow a reevaluation of the procedure for assessing impacts resulting from SJMSCP Permitted Activities (including impacts to SJMSCP Covered Plants) should development patterns within San Joaquin County shift from the patterns described above in paragraphs A-E change:

    1. A requirement for permitting SJMSCP Covered Activities which are unmapped on the *SJMSCP Planned Land Use Map* as described in SJMSCP Section 3.4; and

    2. A requirement for a Major Plan Amendment (Section 8.8.5) to change the urban boundaries as indicated on the *SJMSCP Planned Land Use Map* if that total changes to the boundaries exceed the 5,000 acre annexation allocation provided pursuant to Section 8.2.1(10).

Based on these factors, preconstruction surveys for SJMSCP Covered Plants within the various *SJMSCP Index Zones* shall

A. Be conducted pursuant to the protocols established in Section 5.2.2.5 (A-C) for large-flowered fiddleneck (*Amsinckia grandiflora*); succulent owl's clover (*Castilleja campestris* ssp. *succulenta*) Greene's tuctoria (*Tuctoria greenei*), Delta button celery (*Eryngium racemosum*), Diamond-petaled California poppy (*Escholzia rhombipetala*), showy madia (*Madia radiata*), slough thistle (*Cirsium crassicaule*), legenere (*Legenere limosa*), Hospital Canyon larkspur (*Delphinium californicum* ssp. *interius*), and Sanford's arrowhead

(*Sagittaria sandfordii*). No kill and no Conversion of occupied habitat for these species is permitted pursuant to the SJMSCP unless the findings of Section 5.5.2.1 are made with the concurrence of the Permitting agencies; or

B. Be undertaken for SJMSCP Covered Plants excluded from the preceding paragraph (A) during the discretionary project's application review process to provide ample opportunities to identify plants during the blooming seasons. The presence of SJMSCP Covered Plant Species can be determined on a project site well in advance of project construction, (with nearly no risk of a new SJMSCP Covered Plant Species moving in before construction), through reviewing the *SJMSCP GIS Database* and other current information sources and, when necessary, by conducting pre-construction surveys. Through this process, the JPA shall conduct pre-construction surveys during appropriate blooming seasons in areas of known SJMSCP Covered Plant Species occurrences or if the area's characteristics are likely to support SJMSCP Covered Plant Species.

C. If SJMSCP Covered Plant Species are identified and will not be fully avoided pursuant to provisions in Section 5.5.9, then seed collection may be undertaken by the JPA if the TAC recommends that such salvage has a high likelihood of resulting in a conservation benefit for the species and construction schedules permit, well in advance of project construction. Seed collection or other identified mitigation measures may occur immediately after or even before project approval with the consent of the landowner.

If SJMSCP Covered Species are identified by preconstruction surveys or are strongly suspected to be present based on the vegetation or habitat types present or if a Natural Land type is present, the JPA shall identify, in writing to the Plan Participant, the Incidental Take Minimization Measures applicable to the project and attach these as conditions of project approval per the procedure described in 5.2.1. All SJMSCP Covered Species identified by the JPA shall be recorded on both California Natural Diversity Database (CNDDB) and *SJMSCP GIS Database* forms, as needed.

When the JPA determines that an SJMSCP Covered Species does or may occur on a particular project site after completing the preceding process, the JPA will conduct a preconstruction survey prior to ground-disturbing activities to verify that the appropriate Incidental Take Minimization Measures have been implemented to protect individual SJMSCP Covered Species.

The following table shall be used to guide the timing of preconstruction surveys for SJMSCP Covered Plant Species when required as described in the preceding paragraphs. The blooming periods established in Table 5.2-1 represent the widest possible blooming season as compiled from: 1) *California Native Plant Society's Inventory of Rare and Endangered Vascular Plants of California*, February, 1994; 2) *CEQA-Defined Or Endangered Plants Currently Known to Occur Along the Waterways of the Sacramento-San Joaquin Delta*, B. Baba, CDFG Region 2, 1994; and 3) *A California Flora and Supplement* by Philip A. Munz; University of California Press, 1973 combined edition. All survey periods may be modified pursuant to the provisions of 5.2.2.5(B)(ii) and 5.2.2.5(C) or, based on updated scientific information evaluated and approved by the JPA with the by the JPA with the concurrence of the Permitting Agencies' representatives on the TAC.

TABLE 5.2-1
SURVEY WINDOWS FOR SJMSCP COVERED PLANT SPECIES

SJMSCP COVERED PLANT SPECIES	BLOOMING PERIOD/SURVEY PERIOD

Large flowered fiddle-neck (*Amsinckia grandiflora*)	April-May
Suisun Marsh Aster (*Aster lentus*)	Late May through November
Alkali milk-vetch (*Astragalus tener* var. *tener*)	March - June
Heartscale (*Atriplex cordulata*)	May - October
Brittlescale (*Atriplex depressa*)	May - October
Hoover's calycadenia (*Calycadenia hooverii*)	July - September
Bristly sedge (*Carex comosa*)	May - September
Succulent owl's clover (*Castilleja campestris* ssp. *succulenta* fmr. *Orthocarpus succulentus*)	April - May
Slough thistle (*Cirisium crassicaule*)	May - August
Mt. Hamilton coreopsis (*Coreopsis hamiltonii*)	March - May
Hospital canyon larkspur (*Delphinium californicum* ssp. *interius*)	April - June
Recurved larkspur (*Delphinium recurvatum*)	March - May
Delta button celery/Delta coyote thistle (*Eryngium racemosum*)	June - October
Diamond-petaled poppy/Diamond-petaled California Poppy (*Eschscholzia rhombipetala*)	March - June
Bogg's lake hedge hyssop (*Gratiola heterosepala*)	April - June
California hibiscus (*Hibiscus lasiocarpus*)	August-September
Red Bluff dwarf rush (*Juncus leiospermus* var. *leiospermus*)	March - May
Delta tule pea (*Lathyrus jeponsii* var. *jepsonii*)	May - September
Legenere (*Legenere limosa*)	May - June
Mason's lilaeopsis (*Lilaeopsis masonii*)	April - October
Delta mudwort (*Limosella subulata*)	May - August
Showy madia (*Madia radiata*)	March - May
Sanford's arrowhead (*Sagittaria sanfordii*)	May - October
Mad-dog skullcap (*Scutellaria lateriflora*)	May - September
Wright's trichocoronis (*Trichocoronis wrightii* var. *wrightii*)	May - September
Caper-fruited tropidocarpum (*Tropidocarpum capparideum*)	March - April
Greene's tuctoria (*Tuctoria greenei*)	May - July

5.2.2.5 Preconstruction Survey Methodologies

A. Preconstruction survey methodologies, for preconstruction surveys undertaken in compliance with Section 5.2.2.1(A, Band D) and 5.2.2.2 through 5.2.2.4, and addressing all SJMSCP Covered Species, except as provided in paragraph B, below, shall be of sufficient scope, duration, and

intensity to determine the need (or lack of a need) for attaching Incidental Take Minimization Measures as conditions of project approval, obtain a gross determination of habitats present on the site, any species-specific information as may be readily obtained, and the relation of the site to surrounding land uses. Specific methodologies shall be formulated by the JPA with the concurrence of the Permitting Agencies' representatives on the JPA's Technical Advisory Committee (TAC) within one year of issuance of the SJMSCP's associated state and federal permits. Methodologies shall be consistent with the SJMSCP's budget for conducting preconstruction surveys. While qualified biologists shall routinely perform preconstruction surveys, methodologies should avoid approaches which may actually harm or harass individual species thereby requiring time-consuming acquisitions of Section 10(a)(1)(A) permits for those conducting surveys except as otherwise required in 5.2.2.5(F) for the riparian brush rabbit. Methodologies developed will include provisions for assuming the presence of certain SJMSCP Covered Species under circumstances where timing of preconstruction surveys to coincide with the presence of the SJMSCP Covered Species may be prohibitively expensive or result in project delays except as otherwise provided in 5.2.2.5 (B-G) for full avoidance species (large flowered fiddleneck, succulent owl's clover, Greene's tuctoria, Delta button celery, diamond petaled poppy, showy madia, slough thistle, legenere, Hospital Canyon larkspur, Sanford's arrowhead, riparian brush rabbit, riparian woodrat, longhorn fairy shrimp, Conservancy fairy shrimp).

To ensure consistency over time, development of survey methodologies by the JPA and TAC as specified above shall include development of a standardized form to be used in conducting pre-construction surveys. While specific information to be collected is not designated by the Plan, the following data types are recommended:

1. Size of the project site;

2. Site configuration;

3. Adjacent land uses;

4. Habitat types present and acreages of each;

5. Presence of Covered Species on the site as determined by the SJMSCP GIS Database and preconstruction surveys;

6. Overall habitat quality;

7. Presence of exotic, non-native, or invasive vegetation;

8. Presence of roads and other disturbances on or adjacent to the project site;

9. Presence and distance to the nearest permanent Open Space;

10. Presence of any pest or predatory animals on the site; and

11. Any special habitat features on the site (e.g., wetlands, nest trees, dens or burrows, intermittent or perennial streams, unique plants etc.). The JPA and/or the relevant participating jurisdiction shall be informed of any Incidental Take Minimization needs identified, and such requirements shall be made a part of any development permits issued by

that jurisdiction, as appropriate (see Section 5.2.1).

B. Preconstruction surveys for the large-flowered fiddleneck (*Amsinckia grandiflora*); succulent owl's clover (*Castilleja campestris* ssp. *succulenta*) Greene's tuctoria (*Tuctoria greenei*), Delta button celery (*Eryngium racemosum*), Diamond-petaled California poppy (*Escholzia rhombipetala*), showy madia (*Madia radiata*), slough thistle (*Cirsium crassicaule*), legenere (*Legenere limosa*), Hospital Canyon larkspur (*Delphinium californicum* ssp. *interius*), and Sanford's arrowhead (*Sagittaria sandfordii*) conducted pursuant to Section 5.2.2.1(D) shall, in addition to the requirements in paragraph A,:

i. Be conducted in coordination with a site visit to one of the local reference populations of the species, if available (i.e., permission is required for entry onto private lands), to assess the appearance of the species, its preferred habitat, and if the population is blooming in the vicinity during preconstruction surveys. As of the Effective Date of the SJMSCP, reference sites exist in San Joaquin County for large-flowered fiddleneck (public and private land), diamond-petaled poppy (public land) and succulent owl's clover (public land), legenere and Sanford's arrowhead. No known reference sites exist for Greene's tuctoria, Delta button celery, showy madia, slough thistle or Hospital Canyon larkspur in San Joaquin County as of the Effective Date of the SJMSCP. In the absence of reference sites, the JPA may rely upon species information provided orally either: 1) by species experts consulted from the TAC or, in the absence of such experts, species experts contacted outside of the TAC; or 2) By reports received from area biologists regarding the activities (i.e., blooming periods) of the nearest known locations of Greene's tuctoria, Delta button celery, showy madia, slough thistle or Hospital Canyon larkspur located outside of San Joaquin County.

ii. Except as otherwise provided in this paragraph, surveys shall be conducted during the optimum blooming period for the species as indicated in Table 5.2-1. Up to three site visits will be undertaken to confirm that preconstruction surveys have been undertaken during the blooming period for this species. However, if preconstruction surveys are conducted at the same time as reference populations of this species are known to be blooming in the vicinity for populations inhabiting similar habitats with similar microclimates and the species is not found to be present on the proposed project site, then additional preconstruction survey visits are unnecessary. If approved by the JPA with the concurrence of the Permitting Agencies' representatives on the TAC, the timing of preconstruction surveys may be modified (i.e., the length of survey windows may be reduced) on a case-by-case based upon the TAC's assessment of the season's weather patterns (which may have affected blooming cycles) and the likelihood of species occurrences on a particular site given the specifics of the site's topography, existing land uses, aspect, slope, presence of competing vegetation, soils or other related factors which may have modified the blooming cycle for the species;

iii. If found, the surveyors shall prepare a detailed map indicating the location of the species; describe and photograph (color prints with negatives or color slides) the surrounding habitat including photo reference points, if available; describe adjacent hydrological conditions which may be affecting the population, if applicable; describe the species phenology and microhabitat; record an estimate of the number of individuals of the species per unit area; identify areas of high, medium and low density of the species; provide an estimate the acres of occupied habitat; describe potential threats to the population; and prepare and submit a California Native Species Field Survey Form and submit the form(s) to the Natural Diversity Database.

C. For all SJMSCP Covered Plants, if approved by the JPA with the concurrence of the Permitting Agencies' representatives on the TAC, the timing of preconstruction surveys for SJMSCP Covered Plants may be modified (i.e., the length of survey windows may be reduced) on a case-by-case based upon the TAC's assessment of the season's weather patterns (which may have affected blooming cycles) and the likelihood of species occurrences on a particular site given the specifics of the site's topography, existing land uses, aspect, slope, presence of competing vegetation, soils or other related factors which may have modified the blooming cycle for the species.

D. As required in Section 5.2.4.25, preconstruction surveys for the San Joaquin kit fox shall be conducted two calendar weeks to thirty calendar days prior to commencement of ground disturbance for projects located within the *Southwest Zone* or *Southwest/Central Transition Zone*. Surveys shall be conducted by qualified biologists. When surveys identify potential dens (potential dens are defined as burrows at least four inches in diameter which open up within two feet), potential den entrances shall be dusted for three calendar days to register track of any San Joaquin kit fox present.

E. Preconstruction surveys for the longhorn fairy shrimp and Conservancy fairy shrimp (potentially occurring within the *Southwest Zone*) shall be conducted in compliance with USFWS published survey protocols in effect at the time of the surveys.

F. Preconstruction surveys for the riparian brush rabbit shall be conducted in compliance with *Survey Methods for Riparian Brush Rabbits* (D.F. Williams, P.A. Kelly-San Joaquin Endangered Species Recovery Program) until and unless the USFWS publishes revised survey protocols. These preconstruction surveys require a special 10(a)(1)(A) permit for the individuals undertaking the surveys.

G. For all SJMSCP Covered Species, preconstruction surveys may be waived based upon a review by the TAC and concurrence by the Permitting Agencies if all potential suitable habitat for SJMSCP Covered Species will be fully avoided pursuant to Section 5.5.9.

H. For projects that impact vernal pool grasslands, preconstruction surveys shall collect information, as described in Section 5.9.4.12 that will be used to evaluate future adjustments of the vernal pool caps (e.g., total acreage of permitted Conversion permitted by the Take permits, annual limits on Conversion of vernal pool grasslands). Specifically, these surveys shall incorporate items from Section 5.9.4.12 (A)(1-6) in preconstruction survey protocols.

5.2.3 INCIDENTAL TAKE MINIMIZATION - OVERVIEW OF PROCESS

Section 10(a)(1)(B) of the Federal Endangered Species Act and Section 2081(b) of the California Endangered Species Act allows the Incidental Take of Covered Species only if Incidental Take Minimization Measures are adopted to minimize the impacts to Covered Species and impacts to Covered Species are mitigated. The following addresses Incidental Take Minimization Measures for all SJMSCP Covered Species. SJMSCP Section 5.5 describes additional measures which may be undertaken in lieu of SJMSCP compensation requirements and in addition to these Incidental Take Minimization Measures. These additional measures have an objective of entirely eliminating impacts of Take to SJMSCP Covered Species (i.e., "full avoidance").

5.2.3.1 Incidental Take Minimization Strategy and Expectations for All SJMSCP Covered Species

The success of the SJMSCP in minimizing impacts to SJMSCP Covered Species, through the implementation

of Incidental Take Minimization Measures, is based on the following expectations, presented in the order of their importance:

A. Project Proponents will provide sufficient time when planning for project review and construction schedules as necessary for the implementation of Incidental Take Minimization Measures adequate to avoid the actual Take of SJMSCP Covered Species for most projects undertaken pursuant to the SJMSCP except as otherwise provided in Section 5.2.3.2;

B. Incidental Take Minimization Measures will be identified at the earliest possible opportunity in the project review process by the JPA according to the schedule established in Section 5.2.1.

C. In addition to establishing applicable Incidental Take Minimization Measures, the JPA shall provide an option to a Project Proponent for entirely avoiding impacts to SJMSCP Covered Species and their habitat on the project site through project redesign pursuant to SJMSCP Section 5.5.9. Wherever complete avoidance of all impacts is successfully achieved on a project site pursuant to the requirements of SJMSCP Section 5.5.9, the SJMSCP Permittees are not responsible for providing compensation pursuant to the requirements of the SJMSCP.

D. Alternatively, the JPA shall pursue acquisition of Preserve lands which are consistent with the Preserve design criteria of the SJMSCP (Section 5.4.4) on project sites where high quality occupied habitat and/or where SJMSCP Covered Species of very limited distribution are present and landowners are willing sellers.

E. The JPA and Permittees will work with Project Proponents to ensure, and to document in accordance with Section 5.9.3.2, that identified Incidental Take Minimization Measures are properly implemented (or other alternatives are pursued as described in C and D above), as prescribed by the SJMSCP, to avoid the actual Take of SJMSCP Covered Species for most projects undertaken pursuant to the SJMSCP;

F. If the Project Proponent has implemented Incidental Take Minimization Measures in accordance with the SJMSCP, and SJMSCP Covered Species remain, reappear, or appear for the first time on the project site despite the proper implementation of Incidental Take Minimization Measures, then the following shall occur:

1. Relocation will be pursued at the discretion of the Permitting Agencies and only under rare circumstances according to the procedures and subject to the criteria established in Section 5.2.5.

2. When relocation is not undertaken (as is expected in the majority of cases), then killing of individuals and Conversion of occupied habitat of the SJMSCP Covered Species may occur unless otherwise prohibited by the SJMSCP.

G. Pursuant to the Migratory Bird Treaty Act (16 USC 703-711), it is unlawful at any time, by any means or in any manner to pursue, hunt, take, capture, kill, attempt to take, capture, or kill any migratory bird, any part, nest, or eggs of any such bird is defined as Take. All SJMSCP Covered Bird Species are subject to the Migratory Bird Treaty Act. Because the SJMSCP is based on the more stringent, federal standard for "Take" pursuant to the ESA which includes modification of habitat, Incidental Take Permits for SJMSCP Covered Bird

Species are included in the SJMSCP, to allow for the Conversion of habitat for SJMSCP Covered Bird Species with appropriate creation of compensatory habitat for these species. To fulfill the requirements of the Migratory Bird Treaty Act, however, the Incidental Take Minimization Measures of the SJMSCP for all SJMSCP Covered Bird Species must result in no Take, as Take is defined by the MBTA, of SJMSCP Covered Bird Species. The Incidental Take Minimization Measures in Section 5.2.4 have been designed to avoid Take, as Take is defined by the MBTA, of SJMSCP Covered Bird Species.

H. The golden eagle is the only SJMSCP Covered Species subject to the provisions of the Bald and Golden Eagle Protection Act (U.S.C. Sections 668-668d). Take of individual golden eagles is prohibited by the Bald and Golden Eagle Protection Act. However, because the SJMSCP is based on the more stringent, federal standard for "Take" pursuant to the ESA which includes modification of habitat, Incidental Take Permits for the golden eagle are included in the SJMSCP, to allow for the Conversion of habitat for the golden eagle with appropriate creation of compensatory habitat for this species. To fulfill the requirements of the Bald and Golden Eagle Protection Act, however, the Incidental Take Minimization Measures of the SJMSCP for the golden eagle have been designed to avoid Take, as Take is defined by the BGEPA, of golden eagles as described in Section 5.2.4.21.

5.2.3.2 Exceptions to Section 5.2.3.1

It is the intent of the JPA and the Permitting Agencies to encourage Project Proponents to retain biological features (e.g., nest trees, roosting sites, wetlands) in project design where the retention of such features may provide chances for the long-term survival of SJMSCP Covered Species at the short-term expense of the SJMSCP Covered Species. Therefore, where Project Proponents have agreed to a request by the JPA to retain biological features for the long-term, in the manner prescribed by the JPA, then the JPA and Permitting Agencies agree that the Project Proponent may proceed with the project's construction schedule even though that construction schedule may result in short-term disturbances (including Take) to SJMSCP Covered Species as a result of retaining biological features.

In addition, it is recognized that unanticipated conditions may arise which make it infeasible to comply with the Incidental Take Minimization strategy established in Section 5.2.3.1.

When a Project Proponent determines that it is infeasible to implement the Incidental Take Minimization Measures as established by the SJMSCP, then the Project Proponent may petition the JPA to consider granting an exception to the Incidental Take Minimization Measures. The Project Proponent shall include in his or her request a detailed description of the compelling reason or reasons for granting such a petition including all necessary documentation to support the request and describing what factors caused the Project Proponent inability to comply with the Incidental Take Minimization Measure or measures.

The JPA may amend or suspend some or all Incidental Take Minimization Measures, with the concurrence of the Permitting Agencies' representatives on the TAC, for a particular project based upon the following findings:

1. It is not possible to implement the Incidental Take Minimization Measures (e.g., the landowner does not own land on one side of a stream and therefore cannot provide 200' buffers on both sides of a stream); and

2. The proposed alternative Incidental Take Minimization Measure(s) reduces the effects of

Take at least as much as or more than the SJMSCP's established Incidental Take Minimization Measure(s); or

3. The proposed alternative(s) provide greater chances for the long-term survival of an SJMSCP Covered Species at the expense of limited, short-term biological losses (e.g., retaining a nest tree on a construction site rather than removing the nest tree resulting in reduced fledgling success during the project construction phase, but producing multiple generations of successful fledglings in the nest tree over the long-term); or

4. The provisions of Section 5.2.2.5(B)(ii) or 5.2.2.5(C) apply.

Failure to plan ahead on the part of the Project Proponent, when such planning was within the control of the Project Proponent, shall not be grounds for granting an exception under these provisions.

All exceptions granted for Incidental Take Minimization Measures pursuant to this Section also shall be reported in the SJMSCP Annual Report to the Permitting Agencies as described in Section 5.9.1.

5.2.4 INCIDENTAL TAKE MINIMIZATION MEASURES FOR SJMSCP COVERED SPECIES RECEIVING INCIDENTAL TAKE COVERAGE PURSUANT TO ESA AND CESA AND MITIGATION MEASURES FOR SJMSCP COVERED SPECIES RECEIVING CEQA COVERAGE

5.2.4.1 Valley Elderberry Longhorn Beetle (VELB)

In areas with elderberry bushes, as indicated by the *SJMSCP Vegetation Maps* or per a preconstruction survey identification or other sources indicated in Section 5.2.2.3, the following shall occur:

A. If elderberry shrubs are present on the project site, a setback of 20 feet from the dripline of each elderberry bush shall be established.

B. Brightly colored flags or fencing shall be placed surrounding elderberry shrubs throughout the construction process.

C. For all shrubs without evidence of VELB exit holes which cannot be retained on the project site as described in A and B, above, the JPA shall, during preconstruction surveys, count all stems of 1" or greater in diameter at ground level. Compensation for removal of these stems shall be provided by the JPA within SJMSCP Preserves as provided in *SJMSCP Section 5.5.4(B)*.

D. For all shrubs with evidence of VELB exit holes, the JPA shall undertake transplanting of elderberry shrubs displaying evidence of VELB occupation to VELB mitigation sites during the dormant period for elderberry shrubs (November 1 - February 15). For elderberry shrubs displaying evidence of VELB occupation which cannot be transplanted, compensation for removal of shrubs shall be as provided in *SJMSCP Section 5.5.4 (C)*.

5.2.4.2 Moestan and Molestan Blister Beetle

The biology of these species is poorly known, but the species are presumed to be extant and may be discovered in annual grasslands, foothill woodlands or saltbush (Atriplex) scrub which remain in patches within the historical occupation site of these species. Therefore, if discovered on a project site and prior to ground disturbance, Incidental Take Minimization Measures shall be formulated by the TAC and approved by the JPA with the concurrence of the Permitting Agencies' representatives on the TAC in accordance with the SJMSCP's Adaptive Management Plan (Section 5.9.4).

5.2.4.3 Ciervo Aegialian Scarab Beetle

This species is presumed to be extirpated, because its habitat, sand dunes, have been destroyed in the County. However, if rediscovered on a project site and prior to ground disturbance, Incidental Take Minimization Measures shall be formulated by the TAC and approved by the JPA with the concurrence of the Permitting Agencies' representatives on the TAC in accordance with the SJMSCP's Adaptive Management Plan (Section 5.9.4).

5.2.4.4 Vernal Pool Plants and Vernal Pool Invertebrates

Full avoidance of succulent owl's clover, legenere, Greene's tuctoria, longhorn fairy shrimp and Conservancy fairy shrimp is required by the SJMSCP in accordance with the full avoidance measures in Section 5.5.9. For all other vernal pool plants and vernal pool invertebrates:

A. Filling vernal pools shall be delayed until pools are dry and samples from the top layer of vernal pools soils are collected. Soil collections shall be sufficient to include a representative sample of plant and animal life present in the pools by incorporating seeds, cysts, eggs, spores and similar inoculum.

B. Collected soils shall be dried and stored in pillow cases labeled with the date and location of soils collected. Soils will be deposited with the JPA. The JPA shall retain the soils in a cool, dry area and shall be responsible for providing soils to vernal pool construction managers for inoculating newly created vernal pools on Preserve lands.

C. Preconstruction surveys, conducted in compliance with U.S. Fish and Wildlife Service protocols [as required in Section 5.2.2.5(E)] approved and in place at the time the surveys are conducted, shall be conducted to determine the presence or absence of Conservancy and/or longhorn fairy shrimp within vernal pools or other wetlands located southwest of I-580 in the *Southwest Zone* unless avoidance of vernal pools and/or wetlands is achieved in compliance with SJMSCP Section 5.5.9.

5.2.4.5 California Tiger Salamander and Western Spadefoot Toad in Association with Projects that Require a Permit Pursuant to Section 404 of the Federal Clean Water Act

Incidental Take Minimization Measures apply to known California tiger salamander occurrences. All required minimization measures will be prescribed through technical assistance provided to the U.S. Army Corps of Engineers by the U.S. Fish and Wildlife Service of Nationwide and standard permitting within the SJMSCP Permit Area, concurrent with formal consultations conducted for listed vernal pool species, or through the JPA with the concurrence of the Permitting Agencies' representatives on the TAC. The approach to impact minimization measures outlined in this section of the SJMSCP for California tiger salamander will provide the framework for Corps 404 permit streamlining described further in SJMSCP Section 5.6.1. Specific measures for impact minimization will be based on the framework provided in the SJMSCP. The

JPA intends that the SJMSCP will provide an option for project applicants to meet some or all of the compensation requirements assessed as part of the 404 regulatory process for California tiger salamander, should this species become federally listed.

The measures will be based on the need to avoid and minimize impacts to breeding, feeding, and sheltering behaviors of California tiger salamander (See SJMSCP Chapter 2), and will include, but not be limited to, consideration of the following: a) effects to aquatic habitat, including retaining pools and maintaining appropriate pool hydrology to enable successful metamorphosis of larvae to occur, but which does not foster non-native aquatic predators; b) retention of small mammal burrows and other suitable estivation habitat (e.g., underground holes, cracks, or niches) in adjacent uplands; c) maintenance of open habitat between breeding ponds and estivation sites (e.g., roads and other linear barriers) can increase mortality or even prevent migrations and dispersal significantly increasing harm to and mortality of salamanders); d) siting replacement wetland habitat, whenever possible, within approximately 1.5 miles of other known breeding sites.

In potential California tiger salamander habitat, projects shall survey according to the current protocol approved by the TAC and the Permitting Agencies. If salamanders are detected, Incidental Take Minimization Measures shall be applied.

5.2.4.6 California Tiger Salamander, Western Spadefoot Toad - in Association with Projects that Do Not Require a Federal Clean Water Act Section 404 Permit

To minimize impacts and Take of California tiger salamander, the following measures should be implemented for SJMSCP Covered Activities not requiring a Federal Clean Water Act Section 404 Permit:

A. Retain known breeding sites.

B. In potential California tiger salamander habitat, projects shall survey according to the current protocol approved by the TAC and the Permitting Agencies' representatives on the TAC. If salamanders are detected, Incidental Take Minimization Measures shall be applied.

C. If a proposed project intends to eliminate aquatic habitat (including wetlands, ponds, springs and other standing water sources), and create a new, on-site habitat, then the newly created habitat shall be created and filled with water prior to dewatering and destroying the pre-existing habitat. Dewatering and relocation of aquatic habitats on-site should occur when the water source is dry under natural conditions, or otherwise outside of the full breeding season for tiger salamanders (December to June) to allow larvae to metamorphose and migrate to upland habitat.

D. If a proposed project intends to eliminate aquatic habitat including wetlands, ponds, springs and other standing water sources, and will not create a new, on-site habitat, then dewatering should occur prior to commencement of construction and other Site Disturbing Activities. Dewatering and relocation of aquatic habitats should occur outside of the time period when adult salamanders are breeding (approximately December to February).

E. Apply those other measures that are utilized to minimize impacts and Take of the California tiger salamander that are developed as described in 5.2.4.5 above. Those other measures will address: a) effects to aquatic habitat, including retaining pools and maintaining appropriate pool hydrology to enable successful metamorphosis of larvae to occur, but which does not foster non-native aquatic predators; b) retention of small mammal burrows and other suitable

estivation habitat (e.g., underground holes, cracks, or niches) in adjacent uplands; c) maintenance of open habitat between breeding ponds and estivation sites (e.g., roads and other linear barriers can increase mortality or even prevent migrations and dispersal significantly increasing harm to and mortality of salamanders); d) siting replacement wetland habitat, whenever possible, within approximately 1.5 miles of other known breeding sites.

5.2.4.7 Red-Legged Frogs and Foothill Yellow-Legged Frogs

Red-legged frogs and foothill yellow-legged frogs occur in the creeks and wetlands in foothill areas. Red-legged frogs and foothill yellow-legged frogs do not occur on the valley floor. Therefore, the following Incidental Take Minimization Measures apply to the eastern foothills (primarily in the *Vernal Pool Zone*) and the *Southwest Zone* only where new development is proposed on parcels with creeks, rivers or wetlands, especially ponds:

A. A 300 foot setback, incorporating both riparian vegetation and uplands, shall be provided on both sides of creeks and on all sides of wetlands (for a total of 600 feet in setbacks) occupied by red-legged frogs or yellow-legged frogs identified through pre-construction surveys conducted by the JPA or documented in the *SJMSCP GIS Database*. These 300' setbacks shall be measured horizontally from the top of the bank and shall extend the entire length of the stream (or other linear wetlands) within the boundaries of the project site. These setbacks may be reduced by the TAC with the concurrence of the Permitting Agencies' representative on the TAC if the reduction: 1) does not affect habitat (e.g., the stream becomes piped and travels underground) or 2) the reduction will not result in an adverse impact to the species or reduction in the biological values of the habitat. Setbacks shall maintain existing vegetation free of disturbance and be free of new construction, new wells, storage or parking of equipment or materials, and other activities which compact or disturb soils or vegetation or which could introduce contaminants into the aquatic habitat. Setbacks shall be delineated by flagging or brightly colored temporary fencing during the construction process. Setbacks shall be indicated on final maps and include a map note referencing prohibitions within the setbacks. For entitlements which do not include a map, the condition shall be enforced through the recordation of an easement referencing prohibitions within the setback. The JPA may approve alternative methods of enforcing the provisions of the setback with the concurrence of the Permitting Agency representatives on the TAC.

B. Water quality within creeks and wetlands inhabited by red-legged frogs or foothill yellow-legged frogs shall be maintained through implementation of appropriate erosion control measures to reduce siltation and contaminated runoff from project sites (e.g., by maintaining vegetation within buffers and/or through the use of hay bales, filter fences, vegetative buffer strips, or other accepted equivalents).

C. Construction and other ground disturbances shall be prohibited within established setbacks. The use of insecticides, herbicides, rodenticides and pesticides within established setbacks shall occur in accordance with U.S. Environmental Protection Agency guidelines (Appendix A) addressing the use of these materials in occupied California red-legged frog habitat and, if applicable, any additional requirements as established by the San Joaquin County Agricultural Commissioner.

D. All on-site construction personnel shall be given instruction regarding the presence of listed species and the importance of avoiding impacts to these species and their habitats.

E. Setbacks shall be marked by brightly colored fencing or flagging throughout the construction process.

F. Setbacks shall be permanently preserved as recorded easements. Easements shall be indicated on recorded maps, whenever projects involve parcel or subdivision maps.

Proposals by Project Proponents to implement either of the following Incidental Take Minimization Measures requires the review and approval of the JPA with the concurrence of the Permitting Agencies' representatives on the TAC:

G. If a proposed project intends to eliminate aquatic habitat including wetlands, ponds, springs and other standing water sources, and create a new, on-site habitat, then the newly created habitat shall be created and filled with water prior to dewatering and destroying the pre-existing habitat. Dewatering and relocation of aquatic habitats should occur outside of the breeding season for red-legged frogs (approximately January through May) and foothill yellow-legged frogs (approximately March through May) when this schedule can be accommodated without resulting in project delays.

H. If a proposed project intends to eliminate aquatic habitat including wetlands, ponds, springs and other standing water sources, and will not create a new, on-site habitat, then dewatering should occur prior to commencement of construction and other Site Disturbing Activities. Dewatering and relocation of aquatic habitats should occur outside of the breeding season for red-legged frogs (approximately January through May) and foothill yellow-legged frogs (approximately March through May) when this schedule can be accommodated without resulting in project delays.

Pursuant to Section 5.5.5, SJMSCP Preserve lands acquired to offset impacts to the red-legged frog or yellow-legged frog must have occupied habitat for the red-legged frog or yellow-legged frog of at least equal habitat value as determined by the JPA with the concurrence of the Permitting Agencies' representatives on the TAC.

5.2.4.8 Giant Garter Snake

A. Full avoidance of giant garter snake known occupied habitat is required in compliance with Section 5.5.9 (C) for the following SJMSCP Covered Activities with the potential to adversely affect the GGS and which have not been mapped: golf courses; religious assembly; communications services; funeral; internment services; public services - police, fire and similar; projects impacting channel or tule island habitat; major impact projects including landfills, hazardous waste facilities, correctional institutions and similar major impact projects; recreational trails and campgrounds, recreational outdoors sports clubs; utility services, museums and similar facilities. Known occupied habitat for the giant garter snake is that area west of I-5 on Terminous Tract, Shin Kee Tract, White Slough Wildlife Area, and Rio Blanco Tract. New sites identified during the life of the SJMSCP as confirmed habitat sites for the giant garter snake shall be considered known occupied sites for the purposes of this section.

B. For areas with potential giant garter snake habitat, the following is required. Potential GGS habitat elements are described in SJMSCP Section 2.2.2.2 and exist in the *Primary Zone of the Delta* and the Central Zone contiguous with known occupied habitat in the White Slough area north to the San Joaquin/Sacramento County line and south to Paradise Cut; in the Central Zone east of Stockton in

Duck Creek, Mormon Slough, Stockton Diverting Canal, Little John's Creek, Lone Tree Creek, and French Camp Slough (wherever habitat elements are present); and the Southern Centerl Zone and Southwest/ Central Transition Zone including the area east of J4 from the Alameda-San Joaquin County Line to Tracy and area south of Tracy and east of Interstate 580 to the east edge of Agricultural Habitat Lands east of the San Joaquin River.

1. Construction shall occur during the active period for the snake, between May 1 and October 1. Between October 2nd and April 30th, the JPA, with the concurrence of the Permitting Agencies' representatives on the TAC, shall determine if additional measures are necessary to minimize and avoid take.

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

3. 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.

4. 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.

5. 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.

6. 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.

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

8 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.

9. 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 superceded by the SJMSCP's mitigation ratios).

5.2.4.9 San Joaquin Whipsnake, California Horned Lizard

These species are of very limited distribution within the County, primarily isolated locations outside of anticipated development areas within the *Southwest Zone*. Therefore, if discovered on a project site and prior to ground disturbance, Incidental Take Minimization Measures shall be formulated by the TAC and approved by the JPA with the concurrence of the Permitting Agencies' representatives on the TAC in accordance with the SJMSCP's Adaptive Management Plan (Section 5.9.4).

5.2.4.10 Pond Turtles

When nesting areas for pond turtles are identified on a project site, a buffer area of 300 feet shall be established between the nesting site (which may be immediately adjacent to wetlands or extend up to 400 feet away from wetland areas in uplands) and the wetland located near the nesting site. These buffers shall 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).

5.2.4.11 Swainson's Hawk

The Project Proponent has the option of retaining known or potential Swainson's hawk nest trees (i.e., trees that hawks are known to have nested in within the past three years or trees, such as large oaks, which the hawks prefer for nesting) or removing the nest trees.

If the Project Proponent elects to retain a nest tree, and in order to encourage tree retention, the following Incidental Take Minimization Measure shall be implemented during construction activities:

> If a nest tree becomes occupied during construction activities, then all construction activities shall remain a distance of two times the dripline of the tree, measured from the nest.

If the Project Proponent elects to remove a nest tree, then nest trees may be removed between September 1 and February 15, when the nests are unoccupied.

These Incidental Take Minimization Measures are consistent with the provisions of the Migratory Bird Treaty Act as described in Section 5.2.3.1(G).

5.2.4.12 California Black Rail

A. Prohibit construction or similar activities on channel or tule islands (I,I2), fresh emergent wetlands (W7), and arroyo willow thickets (R4), within the Primary Zone of the Delta until a preconstruction survey determines that the island is unoccupied by the California black rail.

B. In cases where project approvals may result in an increase in boating or jet skiing near known breeding sites for this species during the breeding season (e.g., proposals including new marinas), a condition of project approval shall be attached to require the location of the new marinas no closer than 200 feet from known breeding site when such sites are or have been occupied by breeding California black rails within the past three years. In addition, approaches into and out of new marinas shall be posted by the Project Proponent (as a condition of project approval) or, if otherwise designated by law, by a local, state or federal agency (e.g., the Division of Boating and Waterways)

"no wake speed" within 300 feet of occupied breeding sites for the California black rail during breeding season. Information related to the breeding season for California black rails is sparse, but the breeding season for the California black rail is believed to extend from February 1st through August 30th. Therefore, requirement for "no wake speed" into and out of new marinas due to the presence of breeding California black rails is not required from September 1 through January 30th.

These Incidental Take Minimization Measures are consistent with the provisions of the Migratory Bird Treaty Act as described in Section 5.2.3.1(G).

5.2.4.13 Bank Swallow and Yellow-Billed Cuckoo

If the JPA discovers nesting bank swallows or nesting yellow-billed cuckoos during preconstruction surveys or from other sources, construction avoidance areas shall be enforced for a distance of 300 feet from the nest sites until young bank swallows or yellow-billed cuckoos have fledged and left the nesting site.

These Incidental Take n Measures are consistent with the provisions of the Migratory Bird Treaty Act as described in Section 5.2.3.1(G).

5.2.4.14 Aleutian Canada Goose and Greater Sandhill Crane

Under normal conditions, the Aleutian Canada goose and greater sandhill crane are found foraging in fields that are flooded, newly disced, cut, or irrigated during the fall migration of waterfowl along the Pacific Flyway. These two species are highly mobile while they forage and can easily relocate to nearby foraging sites in the event of a disturbance to the foraging field. The risk of actually killing or harming (Taking) one of these species during SJMSCP Permitted Activities is therefore nearly non-existent. The threat to these species is more closely associated with removing habitat in sufficient quantities to create adverse impacts to populations of these species--an impact addressed by the SJMSCP through acquisition and enhancements of habitat (see Sections 5.4.4 and 5.4.6). Therefore, Incidental Take Minimization Measures for the Aleutian Canada goose and the greater sandhill crane are not included in the SJMSCP and this is considered to be consistent with the provisions of the Migratory Bird Treaty Act.

5.2.4.15 Burrowing Owls

The presence of ground squirrels and squirrel burrows are attractive to burrowing owls. Burrowing owls may therefore be discouraged from entering or occupying construction areas by discouraging the presence of ground squirrels. To accomplish this, the Project Proponent should prevent ground squirrels from occupying the project site early in the planning process by employing one of the following practices:

A. The Project Proponent may plant new vegetation or retain existing vegetation entirely covering the site at a height of approximately 36" above the ground. Vegetation should be retained until construction begins. Vegetation will discourage both ground squirrel and owl use of the site.

B. Alternatively, if burrowing owls are not known or suspected on a project site and the area is an unlikely occupation site for red-legged frogs, San Joaquin kit fox, or tiger salamanders:

The Project Proponent may disc or plow the entire project site to destroy any ground squirrel burrows. At the same time burrows are destroyed, ground squirrels should be removed through one of the following approved methods to prevent reoccupation of the

project site. Detailed descriptions of these methods are included in Appendix A, *Protecting Endangered Species, Interim Measures for Use of Pesticides in San Joaquin County*, dated March, 2000:

1. **Anticoagulants.** Establish bait stations using the approved rodenticide anticoagulants Chlorophacinone or Diphacinone. Rodenticides shall be used in compliance with U.S. Environmental Protection Agency label standards and as directed by the San Joaquin County Agricultural Commissioner.

2. **Zinc Phosphide.** Establish bait stations with non-treated grain 5-7 calendar days in advance of rodenticide application, then apply Zinc Phosphide to bait stations. Rodenticides shall be used in compliance with U.S. Environmental Protection Agency label standards and as directed by the San Joaquin County Agricultural Commissioner.

3. **Fumigants.** Use below-ground gas cartridges or pellets and seal burrows. Approved fumigants include Aluminum Phosphide (Fumitoxin, Phostoxin) and gas cartridges sold by the local Agricultural Commissioner's office. NOTE: Crumpled newspaper covered with soil is often an effective seal for burrows when fumigants are used. Fumigants shall be used in compliance with U.S. Environmental Protection Agency label standards and as directed by the San Joaquin County Agricultural Commissioner.

4. **Traps.** For areas with minimal rodent populations, traps may be effective for eliminating rodents. If trapping activities are required, the use of , shall be consistent with all applicable laws and regulations.

If the measures described above were not attempted or were attempted but failed, and burrowing owls are known to occupy the project site, then the following measures shall be implemented:

C. During the non-breeding season (September 1 through January 31) burrowing owls occupying the project site should be evicted from the project site by passive relocation as described in the California Department of Fish and Game's Staff Report on Burrowing Owls (Oct., 1995)

D. During the breeding season (February 1 through August 31) occupied burrows shall not be disturbed and shall be provided with a 75 meter protective buffer until and unless the TAC, with the concurrence of the Permitting Agencies' representatives on the TAC; or unless a qualified biologist approved by the Permitting Agencies 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 can be destroyed.

These Incidental Take Minimization Measures are consistent with the provisions of the Migratory Bird Treaty Act as described in Section 5.2.3.1(G).

5.2.4.16 Colonial Nesting Birds (Tricolored Blackbird, Black-Crowned Night Heron, Great Blue Heron)

Acquisition of colonial nesting sites for these species is a high priority of the SJMSCP. Project Proponents shall be informed of avoidance measures which eliminate compensation requirements for disturbance of colonial nesting areas in project design, as described in Section 5.5.9. If the Project Proponent rejects acquisition and avoidance, pursuant to Section 5.5.9, then the following Incidental Take Minimization Measure shall apply:

> 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.

These Incidental Take Minimization Measures are consistent with the provisions of the Migratory Bird Treaty Act as described in Section 5.2.3.1(G).

5.2.4.17 Ground Nesting or Streamside/Lakeside Nesting Birds (Northern Harrier, Horned Lark, Western Grebe, Short-Eared Owl)

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 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.

These Incidental Take Minimization Measures are consistent with the provisions of the Migratory Bird Treaty Act as described in Section 5.2.3.1(G).

5.2.4.18 Birds Nesting in Isolated Trees or Shrubs Outside of Riparian Areas (Sharp-Shinned Hawk, Yellow Warbler, Loggerhead Shrike

A setback of 100 feet 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.

These Incidental Take Minimization Measures are consistent with the provisions of the Migratory Bird Treaty Act as described in Section 5.2.3.1(G).

5.2.4.19 Birds Nesting Along Riparian Corridors (Cooper's Hawk, Yellow-Breasted Chat, Osprey, White-Tailed Kite)

A. For white-tailed kites, preconstruction surveys shall investigate all potential nesting trees on the project site (e.g., especially tree tops 15-59 feet above the ground in oak, willow, eucalyptus, cottonwood, or other deciduous trees), during the nesting season (February 15 to September 15) whenever white-tailed kites are noted on site or within the vicinity of the project site during the nesting season.

B. For the Cooper's hawk, yellow-breasted chat, osprey and white-tailed kite, a setback of 100

feet 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.

These Incidental Take Minimization Measures are consistent with the provisions of the Migratory Bird Treaty Act as described in Section 5.2.3.1(G).

5.2.4.20 Bell's Sage Sparrow, Snowy Egret, Prairie Falcon, American White Pelican, Double-Crested Cormorant, White-Faced Ibis, Long-billed Curlew

These species either establish nests outside of anticipated development areas or are currently unknown to nest within the County. However, if a nest for one of these species is discovered on a project site, Incidental Take Minimization Measures shall be formulated prior to ground disturbance by the TAC and approved by the JPA with the concurrence of the Permitting Agencies' representatives on the TAC in accordance with the SJMSCP's Adaptive Management Plan (Section 5.9.4).

These Incidental Take Minimization Measures are consistent with the provisions of the Migratory Bird Treaty Act as described in Section 5.2.3.1(G).

5.2.4.21 Golden Eagle

When a site inspection indicates the presence of a nesting golden eagle, a setback of 500 feet from the nesting area shall be established and maintained during the nesting season (normally approximately February 1 - June 30) 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.

These Incidental Take Minimization Measures are consistent with the provisions of the Migratory Bird Treaty Act as described in Section 5.2.3.1(G) and are consistent with the provisions of the Bald and Golden Eagle protection act as described in Section 5.2.3.1(H).

5.2.4.22 Ferruginous Hawk, Mountain Plover, Merlin, Long-Billed Curlew

These species currently do not nest in the County and are not expected to nest in the County over the life of the Plan. Therefore, in the highly unlikely event that one of these species is found nesting on a project site, Incidental Take Minimization Measures shall be formulated prior to ground disturbance by the TAC and approved by the JPA with the concurrence of the Permitting Agencies' representatives on the TAC in accordance with the SJMSCP's Adaptive Management Plan (Section 5.9.4).

Incidental Take Minimization Measures adopted pursuant to Section 5.9.4 shall be consistent with the provisions of the Migratory Bird Treaty Act as described in Section 5.2.3.1(G)

5.2.4.23 Riparian Brush Rabbit

A. Occupied Habitat. Kill of individual riparian brush rabbits and Conversion of occupied habitat for the riparian brush rabbit is prohibited by the SJMSCP unless the provisions of SJMSCP Section 5.5.2.7 have been met. Full avoidance of the riparian brush rabbit is required in areas of known occupied riparian brush rabbit habitat in accordance with Section 5.5.9(I). Known occupied habitat for the riparian brush rabbit is: the vegetation types R, R2, R3, R4, R5, S, SG, D, W, W2, W3, W4, W5 and W9 (unlined) located within Caswell State Park and along the adjoining Stanislaus River; and surrounding Stewart Tract including Paradise Cut and the adjacent Union Pacific Railroad Company right-of-way on Stewart Tract, Old River adjacent to Stewart Tract, and the San Joaquin River as it bounds Stewart Tract. Additional populations of the riparian brush rabbit identified after the Effective Date of the SJMSCP Permits by the JPA or the Permitting Agencies shall become known occupied riparian brush rabbit habitat.

B. Potential Habitat. Conversion of Potential habitat for the riparian brush rabbit is prohibited by the SJMSCP unless: 1) the provisions of Paragraph C (below) apply; 2) the provisions of SJMSCP Section 5.5.2.7 have been met; or 3) a survey, conducted pursuant to the protocol established in *Survey Methods for Riparian Brush Rabbits* (by D.F. Williams and P.A. Kelly - San Joaquin Valley Endangered Species Recovery Planning Program) is undertaken and proves absence for this species. If absence is established by the survey, then the incidental take minimization measures for riparian habitat, established in SJMSCP Section 5.2.4.31 shall apply.

Potential riparian brush rabbit habitat is: the vegetation types R, R2, R3, R4, R5, S, SG, D, W, W2, W3, W4, W5 and W9 (unlined) located along the Stanislaus River downstream of Highway 99 to the junction with the San Joaquin River and riparian habitat along the San Joaquin River downstream of the mouth of the Stanislaus River north to and including Tom Paine Slough and Paradise Cut to the Southern Pacific railroad right-of-way.

C. Limited Take. Incidental Take of up to three acres of potential riparian brush rabbit habitat may occur pursuant to the SJMSCP for projects which meet all of the following criteria:

A. SJMSCP Covered Activities excluding residential, commercial or industrial development and aggregate mining.
B. Impact less than .25 acres of habitat on a per-project basis; and
C. Result in no harm, injury, or harassment of individual brush rabbits

5.2.4.24 Riparian Woodrat

A. Occupied Habitat. Kill of individual riparian woodrats and Conversion of occupied habitat for the riparian woodrat is prohibited by the SJMSCP unless the provisions of SJMSCP Section 5.5.2.7 have been met. Full avoidance of the riparian woodrat is required in areas of known occupied riparian brush rabbit habitat in accordance with Section 5.5.9(I). Occupied habitat for the riparian woodrat includes the vegetation types R, R2, R3, R4, R5, S, SG, D, W, W2, W3, W4, W5 and W9 (unlined) surrounding Caswell Park along the Stanislaus River and extending along the Stanislaus River west from Caswell Park to the confluence of the Stanislaus River with the San Joaquin River in San Joaquin County. Additional populations of the riparian woodrat identified after the Effective Date of the SJMSCP Permits by the JPA or the Permitting Agencies shall become known occupied riparian woodrat habitat.

B. Potential Habitat. Conversion of Potential habitat for the riparian woodrat is prohibited by the SJMSCP unless: 1) the provisions of Paragraph C (below) apply; 2) the provisions of SJMSCP

Section 5.5.2.7 have been met; or 3) a survey, conducted pursuant to the protocol established in *Survey Methods for Riparian Brush Rabbits* (by D.F. Williams and P.A. Kelly - San Joaquin Valley Endangered Species Recovery Planning Program) is undertaken and proves absence for this species. If absence is established by the survey, then the incidental take minimization measures for riparian habitat, established in SJMSCP Section 5.2.4.31 shall apply.

Potential habitat for the riparian woodrat is the same as that for the riparian brush rabbit.

C. Limited Take. Incidental Take of up to three acres of potential riparian woodrat habitat may occur pursuant to the SJMSCP for projects which meet all of the following criteria:

A. SJMSCP Covered Activities excluding residential, commercial or industrial development and aggregate mining.
B. Impact less than .25 acres of habitat on a per-project basis; and
C. Result in no harm, injury or harassment of individual riparian woodrats

5.2.4.25 San Joaquin Kit Fox

Preconstruction surveys shall be conducted two calendar weeks to thirty calendar days prior to commencement of ground disturbance for projects located within the *Southwest Zone* or *Southwest/Central Transition Zone*. Surveys shall be conducted by qualified biologists. When surveys identify potential dens (potential dens are defined as burrows at least four inches in diameter which open up within two feet), potential den entrances shall be dusted for three calendar days to register track of any San Joaquin kit fox present. If no San Joaquin kit fox activity is identified, potential dens may be destroyed. If San Joaquin kit fox activity is identified, then dens shall be monitored to determine if occupation is by an adult fox only or is a natal den (natal dens usually have multiple openings). If the den is occupied by an adult only, the den may be destroyed when the adult fox has moved or is temporarily absent. If the den is a natal den, a buffer zone of 250 feet shall be maintained around the den until the biologist determines that the den has been vacated. Where San Joaquin kit fox are identified, the provisions of the U.S. Fish and Wildlife Service's published *Standardized Recommendations for Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance* shall apply (except that preconstruction survey protocols shall remain as established in this paragraph). These standards include provisions for educating construction workers regarding the kit fox, keeping heavy equipment operating at safe speeds, checking construction pipes for kit fox occupation during construction and similar low or no-cost activities.

It is possible that the Permitting Agencies could discover the San Joaquin kit fox within the eastern foothills of San Joaquin County, (this potential range in the eastern foothills would most likely coincide approximately with the boundaries of the *Vernal Pool Zone*, excluding that area of the *Vernal Pool Zone* located in the northern portion of San Joaquin County). San Joaquin kit fox also may move within the *Primary Zone of the Delta* west of Old River. The TAC shall work with the USFWS to prepare an abbreviated survey protocol for these areas in the *Vernal Pool Zone* and *Primary Zone of the Delta* within one year of issuance of SJMSCP Permits pursuant to SJMSCP Sections 5.2.2.1 through 5.2.2.4.

Protocols for conducting pre-construction surveys for the San Joaquin kit fox shall be updated in accordance

with the SJMSCP Adaptive Management Plan to reflect changes to the *Standardized Recommendations for Protection of the San Joaquin kit fox Prior to or During Ground Disturbance*.

5.2.4.26 American Badger, Ringtail Cat

If occupied dens are located on a project site for either of these species, then dens shall be monitored to determine if occupation is by an adult badger or ringtail only or is a natal den. If the den is occupied by an adult only the den may be destroyed when the adult has moved or is temporarily absent. If the den is a natal den, a buffer zone of 200 feet shall be maintained around the den until the JPA biologist determines that den has been vacated.

5.2.4.27 Berkeley Kangaroo Rat, San Joaquin pocket mouse

These species are located primarily in the Southwest Zone outside of anticipated development areas. However, if these species are discovered on a project site, Incidental Take Minimization Measures shall be formulated by prior to ground disturbance the TAC and approved by the JPA with the concurrence of the Permitting Agencies' representatives on the TAC in accordance with the SJMSCP's Adaptive Management Plan (Section 5.9.4).

5.2.4.28 Bats (All)

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

TABLE 5.2-2
OCCUPATION SITES AND NURSERY SEASONS FOR SJMSCP COVERED BATS

Bat Species	Preferred Occupation Site	Nursery Season
Greater western mastiff bat	Cliff or rock crevice (usual), tree or snag (occasionally)	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
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 (aka Townsend's western big-eared bat)	Cave, adit, cliff, rock crevice, structure, cistern, bridge	April - August

B. Seal hibernation sites, prior to the hibernation season (November through March) when hibernation sites are identified on the project site. Alternatively, grating may be installed as described in 5.5.9(E)(1).

C. When colonial roosting sites which are 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 pursuant to Section 5.2.3.2.

5.2.4.29 Plants

I. Complete avoidance of plant populations on site is required for the following plant species in accordance with the identified measures in Section 5.5.9(F):

Large-flowered fiddleneck, succulent owl's clover, legenere, Greene's tuctoria, diamond-petaled poppy, Sanford's arrowhead, Hospital Canyon larkspur, showy madia, Delta button celery, Slough thistle.

II If one of the following SJMSCP Covered Plant Species is identified by the JPA on a project site, the following mitigation measures are required:

A. For widely distributed plant species: Mason's lilaeopsis, California hibiscus, Suisun marsh aster, Delta tule pea, Delta mudwort:

Attempt acquisition. If the plant population is considered healthy by the JPA with the concurrence of the Permitting Agencies' representatives on the TAC, then the parcel owner shall be approached to consider selling a conservation easement including a buffer area as prescribed in Section 5.4.4 and sufficient to maintain the hydrological needs of the plants. Alternatively, the landowner may be approached to consider land dedication in-lieu of paying SJMSCP development fees. If the Project Proponent is not agreeable to acquisition , then compensation shall be as prescribed in SJMSCP Section 5.3.1.

B. For plants of moderate distribution: Bogg's lake hedge hyssop:

1. **Attempt acquisition.** If the plant population is considered healthy by the JPA with the concurrence of the Permitting Agencies' representatives on the TAC, then the parcel owner shall be approached to consider selling a conservation easement including a buffer area as

prescribed in Section 5.4.4 and sufficient to maintain the hydrological needs of the plants. Alternatively, the landowner may be approached to consider land dedication in-lieu of paying SJMSCP development fees. If the Project Proponent is not agreeable to acquisition, compensation shall be as prescribed in SJMSCP Section 5.3.1.

2. **Seed Collection.** If the landowner rejects acquisition , then the JPA, with the concurrence of the Permitting Agencies' representatives on the TAC, shall undertake seed collections from the populations prior to destruction if seed collection is determined to be feasible, beneficial and/or appropriate by the TAC.

C. For narrowly distributed plant species: Hoover's calycadenia, Red Bluff dwarf rush, bristly sedge, alkali milk vetch, heartscale, brittlescale, Mt. Hamilton coreopsis, mad-dog skullcap, Wright's trichocoronis, caper-fruited tropidocarpum, and recurved larkspur:

1. **Attempt acquisition.** If the plant population is considered healthy by the JPA with the concurrence of the Permitting Agencies' representatives on the TAC , then the parcel owner shall be approached to consider selling a conservation easement including a buffer area as prescribed in Section 5.4.4 and sufficient to maintain the hydrological and ecological (e.g., account for weed control, buffers, inclusion of pollinators) needs of the plants. Alternatively, the landowner may be approached to consider land dedication in-lieu of paying SJMSCP development fees.

2. **Consultation.** If the landowner rejects acquisition of the population, then the JPA shall, with the concurrence of the Permitting Agencies' representatives on the TAC, determine the appropriate mitigation measures (e.g., seed collection) for each plant population based upon the species type, relative health and abundance.

5.2.4.30 SJMSCP Covered Fish

Impacts to fish are addressed under the SJMSCP primarily through Incidental Take Minimization Measures; SJMSCP Permitted Activities are not expected to significantly alter habitats of SJMSCP Covered Fish Species

Incidental Take Minimization Measures for SJMSCP Covered Fish are the same as those included for protection of riparian habitats in SJMSCP Section 5.2.4.31, except that, pursuant to Section 5.7(5) for Aggregate Mining Activities, Project Proponents are required to consult with Permitting Agencies on a case-by-case basis during the SMARA permitting process to design minimization measures to reduce the effects of stranding of the SJMSCP Covered Fish Species during mining activities.

5.2.4.31 Riparian Habitats and Other Non-Vernal Pool Wetlands

For the purposes of implementing Incidental Take Minimization Measures, riparian habitats and "other non-vernal pool wetlands" shall be considered to be those habitats mapped on the *SJMSCP Vegetation Maps* as D (drainage ditch), R (Great Valley riparian forest), R2 (Great Valley Valley oak riparian forest), R3 (Great Valley cottonwood riparian forest), R4 (Arroyo willow thicket), S (Great Valley riparian scrub), S2 (Elderberry savannah), W (River or deep water channel - greater than 200 feet wide), W2 (Tributary stream - 100 to 200 feet wide), W3 (Creek - 20 to 100 feet wide), W4 (dead-end slough), W9 (Canal - if not cement lined), I (channel island), I2 (tule island and mud flat), W5 (freshwater lake or pond), W7 (freshwater

emergent wetland).

The compensation requirements of the SJMSCP shall be triggered when the project design disturbs portions of the project site located within 100 feet of the outer edge of the driplines of riparian vegetation. For the purposes of accounting pursuant to the Annual Report (Section 5.9.1), Open Space Conversion acreage subject to the SJMSCP shall be calculated from the point at which a development extends into the 100 foot buffer to the centerline of the subject drainage (other than a river). For rivers, lakes, or ponds, Incidental Take shall be calculated from the edge of the 100 foot buffer zone to the edge of the riparian vegetation as it extends into the river, lake, or pond.

For projects affecting riparian habitats:

A. Require appropriate erosion control measures (e.g., hay bales, filter fences, vegetative buffer strips or other accepted equivalents) to reduce siltation and contaminated runoff from project sites.

B. Retain emergent (rising out of water) and submergent (covered by water) vegetation.

C. Retain vegetation as practical within the constraints of the proposed development as determined by the JPA with the concurrence of the Permitting Agencies' representatives on the TAC. Rapidly sprouting plants, such as willows, should be cut off at the ground line and root systems left in tact, when removal is necessary.

D. Locate roadways and other facilities perpendicular, rather than adjacent, to waterways to reduce the total riparian area disturbed wherever practical within the constraints of the proposed development as determined by the JPA with the concurrence of the Permitting Agencies' representatives on the TAC.

E. Locate bridge and road footings outside of high water zones and riparian habitats wherever practical within the constraints of the proposed development as determined by the JPA with the concurrence of the Permitting Agencies' representatives on the TAC.

F. Provide construction buffers of at least 100 feet throughout the construction process. Construction buffers of 300 feet (on both sides of riparian corridors, for a total of 600 feet) are required when the red-legged frog or foothill yellow-legged frog occupy the project site. These 300' setbacks shall be measured horizontally from the top of the bank and shall extend the entire length of the stream (or other linear wetlands) within the boundaries of the project site. These setbacks may be reduced by the TAC with the concurrence of the Permitting Agencies' representative on the TAC if the reduction: 1) does not affect habitat (e.g., the stream becomes piped and travels underground) or 2) the reduction will not result in an adverse impact to the species or reduction in the biological values of the habitat. This buffer area should be marked with stakes, fencing or other materials which will be visible to construction workers, including heavy equipment operators.

These buffers may be reduced on a case-by-case basis by the JPA with the concurrence of the Permitting Agencies' representatives on the TAC.

5.2.5 SPECIES RELOCATION

Relocation efforts often provide uncertain results, are frequently costly, and may result in project delays. Therefore, as described in Section 5.2.3.1(F), relocation will be used only in very rare circumstances and under the conditions and procedures described in the following sections.

5.2.5.1 Relocation Before Construction/Ground Disturbance Begins

If an SJMSCP Covered Species is identified by the JPA during a preconstruction survey before construction activities begin, the JPA shall, with the concurrence of the Permitting Agencies' representatives on the TAC, , determine whether the individual plants or animals shall be relocated to Preserves or other areas to minimize Incidental Take. The responsibility for relocating SJMSCP Covered Species from a project site shall be that of qualified biologists approved by the Permitting Agencies' representatives on the TAC or biologists already holding appropriate permits and working on behalf of the JPA.

The CDFG, or qualified biologists approved by the CDFG or biologists already holding appropriate permits, may relocate a non-federally-listed SJMSCP Covered Species at any time prior to ground disturbing activities. For federally-listed SJMSCP Covered Species, the CDFG, USFWS, or qualified biologists approved by the Permitting Agencies' representatives on the TAC, may relocate a federally-listed SJMSCP Covered Species prior to ground disturbing activities pursuant to authority to perform relocation of federally-listed SJMSCP Covered Species granted pursuant to the federal SJMSCP Permits. Property owners shall be notified of relocation efforts.

Relocation efforts involving SJMSCP Covered Bird Species shall be consistent with the Migratory Bird Treaty Act.

5.2.5.2 Relocation After Construction/Ground Disturbance Begins or is Completed

If an SJMSCP Covered Species is discovered after construction activities begin, or after construction is completed, the Project Proponent, project manager, or other interested persons immediately shall notify the JPA who, in turn shall notify CDFG's and USFWS's representatives on the TAC. These Permitting Agency TAC representatives, in consultation with the JPA, shall determine if relocation is necessary or beneficial pursuant to Sections 5.2.5.4 and 5.2.5.5 and, if required, identify a qualified biologist to undertake the relocation. Authority to perform relocations of federally-listed SJMSCP Covered Species is granted pursuant to the federal SJMSCP Permits. Property owners shall be notified of relocation efforts.

Relocation efforts involving SJMSCP Covered Bird Species shall be consistent with the Migratory Bird Treaty Act.

5.2.5.3 Non-Delay of Projects for Relocation

Neither the CDFG, USFWS, nor qualified biologists approved by these agencies (including biologists approved from the JPA) shall delay the start of or any subsequent project activity for more than 48 hours (two working days), from the time the Permitting Agencies' representatives on the TAC receive notification from the JPA to relocate an SJMSCP Covered Species unless additional time is granted by the Project Proponent. The CDFG and USFWS representatives on the TAC may, at any time, waive the option to relocate SJMSCP Covered Species from a project site.

5.2.5.4 Decision to Relocate a Species or Not to Relocate a Species

The ultimate decision to relocate or not to relocate a species shall be made by the JPA with the concurrence of the Permitting Agencies' representatives on the TAC. The decision shall be based upon the best scientific knowledge available including the following considerations:

A. The biological status of the species and the biological benefits or value to the species that would occur as a result of relocation, including whether or not relocated individuals would be likely to return to the site, or

B. The numbers of the species are extremely limited, or

C. The likelihood that a relocated species will survive in a new location, or

D. The availability of alternative, suitable, habitat for the species, or

E. The relative time and cost associated with the species relocation in comparison to the biological benefits realized, or

F. The existence of well-established techniques which predict success.

5.2.5.5 Examples of Possible Circumstances Under Which Relocation or Salvaging Efforts May be Undertaken

As described in Section 5.2.3.1(F), relocation will be considered only after properly implemented Incidental Take Minimization Measures have failed to remove SJMSCP Covered Species from a project site and Take is the only viable remaining option. The following is an example of when relocation efforts may be an appropriate option to Take:

Plants. If the parcel owner rejects offers to purchase a conservation easement or dedicate land in-lieu of fee payments, and the subject plant is not a full avoidance plant, then the following may be considered:

Seed collection from a representative sampling of the plant specimens. The JPA with the concurrence of the Permitting Agencies' representatives on the TAC shall either identify appropriate locations within SJMSCP Preserves to attempt to raise plants from seeds or appropriate agencies will be contacted and the seeds shall be given to those agencies for archival, educational, or experimental (i.e., attempting to grow the species) purposes. In all cases, prior to planting seeds from and SJMSCP Covered Plant Species which have been properly collected and stored uner the auspices of the JPA, the JPA shall consult with the TAC and the Permitting Agencies on a case-by-case basis to review the current information available regarding the subject species and follow the appropriate protocols for planting the seeds in appropriate areas.