

*Interstate 205/Lammers Road/West Eleventh Street  
Interchange Project*

*NES*



## **Natural Environment Study**

City of Tracy

San Joaquin County, California

10-SJ-205-PM2.6/R5.1

EA 10-0H9100

Project ID 10-0000-067

*February 2011*



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# Natural Environment Study

City of Tracy

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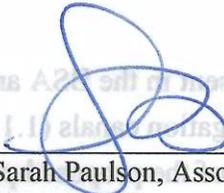
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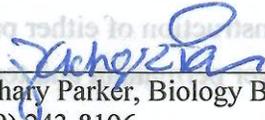
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# Interstate 205/Lammers Road Interchange Project Natural Environment Study (February 2011) Errata, September 2011

*Note: Where necessary in this errata sheet, omitted text is struck out and new or replaced text is underlined, to indicate specific changes to the original document.*

Alternative 1 was removed from consideration in August 2011 when it was determined not to be a geometrically viable alternative. Alternative 1 does not meet the interchanging spacing requirement per the Highway Design Manual Topic 501.3, “The minimum Interchange spacing shall be one mile urban areas, two miles in rural areas, and two miles between freeway-to-freeway interchanges and local street interchanges.” The available spacing between the existing partial Eleventh Street interchange and the proposed Lammers Road interchange would be only 0.8 mile. This deficiency was acknowledged and a mandatory design exception was sought. The exception was declined due to limited discussion regarding extenuating circumstances that prevented the alternative from achieving the required spacing and the existence of an alternative that did meet the spacing requirement (Alternative 5A).

Therefore the following changes are made:

**Cover, Title Page:** Change Post miles in title

~~PM2.6/R5.4~~PM2.5/R4.9

**Page 1, first paragraph:** Change text on third line

“auxiliary lane from ~~Post Mile 2.6 to R5.4~~ Post Mile 2.5 to R4.9 on I-205 . . . .”

**Throughout Document:** Disregard description of, analysis of, and reference to Alternative 1 throughout document.



**Interstate 205/Lammers Road Interchange Project  
Natural Environment Study (February 2011)  
Errata, February 2011**

Note: Omitted text is struck out. New or replaced text is underlined.

**Page 10:** The following changes are made to the first paragraph in the *Alternative 1-New Spread Diamond Interchange at Lammers Road Discussion*.

*Park and Ride Facilities.* 1-acre Park and Ride facilities would be provided in the vicinity of the project at the southeast ~~southwest~~ corner of the eastbound ramp intersection.

**Page 11:** The following changes are made to the second paragraph in the *Alternative 5A-Modified Eleventh Street Partial Cloverleaf Interchange* immediately following the list of bullets.

*Park and Ride Facilities.* One acre Park and Ride facilities would be provided in the vicinity of the proposed project at the ~~northwest~~ northeast corner of the Commerce Way and 11th Street intersection.



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## Summary

### ***Project Description***

Caltrans and the City of Tracy's proposed Interstate 205 (I-205)/Lammers Road/West Eleventh Street Interchange Project (proposed project) is located within the City of Tracy Sphere of Influence, just outside the city limits, in San Joaquin County. The proposed project would reconstruct or eliminate the existing interchange at 11th Street/I-205 to provide full ramp movements at a new location. The proposed project includes two build alternatives which focus on the various interchange alternatives being considered and reviewed, and a no build alternative. The two build alternatives include Alternative 1: New Spread Diamond Interchange at Lammers Road and Alternative 5A: Modified 11th Street Partial Cloverleaf Interchange.

### ***Summary of Results and Impacts***

The following sensitive biological resources and sensitive species were documented within or identified as having the potential to occur in the Biological Study Area (BSA) and therefore could be affected by the proposed project.

#### ***Waters of the United States***

Waters of the U.S., including wetlands, are present in the BSA and consist of three areas of freshwater marsh (0.42 acre), three irrigation canals (1.14 acres), and six irrigation ditches (0.47 acre). Both alternatives of the proposed project would have permanent and temporary effects on waters of the U.S., including wetlands; however, Alternative 5A would result in fewer permanent and temporary effects on wetlands and other waters than Alternative 1.

#### ***Sensitive Natural Communities***

One sensitive natural community, freshwater marsh, occurs in the BSA and would be permanently and temporarily affected by construction of either project alternative; however, Alternative 5A would result in fewer permanent and temporary effects on freshwater marsh than Alternative 1.

#### ***Sensitive Species***

The following conclusions have been reached regarding special-status species in the BSA.

- No special-status plants occur in the BSA based on a lack of potential habitat and negative results of multiple field surveys during the appropriate times of year.

- Potential habitat for giant garter snake occurs in the BSA and thus construction of the project under either alternative could affect this species, either directly or through habitat modification. Implementation of avoidance, minimization, and mitigation efforts identified in Chapter 4 would reduce the potential for impact to this species.
- Potentially suitable habitat for western pond turtle occurs in the BSA and thus construction of the project under either alternative could affect western pond turtle, either directly or through habitat modification. Implementation of avoidance and minimization efforts identified in Chapter 4 would reduce the potential for impact to this species.
- Swainson's hawks have been recorded to nest in the BSA. Development of the project could affect, either directly or through habitat modifications, the state-threatened Swainson's hawk. Implementation of avoidance and minimization efforts identified in Chapter 4 would reduce the potential for impact to this species.
- Burrowing owls have been recorded to nest in the BSA. Development of the project could affect, either directly or through habitat modifications, burrowing owls. Implementation of avoidance and minimization and compensation efforts identified in Chapter 4 would reduce the potential for impact to this species.
- Other sensitive bird species including white-tailed kite, northern harrier, and loggerhead shrike and other non-sensitive migratory birds and raptors have potential to nest and forage in the BSA. Construction of the proposed project could affect nesting birds, including the sensitive species listed above and raptors, if construction were to remove or otherwise disturb occupied nests during the breeding season. Construction activities during the breeding season that result in the death of young or loss of reproductive potential would violate the Migratory Bird Treaty Act (MBTA) and California Department of Fish and Game (DFG) codes 3503 and 3503.5. Implementation of avoidance and minimization efforts identified in Chapter 4 for sensitive bird species and migratory birds would reduce the potential for impact.
- The BSA has minimal potential to support American badger based on the presence of potential foraging habitat and limited low-quality denning habitat for this species. No avoidance or minimization efforts are proposed for this species.
- The BSA is within the San Joaquin kit fox's range and numerous California Natural Diversity Database (CNDDDB) (2009) records for San Joaquin kit fox dens, sightings, sign of presence (scat or prints) occur within 10 miles of the BSA (closest occurrence 3.6 miles). However, the habitat within the Project

Impact Area is not likely to support the species. Therefore this species is unlikely to occur within the project area and no avoidance and minimization measures are proposed.

### ***Invasive Plants***

Invasive plant species were documented in the BSA. The proposed project would temporarily create additional disturbed areas, but it would not result in a net increase in the area currently subject to periodic disturbance. Measures would be implemented to avoid and minimize the potential introduction and spread of invasive plant species as part of the proposed project.

### ***Permit Requirements***

Caltrans would ensure that the following listed permits would be obtained and implemented if required:

- Endangered Species Act, Section 7: Consultation and Incidental Take Permit;
- Clean Water Act, Section 401: Water Quality Certification;
- Clean Water Act, Section 404: Placement of Fill; and
- Porter-Cologne Water Quality Control Act: Waste Discharge Requirements.

### ***Mitigation Agreements***

As part of the proposed project, Caltrans or its contractor would implement the following avoidance and minimization measures and compensation measures (abbreviated), which are described in Chapter 4. These measures have been identified based on natural resources present or with potential to occur in the BSA and the potential impacts that could result from the proposed project.

- Compensate for the loss of waters of the U.S., including wetlands, at a minimum ratio of 1:1 (the final ratio will be determined through coordination with resource agencies) to ensure no net loss of wetland habitat functions and values.
- Avoid, minimize, and mitigate for effects to potential giant garter snake habitat, including purchasing mitigation credits from an approved conservation bank.
- Conduct preconstruction surveys for western pond turtle and if found to occur in or near construction area install exclusion fencing to prevent turtles from entering the construction area.
- Conduct tree, shrub, and other vegetation removal and construction activities outside of the nesting season for sensitive and non-sensitive migratory birds and raptors or conduct breeding season surveys.

- Prevent the introduction and spread of invasive plants in the BSA by implementing one or more best management practices (e.g., washing construction vehicles and equipment before entering or exiting the project site).

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## **List of Abbreviated Terms**

ACOE	U.S. Army Corps of Engineers
ADT	average daily traffic
BMPs	best management practices
BO	Biological Opinion
BSA	Biological Study Area
Cal-IPC	California Invasive Plant Council
Caltrans	California Department of Transportation
CCR	California Code of Regulations
CDFA	California Department of Food and Agriculture
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFGC	California Fish and Game Code
CFR	Code of Federal Regulations
City	City of Tracy
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CWA	Clean Water Act
DFG	California Department of Fish and Game
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ESA	federal Endangered Species Act of 1973
FHWA	Federal Highway Administration
FR	Federal Register
I-205	Interstate 205
I-5	Interstate 5
I-580	Interstate 580
MBTA	Migratory Bird Treaty Act
MOU	Memorandum of Understanding
NEPA	National Environmental Policy Act
NES	Natural Environment Study

NOAA Fisheries	National Oceanic and Atmospheric Administration's National Marine Fisheries Service
PDT	Project Development Team
PM	post mile
Porter-Cologne Act	Porter-Cologne Water Quality Control Act
RWQCB	Regional Water Quality Control Board
SJCOG	San Joaquin Council of Governments
SR	State Route
U.S. 50	U.S. Highway 50
USDA	U.S. Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	U.S. Geological Survey
WDRs	waste discharge requirements

# Chapter 1. Introduction

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The California Department of Transportation (Caltrans), in cooperation with the City of Tracy (City) proposes to construct a new interchange at Lammers Road and the auxiliary lane from Post Mile 2.6 to R5.1 on I-205 between the 11<sup>th</sup> Street and Grant Line Road interchanges in northwest Tracy (Figure 1). The project is to construct a new interchange on I-205. Eastbound and westbound auxiliary lanes would be constructed to improve merge/change movements. Two build alternatives are being considered in the environmental study phase. The first is Alternative 1 – Spread Diamond Interchange. This alternative would leave the existing 11<sup>th</sup> Street ramps and connect eastbound and westbound auxiliary lanes to Grant Line Road. The second is Alternative 5A – Partial Cloverleaf Interchange. This alternative would replace the existing 11<sup>th</sup> Street ramps. Auxiliary lanes will be constructed in the westbound direction to Grant Line Road. The No Build alternative is also being considered.

The purpose of this Natural Environment Study (NES) is to describe biological resources that are present in the proposed project area and to identify potential project-related impacts to sensitive plants and animals, sensitive biological communities, and other sensitive resources protected under local, state, and federal laws and regulations. This document provides avoidance and minimization as well as compensation measures aimed at avoiding or reducing the impacts associated with the proposed project.

## **1.1. Project History**

I-205 is an important east-west connector between the San Francisco Bay Area and regions eastward. The purpose of the proposed project is to provide additional connectivity to I-205 to serve the increase in forecasted traffic demand at surrounding interchanges as well as improve regional mobility by connecting a planned regional arterial road with I-205. Seven project build alternatives were developed for initial consideration during the initial project development process. Five of these alternatives were eliminated because they did not meet the project purpose and need. The proposed project was identified as a way to provide a modified connection to I-205 to serve the increase in forecasted traffic demand at surrounding interchanges. The improved interchange would increase accessibility to and from I-205, thereby reducing motorist dependency and congestion at adjacent interchanges.

In addition, the proposed project would improve regional mobility by connecting a regional arterial with I-205. This connection would provide alternative routes to I-205 for local traffic.

I-205 is a short, well-travelled freeway connecting the Central Valley of California with the San Francisco Bay Area. On its eastern end, it connects to Interstate 5 (I-5) and State Route (SR) 120, a freeway that connects I-5 and SR 99. On its western end, I-205 connects to Interstate 580 (I-580), which is the main route into the San Francisco Bay Area from the center of the Central Valley.

I-205 provides direct access to the western portion of the City of Tracy, a growing bedroom community and transportation hub. I-205 primarily functions to channel commuter and freight traffic from the north (Stockton and Sacramento), east (Manteca, Oakdale, Sonora), and south (Modesto, Merced) to the Bay Area via I-580 and the Altamont Pass. I-205 replaced U.S. Highway 50 (U.S. 50), and the original route of U.S. 50 through Tracy is now part of Business Loop I-205. Due to its role as a commuter and freight route, the previous four-lane configuration for I-205 at the eastern end was inadequate to handle traffic demands and was widened in 2009 to include two more lanes. I-205 within the project limits is currently a six-lane freeway (three mixed flow lanes in each direction) from I-580 to I-5.

The City of Tracy conducted a comprehensive traffic analysis to assess the current and projected traffic needs based on long-term demand and its General Plan. Fehr & Peers Transportation consultants (traffic consultants to the City) prepared a traffic model for design horizon year 2035 utilizing a blend of the City's traffic model and the San Joaquin Council of Governments' (SJCOG) modeling tools. In addition to the traffic forecasts, Fehr & Peers completed an analysis of the traffic conditions to analyze traffic levels of service and establish project geometry (i.e., roadway design) for the interchange.

Year 2035 traffic forecasts were used to determine required geometrics (design, capacity, signalization, storage lengths, etc.) for several reasons. First, the *California Department of Transportation Highway Design Manual* requires that the project design meet a minimum of a 20-year design horizon to maximize the capital expenditure. Second, the SJCOG projections utilize a 20-year horizon. Third, the City of Stockton recently approved the long-term General Plan program which defines the City's land use objectives for a 2035 horizon.

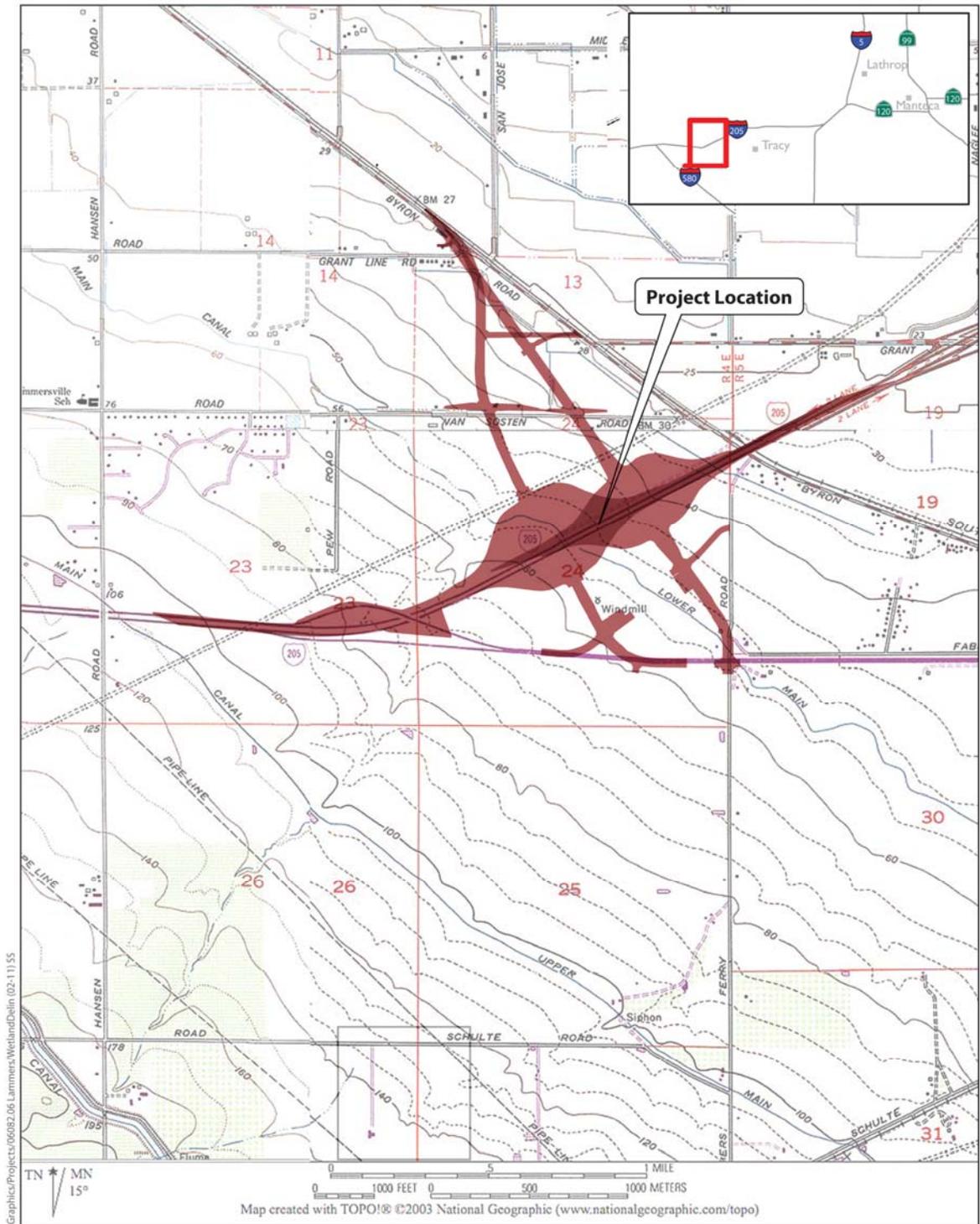


Figure 1: Project Location Map



### 1.1.1. Project Purpose and Need

The purposes of the proposed project are:

- To provide additional connectivity to I-205 to serve the increase in forecasted traffic demand at surrounding interchanges, and
- To improve regional mobility by connecting a planned regional arterial road with I-205.

The proposed new Lammers Road interchange is needed to improve local access to I-205, to connect planned regional arterials with I-205 and to provide interregional connectivity. The project is needed because northwest Tracy has been, and is expected to continue, experiencing substantial traffic growth – both locally from new area development and regionally from adjacent communities such as Mountain House and Gateway.

Traffic volumes on 11th Street and Grant Line Road have been increasing over the last several years. Currently, traffic volumes are approximately 113,000 average daily traffic (ADT) on I-205 west of 11th Street, 95,000 ADT on I-205 east of 11th Street, 26,000 ADT on 11th Street east of I-205 and 21,000 ADT on Grant Line Road east of Naglee Road. The City is anticipating development in the project vicinity that would contribute to significantly increased traffic volumes. Development projects currently approved include Tracy Gateway, Mountain House, and Naglee/Grant Line Road area. Future traffic models project that by 2035, traffic would be approximately 186,000 ADT on I-205 west of 11th Street and would increase to 56,000 ADT on 11th Street east of I-205 and 30,000 ADT on Grant Line Road east of Naglee Road. The new interchange would be needed to maintain or improve levels of service at the intersections of 11th Street/Lammers Road and Grant Line Road/Naglee Road.

This connection would provide alternative routes to I-205 for local traffic. The proposed interchange is currently identified in the San Joaquin County Regional Transportation Plan as a Tier 1 project and in the City of Tracy Roadway Master Plan as a Principal Arterial. The Lammers Road alignment and new interchange with I-205 is planned to connect from the future Golden Valley Parkway (currently Middle Road) north of I-205 to I-580 south of Tracy.

This Lammers Road regional connection would serve north-south access in the western portion of the Tracy urban area, and provide an alternative means of access to future east-west connections.

The result of this additional access would result in a substantial area-wide reduction in daily vehicle hours of delay. The implementation of the project could potentially reduce the daily vehicle hours of delay by up to 66%.

## **1.2. Project Description**

This section describes the Build Alternatives that have been developed by a multi-disciplinary and multi-agency Project Development Team (PDT). PDT members consist of Caltrans staff representing design, traffic operations, environmental and right-of-way disciplines, as well as representatives of project stakeholders including the City of Tracy Public Works Department and the SJCOG. The PDT recommends the alternatives to address the project's purpose and need, while avoiding or minimizing environmental impacts. Major features used for comparison include project cost, level of service and other traffic data, and specific environmental impacts.

For the proposed project, the build alternatives focus on the various interchange alternatives being considered and reviewed. Two build alternatives and a No Build Alternative have gone forward for evaluation in this document. The project impact area for each of the two build alternatives is shown in Figure 2. This section describes the alternatives under consideration.



Figure 2: Project Impact Area



## 1.2.1. Build Alternatives

### 1.2.1.1. ALTERNATIVE 1: SPREAD DIAMOND INTERCHANGE

This alternative would provide a new interchange at Lammers Road over I-205, with four new connection points to I-205. The existing partial 11th Street interchange ramps to and from I-205 west would be retained. Lammers Road would be realigned as a 6-lane arterial/expressway north of 11th Street with an overcrossing at I-205 and extend north to Grant Line Road and realign with Byron Road. A spread diamond (Type L-2) interchange would be constructed for Lammers Road at I-205 approximately 0.8-mile east of the 11th Street interchange and 1 mile west of Grant Line Road in the westbound and eastbound directions. Local road improvements would include:

- Realignment and extension of Grant Line Road over Byron Road to connect with Lammers Road north of I-205.
- Extension of Commerce Way north of 11th Street to connect with the new alignment of Lammers Road south of I-205.
- Revised access to the Westgate neighborhood currently served by the existing Lammers Road.
- A local road north of I-205 to connect Lammers Road and Byron Road.

*Structures.* The Lammers Road overcrossing would be designed to accommodate the future widening of I-205 to 10 lanes.

*Local Streets.* Modifications would be required for various local streets to accommodate the new interchange. Local streets would be impacted temporarily during construction to accommodate contractor access and complete construction tasks.

*Pedestrian and Bicycle Facilities.* Pedestrian facilities would be provided across I-205 on both sides of Lammers Road in conformity with the City General Plan.

*Drainage.* Additional drainage improvements are required along the mainline due to the increase in paved surfaces and subsequent runoff. Drainage improvements include, but are not limited to, surface and subsurface drains and retention ditches along the auxiliary lanes between Lammers Road and Grant Line Road. Retention basins within the interchange area would be constructed to accommodate the storm runoff from the interchange ramps.

*Park and Ride facilities.* One acre Park and Ride facilities would be provided in the vicinity of the proposed project at the southeast corner of the eastbound ramp intersection.

*Landscaping.* Standard landscaping would be provided within the new interchange improvements which may include trees and shrubs in accordance with Caltrans allowances. Along I-205, erosion control would be provided on the embankment side of slopes and ditches. Other landscaping would be provided in accordance with mitigation requirements (e.g., due to the loss of existing trees within the I-205 corridor). Replacement landscaping may occur at an offsite location.

#### **1.2.1.2. ALTERNATIVE 5A: PARTIAL CLOVERLEAF INTERCHANGE**

This alternative would construct a new partial cloverleaf interchange to replace the existing 11<sup>th</sup> Street ramps on I-205. The new interchange would be located approximately 2.3 miles east of the Mountain House Parkway interchange and 1.6 miles west of the Grant Line Road interchange. An auxiliary lane in the westbound direction along I-205 would connect the westbound Grant Line Road on-ramp to the westbound 11<sup>th</sup> Street exit ramp. Local road improvements would include:

- Realignment and extension of 11th Street to curve to the north west of Lammers Road to connect to Byron Road north of I-205.
- Realignment and extension of Grant Line Road over Byron Road to connect with 11th Street north of I-205.
- A local road north of I-205 to connect 11th Street and Byron Road.

*Structures.* The 11th Street Overcrossing would be designed to accommodate the future widening of I-205 to 10 lanes. The existing 11th Street westbound on-ramp overcrossing would be demolished.

*Local Streets.* Modifications would be required for various local streets to accommodate the new interchange. Local streets would be impacted temporarily during construction to accommodate contractor access and complete construction tasks.

*Pedestrian and Bicycle Facilities.* Pedestrian facilities would be provided to cross I-205 on both sides of Lammers Road in conformity with the City General Plan.

*Drainage.* Additional drainage improvements are required among the mainline due to the increase in paved surfaces and subsequent runoff. Drainage improvements include, but are not limited to, surface and subsurface drains and retention ditches along the auxiliary lanes and basins within the interchange area.

*Park and Ride Facilities.* One acre Park and Ride facilities would be provided in the vicinity of the proposed project at the northwest corner of the Commerce Way and 11th Street intersection.

*Landscaping.* Standard landscaping would be provided within the new interchange improvements which may include trees and shrubs in accordance with Caltrans allowances. Along I-205, erosion control would be provided on the embankment side of slopes and ditches. Other landscaping would be provided in accordance with mitigation requirements (e.g. due to the loss of existing trees within the I-205 corridor). Replacement landscaping may occur at an offsite location.

### **1.2.2. No Build Alternative**

The No Build alternative assumes that existing infrastructure conditions at the project site and on the freeway system would remain, with the exception of programmed improvements on SJCOG's RTP Tier 1 list. There would be no construction of a new interchange, nor associated ramps and infrastructure. Lammers Road would terminate north of I-205 at Grant Line Road and would not connect with its southern segment at Lammers Road and 11th Street. Local road improvements would be built to serve future development in the urban reserves north and south of I-205.



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## Chapter 2. Study Methods

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Potential biological resource issues for the proposed project were identified based on applicable regulations, a review of existing information, field surveys, and agency coordination, as described in this section.

### **2.1. Regulatory Requirements**

This section describes the federal, state, and local plans, policies, and laws that are relevant to biological resources in the proposed project area. A list of applicable federal permits and approvals that could be required prior to construction of the proposed project is provided in Chapter 5.

#### **2.1.1. National Environmental Policy Act**

The National Environmental Policy Act (NEPA) of 1970 was enacted to encourage the productive, enjoyable harmony between people and the environment, to promote efforts that prevent and/or eliminate damage to the environment, and to enrich understanding of natural resources. NEPA requires federal agencies to consider environmental factors prior to their actions. The Federal Highway Administration's (FHWA's) responsibility for environmental review, consultation, and any other action required in accordance with applicable Federal laws for this project is being, or has been, carried out by Caltrans under its assumption of responsibility pursuant to 23 USC 327.

#### **2.1.2. Endangered Species Act**

The federal Endangered Species Act of 1973 (ESA), and subsequent amendments provide for the conservation of endangered and threatened species and the ecosystems on which they depend. The U.S. Fish and Wildlife Service (USFWS) (with jurisdiction over plants, wildlife, and resident fish) and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries) (with jurisdiction over anadromous fish and marine fish and mammals) oversee the ESA.

Section 9 of ESA prohibits the take of any fish or wildlife species listed as endangered, including the destruction of habitat that prevents the species' recovery. Take is defined as the action of or attempt to hunt, harm, harass pursue, shoot, wound, capture, kill, trap, or collect a species. Section 9 prohibitions also apply to threatened species unless a special rule has been defined with regard to take at the time of listing.

Under Section 9 of the ESA, the take prohibition applies only to wildlife and fish species. However, Section 9 does prohibit the unlawful removal and reduction to possession, or malicious damage or destruction of, any endangered plant from federal land. Section 9 prohibits acts that remove, cut, dig up, damage, or destroy an endangered plant species in nonfederal areas in knowing violation of any state law or in the course of criminal trespass. Candidate species and species that are proposed or under petition for listing receive no protection under Section 9.

Section 7 of ESA mandates that all federal agencies consult with USFWS and NOAA Fisheries if they determine that a proposed project may affect a listed species or its habitat. The purpose of consultation with USFWS and NOAA Fisheries is to ensure that the federal agencies' actions do not jeopardize the continued existence of a listed species or destroy or adversely modify critical habitat for listed species.

### **2.1.3. Migratory Bird Treaty Act**

The Migratory Bird Treaty Act (MBTA) protects migratory bird species from take. *Take*, under the MBTA, is defined as the action of, or an attempt to, pursue, hunt, shoot, capture, collect, or kill (*50 Code of Federal Regulations [CFR] 10.12*). The definition differentiates between “intentional” take (take that is the purpose of the activity in question) and “unintentional” take (take that results from, but is not the purpose of, the activity in question).

Executive Order (EO) 13186 (signed January 10, 2001) directs each federal agency taking actions that would have or would likely have a negative impact on migratory bird populations to work with the USFWS to develop a Memorandum of Understanding (MOU) to promote the conservation of migratory bird populations. Protocols developed under the MOU must include the following agency responsibilities:

- Avoid and minimize, to the extent practicable, adverse impacts on migratory bird resources when conducting federal agency actions.
- Restore and enhance habitat of migratory birds, as practicable.
- Prevent or abate the pollution or detrimental alteration of the environment for the benefit of migratory birds, as practicable.

The EO is designed to assist federal agencies in their efforts to comply with the MBTA; it does not constitute any legal authorization to take migratory birds.

#### **2.1.4. Clean Water Act: Section 401 and Section 404**

Clean Water Act (CWA) Section 401 requires that applicants for a federal license or permit to conduct activities that may result in the discharge of a pollutant into waters of the United States obtain certification from the state in which the discharge would originate or, if appropriate, from the interstate water pollution control agency with jurisdiction over affected waters at the point where the discharge would originate. Therefore, all projects that have a federal component and may affect state water quality (including projects that require federal agency approval, such as issuance of a CWA Section 404 permit) must also comply with CWA Section 401.

After the California Environmental Quality Act (CEQA) process is complete, Caltrans would apply for water quality certification from the Regional Water Quality Control Board (RWQCB) to comply with CWA Section 401. The U.S. Army Corps of Engineers (ACOE) would require compliance with Section 401 as a prerequisite to authorization of the project under Section 404.

The ACOE and the U.S. Environmental Protection Agency (EPA) regulate the placement of fill into waters of the United States under CWA Section 404. Waters of the United States include lakes, rivers, streams and their tributaries, and wetlands. Wetlands are defined for regulatory purposes as areas inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions (33 CFR 328.3, 40 CFR 230.3).

On November 7, 2008, the Sacramento District of the ACOE issued a public notice (SPK-2008-01557) regarding local processing procedures for jurisdictional determinations. Applicants seeking ACOE permits can elect either the traditional “approved” approach to obtain a jurisdictional determination from ACOE or seek a preliminary jurisdictional determination in which questions regarding the jurisdictional status of features on a particular site are waived or set aside. The preliminary jurisdictional determination is intended to streamline the process for applicants who want to obtain ACOE permit authorizations or jurisdictional determinations.

##### **2.1.4.1. EXECUTIVE ORDER 11990: PROTECTION OF WETLANDS**

Executive Order 11990 (signed May 24, 1977) requires federal agencies to prepare wetland assessments for proposed actions located in or affecting wetlands. Agencies must avoid undertaking new construction in wetlands unless no practicable alternative

is available and the proposed action includes all practicable measures to minimize harm to wetlands.

**2.1.4.2. EXECUTIVE ORDER 13112: PREVENTION AND CONTROL OF INVASIVE SPECIES**

Executive Order 13112 (signed February 3, 1999) directs all federal agencies to prevent and control introductions of invasive species in a cost-effective and environmentally sound manner. The EO requires consideration of invasive species in National Environmental Policy Act (NEPA) analyses, including their identification and distribution, their potential impacts, and measures to prevent or eradicate them.

**2.1.5. California Environmental Quality Act**

The CEQA defines a significant effect on the environment as a substantial or potentially substantial adverse change in the physical conditions within the area affected by the project. It is the policy of the State to prevent the elimination of fish or wildlife species due to human activities and to ensure that these species do not decline below self-perpetuating levels in order to preserve them for future generations.

**2.1.6. California Endangered Species Act**

The California Endangered Species Act (CESA) (California Fish and Game Code Section 2050 et seq.) establishes state policy to conserve, protect, restore, and enhance threatened or endangered species and their habitats. CESA mandates that state agencies should not approve projects that jeopardize the continued existence of threatened or endangered species if reasonable and prudent alternatives are available that would avoid jeopardy. For projects that would affect a species that is federally and state-listed, compliance with ESA satisfies CESA if the California Department of Fish and Game (DFG) determines that the federal incidental take authorization is consistent with CESA under California Fish and Game Code Section 2080.1. For projects that would result in take of a species that are only state-listed, the project proponent must apply for a take permit under Section 2081(b).

**2.1.7. California Fish and Game Code**

Section 1602 of the California Fish and Game Code (CFG) requires project proponents to notify DFG before any project that would divert, obstruct, or change the natural flow, bed, channel, or bank of any river, stream, or lake. Preliminary notification and project review generally occur during the environmental process. When an existing fish or wildlife resource may be substantially adversely affected, DFG is required to propose reasonable changes to the project to protect the resources. These modifications are formalized in a Streambed Alteration Agreement that becomes part of the plans, specifications, and bid documents for the project.

The CFGC provides protection from take for a variety of species, referred to as fully protected species. CFGC 5050 lists protected amphibians and reptiles. CFGC 5515 prohibits take of fully protected fish species. CFGC 3511 prohibits take of fully protected bird species. Fully protected mammals are protected under CFGC 4700. The CFGC defines take as “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.” Except for take related to scientific research, all take of fully protected species is prohibited.

CFGC 3503 prohibits the killing of birds or the destruction of bird nests. CFGC 3503.5 prohibits the killing of raptor species and destruction of raptor nests. Many bird species could potentially nest in the BSA or vicinity. These nests would be protected under these sections of the CFGC.

### **2.1.8. Porter-Cologne Water Quality Control Act**

The Porter-Cologne Water Quality Control Act (Porter-Cologne Act) authorizes the State Water Resources Control Board to regulate state water quality and protect beneficial uses. Under the Porter-Cologne Act definition, waters of the state are “any surface water or groundwater, including saline waters, within the boundaries of the state.” Although all waters of the United States that are within the borders of California are also waters of the state, the reverse is not true. If the ACOE determines that a wetland is not subject to regulation under Section 404, CWA Section 401 water quality certification is not required. However, the RWQCB may impose waste discharge requirements (WDRs) if fill material is placed into waters of the state.

## **2.2. Studies Required**

Potential biological resource issues associated with the proposed project were identified through review of USFWS and California Native Plant Society (CNPS) species lists, a search of California Natural Diversity Database (CNDDDB) records within a 10-mile radius of the proposed project area, and field surveys. Based on these methods it was determined that the following studies would be required to document natural resources in the BSA as defined in Section 3.1.1.

- Delineation of waters of the United States, including wetlands (Appendix A).
- Botanical field surveys to identify vegetation communities, protected trees, occurrences of sensitive plant species, and noxious weeds.
- Habitat-based field assessment to determine whether suitable habitat exists for sensitive animal and plant species.

### **2.2.1. Prefield Investigation**

Biologists reviewed existing resource information related to the proposed project to evaluate whether sensitive species or other sensitive biological resources (e.g., waters of the United States) could occur in the BSA. The sources listed below were reviewed:

- The USFWS list of endangered and threatened species that may occur in or be affected by projects in the Tracy and Union Island U.S. Geological Survey (USGS) 7.5-minute quadrangles (U.S. Fish and Wildlife Service 2010) (Appendix B);
- CNPS's online inventory of rare and endangered plants (California Native Plant Society 2010);
- CNDDDB records search of the Tracy, Union Island, Cedar Mountain, Clifton Court Forebay, Lathrop, Lone Tree Creek, Midway, Solyo, and Vernalis USGS 7.5-minute quadrangles (California Natural Diversity Database 2010) (Appendix C);
- California list of noxious weed species (California Department of Food and Agriculture 2009) and invasive plant inventory (California Invasive Plant Council 2006, 2007); and
- Soil Survey of San Joaquin County, California, Central Part (McElhiney 1992).

This information was used to develop lists of sensitive species and identify other sensitive biological resources that could be present in the project region. Species from the lists were considered if they were known to occur in the project region (i.e., within a 10-mile radius of the BSA) or if suitable habitat for the species was known to be present in the BSA.

### **2.3. Personnel and Survey Dates**

Habitat-based field assessments for sensitive plants and animals were conducted by ICF Jones & Stokes biologists on May 16, July 14, August 18, 2006, April 6, 2007, and September 30, 2009. All areas with the potential to be affected by project construction were accessed either by foot or by car during all field visits. A preliminary wetland delineation was conducted on July 14, 2006 and September 30, 2009. Methods for documenting waters of the United States and conducting botanical and wildlife surveys are discussed below. ICF biologists Jessica Hughes, Erin Hitchcock, and Will Kohn conducted field surveys. All biologists have a Bachelor's or Master's degree in Biology, Botany, or a related field and have 5 or more years of

professional experience conducting wildlife surveys, botanical surveys, or wetland delineations.

### **2.3.1. Waters of the United States**

The preliminary wetland delineation was conducted on July 14, 2006 and September 30, 2009. The delineation report (Appendix A) contains a complete discussion of the methods used to delineate waters of the United States. Waters of the U.S., including wetlands, delineated in the BSA were freshwater marsh, irrigation canals (including the Lower Main Canal), and irrigation ditches.

### **2.3.2. Botanical Resources**

Botanical surveys were conducted on May 16, 2006, April 6, 2007, and September 30, 2009. The botanical surveys coincided with the blooming periods of the sensitive plant species identified during the prefield investigation as having the potential to occur in the BSA. A list of plant species encountered during field visits is included in Appendix D. Vegetation communities in the BSA were also identified and mapped during the botanical surveys and habitat-based field assessment. Results of these surveys are presented in Chapters 3 and 4.

### **2.3.3. Wildlife Resources**

Habitat-based field assessments were conducted on August 18, 2006 and April 6, 2007 to evaluate the potential for the BSA to support sensitive wildlife species and nesting migratory birds, including raptors. The field assessments were conducted during the breeding season for most migratory birds, including raptors. A list of wildlife species observed during the field visits is included in Appendix E. Results of these habitat-based field assessments are presented in Chapters 3 and 4.

## **2.4. Agency Coordination and Professional Contacts**

During preparation of this document, ICF Jones & Stokes coordinated with the following federal, state, and local agencies.

Jessica Hughes, Botanist and Wetland Ecologist with ICF Jones & Stokes, contacted Steve Bailey, Deputy Director of the City of Tracy Department of Water Resources, on September 28, 2006 to ascertain the presence of a hydrological connection between Lower Main Canal and Old River. Mr. Bailey confirmed that there is a hydrological connection between Lower Main Canal and Old River via the portion of the canal located underneath the city (Bailey pers. comm.).

An official USFWS Species List was obtained by Caltrans on August 3, 2010.

## **2.5. Limitations That May Influence Results**

There were no limitations that may have influenced the findings of this NES.

## Chapter 3. Results: Environmental Setting

### 3.1. Description of the Existing Biological and Physical Conditions

#### 3.1.1. BSA

The project area consists of the combined project construction footprints for Alternatives 1 and 5A where permanent effects on biological resources would occur, and the biological BSA encompasses the project area plus a 200-foot-wide buffer area that accounts for potential temporary impacts on sensitive biological resources. The majority of the BSA is located west of Lammers Road and consists primarily of agricultural lands (i.e., pasture, alfalfa, and bare/disked areas) (Figure 3). The portion of the BSA located east of Lammers Road is comprised of developed and bare/disked areas (Figure 3). Additionally, the BSA also contains scattered rural residences, storage areas and outbuildings associated with agriculture, and paved roads.

#### 3.1.2. Physical Conditions

The BSA is within the San Joaquin Valley geographic subdivision of the Great Central Valley in the California Floristic Province (Hickman 1993: 44, 45). Topography in the BSA is relatively level and approximate elevations range from 35 feet to 85 feet above mean sea level.

According to the San Joaquin County soil survey (McElhiney 1992); the BSA is contained within two soil mapping units: Capay clay, 0–2% slopes, and Stomar clay loam, 0–2% slopes. Mapped information on soils is discussed in the delineation report (Appendix A). The majority of the BSA is located within the Capay clay, 0–2% slopes but the area north of 11th Street and south of I-205 is located within Stomar clay loam, 0–2% slopes (McElhiney 1992).

The BSA is located within the San Joaquin Delta hydrologic unit but does not contain any naturally occurring hydrological resources (U.S. Environmental Protection Agency 2009). The BSA contains only manmade irrigation canals and irrigation ditches. The largest irrigation canal is the Lower Main Canal, which carries water in an above-ground channel from the Old River to agricultural areas on the west side of Tracy, continues in a pipe under the city to Sugar Cut, and eventually connects back to the Old River, a navigable water of the United States (Bailey pers. comm.). The other irrigation canals and irrigation ditches in the BSA receive water from the Lower Main Canal and distribute it among the agricultural lands west of Tracy. Descriptions

of the Lower Main Canal, irrigation canals, and irrigation ditches in the BSA are further described in the delineation report (Appendix A).

### 3.1.3. Biological Conditions in the BSA

The BSA contains numerous land cover types, the majority of which are vegetation communities. The vegetation communities present in the BSA reflect the influence of long-term human activity (i.e., agricultural practices and development). Vegetation communities observed within the BSA are: pasture, alfalfa fields, freshwater marsh, and unmaintained ornamental cultivars (Figure 3). Of these vegetation communities, only freshwater marsh is recognized as a natural community on the California Department of Fish and Game’s List of California Terrestrial Communities Recognized by the California Natural Diversity Database (California Department of Fish and Game 2003). The alfalfa fields, pasture, and unmaintained ornamentals are anthropogenic vegetation types that are not recognized as terrestrial natural communities. Other land cover types observed in the BSA that are not considered vegetation communities are bare/disked areas, developed areas, irrigation canals, and irrigation ditches. The areas encompassed by each land cover type within the BSA are listed in Table 1. The general locations, representative plant species, and typical wildlife species found in each of the land cover types within the BSA are described below. Lists of all plant and wildlife species observed during the field surveys are included in Appendices D and E, respectively.

**Table 1: Land Cover Types in the BSA**

<b>Land Cover Type</b>	<b>Acres</b>
Pasture	179.87
Alfalfa Fields	123.43
Freshwater Marsh	0.48
Unmaintained Ornamentals	27.79
Bare/Disked	17.70
Developed	182.06
Unnamed Irrigation Canals	0.22
Lower Main Canal	1.04
Perennial Irrigation Ditch	0.22
Ephemeral Irrigation Ditch	0.30
<b>Total</b>	<b>533.11</b>

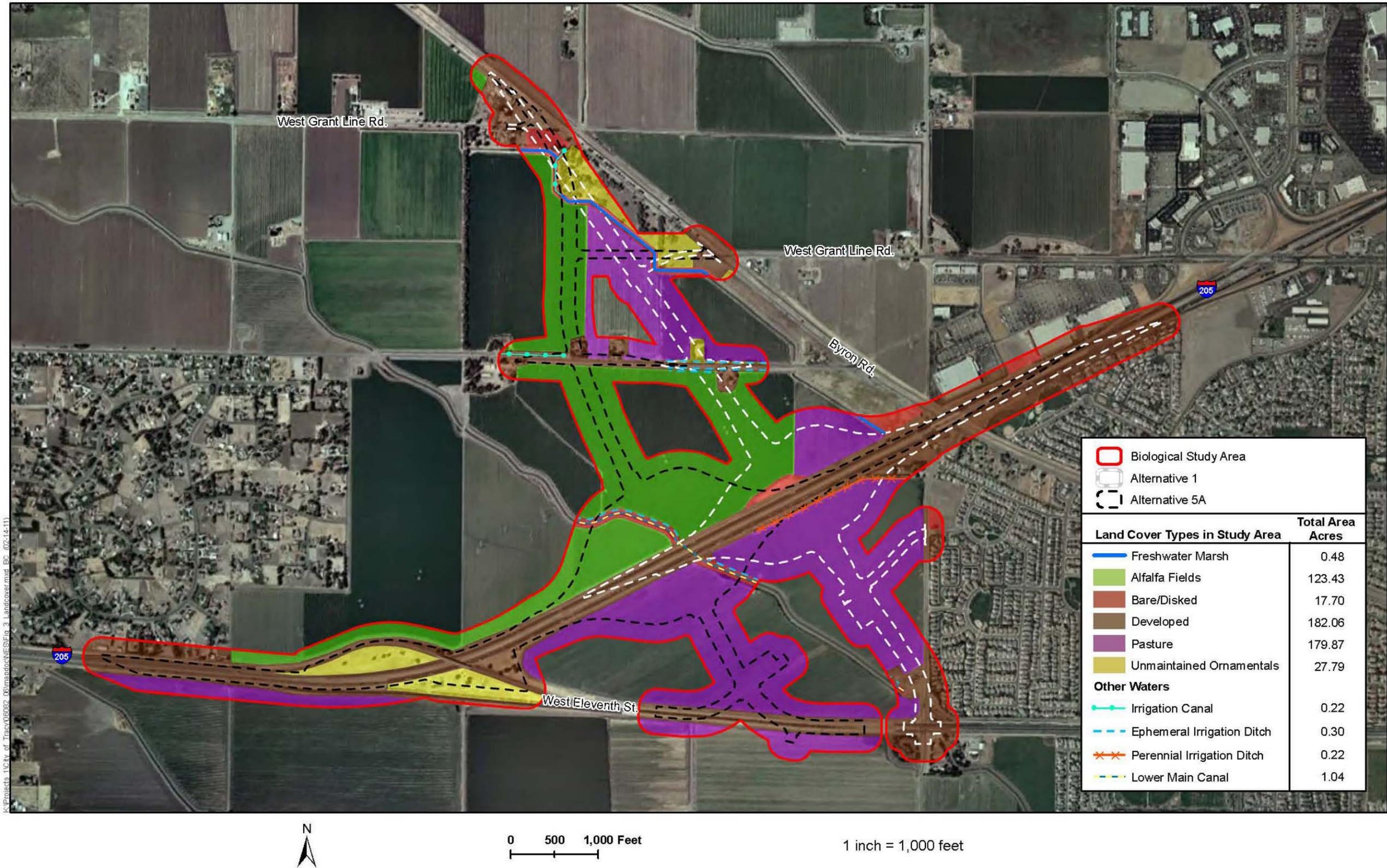


Figure 3: Land Cover Types in the BSA



### 3.1.3.1. VEGETATION COMMUNITIES

#### **Pasture**

Pasture comprises approximately 179.87 acres within the BSA and represents an artificially created and maintained vegetation community (Figure 3). Pasture occurs throughout the BSA, with the majority occurring in the large, triangular-shaped area bounded by I-205, 11th Street, and Lammers Road. Additional areas of pasture occur north and south of Von Sosten Road just west of the Byron Highway. The hydrological input for pasture is artificially enhanced by irrigation to maintain livestock grazing. Representative plant species observed in pastures in the BSA were Italian ryegrass (*Lolium multiflorum*), wild oat (*Avena fatua*), hare barley (*Hordeum murinum* ssp. *leporinum*), wildwhite clover (*Trifolium repens*), strawberry clover (*Trifolium fragiferum*), dallisgrass (*Paspalum dilatatum*), Bermuda grass (*Cynodon dactylon*), and bindweed (*Convolvulus arvensis*).

Pastures support a variety of common and sensitive raptors specifically due to the abundance of small rodents that provide prey sources. Raptors expected to forage in pasturelands include red-tailed hawk (*Buteo jamaicensis*), great-horned owl (*Bubo virginianus*), northern harrier (*Circus cyaneus*), white-tailed kite (*Elanus leucurus*), western burrowing owl (*Athene cunicularia*), and Swainson's hawk (*Buteo swainsoni*). Additionally herons including great blue heron (*Ardea herodias*), great egret (*Ardea alba*), and snowy egret (*Egretta thula*) often use these areas for foraging or resting areas. Ground-nesting birds such as western meadowlark (*Sturnella neglecta*), northern harrier, and western burrowing owl may nest in these areas as well. Mammal species such as California meadow vole (*Microtus californicus*), deer mouse (*Peromyscus maniculatus*), California ground squirrel (*Spermophilus beecheyi*), and Botta's pocket gopher (*Thomomys bottae*) are known to occupy these areas and coyote (*Canis latrans*) may forage in or move through these areas during dispersal.

#### **Alfalfa Fields**

Alfalfa (*Medicago sativa*) fields encompass approximately 123.43 acres within the BSA (Figure 3). The conditions in the field (i.e., active crops, evidence of harvesting) were variable during the multiple site visits to the BSA. The distribution of alfalfa fields in the BSA is currently limited to the areas north of I-205.

Alfalfa provides similar wildlife habitat values as described above for pastures; however due to the more intensive management of the fields, fewer ground nesting birds and burrowing mammals are expected to occur.

### **Freshwater Marsh**

Freshwater marsh (0.48 acre) comprises the emergent wetland located within the unnamed irrigation canal that originates south of Grant Line Road, flows parallel to Byron Road, and terminates north of I-205 (Figure 3). Representative species observed in the freshwater marsh were narrowleaf cattail (*Typha angustifolia*), watercress (*Rorippa nasturtium-aquaticum*), tall flatsedge (*Cyperus eragrostis*), sprangletop (*Leptochloa fascicularis*), dallisgrass, and rabbitsfoot grass (*Polypogon monspeliensis*). Although no surface hydrological connection is visible, the freshwater marsh appears to be perennially inundated with water from the Lower Main Canal. Freshwater marsh (i.e., coastal and valley freshwater marsh) is identified as a sensitive natural community by CNDDDB (California Natural Diversity Database 2010).

Freshwater marsh provides foraging and cover habitat for amphibians including bullfrog (*Rana catesbeiana*), Pacific tree frog (*Hyla regilla*), and western toad (*Bufo boreas*), and reptiles including western pond turtle (*Actinemys marmorata*) and common garter snake (*Thamnophis sirtalis*). These areas may also be used for foraging by herons species that were discussed above under the pasture community type.

### **Unmaintained Ornamentals**

Areas of unmaintained ornamental cultivars, covering a total area of approximately 27.79 acres, are scattered in the portion of the BSA located west of Lammers Road (Figure 3). Some of these cultivars were planted for windbreak purposes (e.g., the row of tamarisk [*Tamarix* sp.] that runs north and south between West Grant Line and Von Sosten Roads) or as a source of fruit/nuts (e.g., row of apple [*Malus* sp.] and walnut [*Juglans* sp.] trees along West Grant Line Road). Other unmaintained ornamentals in the BSA have escaped from their intended location in landscaping. The small area of unmaintained ornamentals located adjacent to the north side of Von Sosten Road appears to represent the original landscaping on a former home site. The largest continuous area of unmaintained ornamentals consists of a patch of tamarisk trees just south of the intersection of West Grant Line Road and West Byron Road.

Scattered ornamental trees within the BSA provide nesting habitat for a variety of bird (including raptor) species. Smaller trees would likely only support nesting of smaller birds such as western scrub jay (*Aphelocoma californica*), American crow (*Corvus brachyrhynchos*), western kingbird (*Tyrannus verticalis*), and loggerhead

shrike (*Lanius ludovicianus*), whereas larger trees may support nesting of raptors including red-tailed hawk, white-tailed kite, and Swainson's hawk.

### **3.1.3.2. OTHER LAND COVER TYPES AND AQUATIC HABITATS WITHIN THE BSA** ***Bare/Disked***

The BSA contains approximately 17.70 acres of bare/disked areas (Figure 3). The majority of the area that is bare/disked consists of fallow agricultural fields with indiscernible crops that have been disked within the last year, but there are also smaller areas that appear to have been graded for agricultural or development purposes. Bare/disked areas typically had low vegetative cover, but ruderal species such as black mustard (*Brassica nigra*), shepherd's purse (*Capsella bursa-pastoris*), ripgut brome (*Bromus diandrus*), wild oat, and old-man-of-spring (*Senecio vulgaris*) were observed.

These areas may provide foraging habitat for raptor species discussed above under the pasture community and depending on the frequency of disking that occurs in these areas, may provide potential nesting habitat for western burrowing owl, particularly where ground squirrels are present.

### ***Developed***

Developed areas comprise approximately 182.06 acres of the BSA (Figure 3). For the purposes of this NES, developed areas include rural residences, agricultural storage areas and outbuildings, and roadways. Plants associated with developed areas consisted of actively maintained landscaping or ornamental species. Representative species observed were oleander (*Nerium oleander*), eucalyptus (*Eucalyptus* spp.), stone pine (*Pinus pinea*), and crapemyrtle (*Lagerstroemia indica*).

Developed areas generally provide little habitat for wildlife although some species have adapted to human disturbance and may be present. Such species include American crow, rock dove (*Columbia livia*), mourning dove (*Zenaida macroura*), European starling (*Sturnus vulgaris*), and Brewer's blackbird (*Euphagus cyanocephalus*). Additionally, outbuilding structures may provide roosting habitat for bats such as Mexican free-tailed bat (*Tadarida brasiliensis*), California myotis bat (*Myotis californicus*), pallid bat (*Antrozous pallidus*), and western mastiff bat (*Eumops perotis californicus*), and nesting habitat for certain birds, including cliff swallow (*Petrochelidon pyrrhonota*) and black phoebe (*Sayornis nigricans*).

### **Irrigation Canals**

The BSA contains three irrigation canals: two unnamed canals and the Lower Main Canal (Figure 3). The unnamed canals and the Lower Main Canal function as main conduits for irrigation in the BSA.

#### **Unnamed Irrigation Canals**

A total of 0.22 acre of unnamed irrigation canals occurs within the BSA. This acreage consists of only unvegetated areas within the canals (i.e., open water).

The first unnamed irrigation canal, which begins south of Grant Line Road, parallels Byron Road, and ends north of I-205, supports areas of both freshwater marsh (discussed above) and open water. The mean width of this canal is approximately 7 feet and its banks are unlined. Vegetation observed on the banks of the first unnamed irrigation canal was relatively dense and consisted primarily of ruderal species such as perennial peppergrass (*Lepidium latifolium*), tree tobacco (*Nicotiana glauca*), Russian thistle (*Salsola tragus*), cheatgrass (*Bromus tectorum*), and prickly lettuce (*Lactuca serriola*). The supply of water from the Lower Main Canal into the first unnamed irrigation canal appears to be perennial based on observations of flowing water during the delineation fieldwork and multiple visits for other biological studies associated with the proposed project.

The second unnamed irrigation canal is located parallel to the north side of Von Sosten Road and has an average width of 7.5 feet. This irrigation canal is also unlined but the banks are only sparsely vegetated with ruderal species (e.g., barnyard grass [*Echinochloa crus-galli*], sprangletop [*Leptochloa fascicularis*]). The second unnamed irrigation canal receives water from the Lower Main Canal and conveys it east before disappearing underground approximately 2,000 feet east of where the Lower Main Canal crosses Von Sosten Road. The supply of water into the second unnamed irrigation canal from the Lower Main Canal appears to be perennial based on observations of flowing water during the delineation fieldwork and multiple visits for other biological studies associated with the proposed project. However, there is a shut-off valve located at the west end of the drainage near the canal and the flow observed during the September 30, 2009 site visit was less than that observed during previous site visits.

### ***Lower Main Canal***

The Lower Main Canal is the largest unvegetated irrigation feature in the BSA and is unlined. The portion of the Lower Main Canal in the BSA is approximately 18 feet wide and encompasses an area of 1.04 acres. The Lower Main Canal carries water from the Old River and distributes it to agricultural lands west and east of the City before ultimately reconnecting to the Old River. The Lower Main Canal also distributes water to the two unnamed irrigation canals.

Irrigation canals within the BSA may provide aquatic breeding or foraging habitat for amphibian and reptile species discussed under the freshwater marsh community type.

### ***Irrigation Ditches***

The BSA contains six irrigation ditches encompassing a total of 0.52 acre (Figure 3). In general, the irrigation ditches are unlined, lack a well-defined bed and bank, are relatively narrow (i.e., less than 4 feet wide), and contain structures designed to facilitate movement of a relatively small amount of water (i.e., weirs and hoses).

### ***Perennial Irrigation Ditch***

The largest of the irrigation ditches (0.22 acre), which is located in the pasture south of I-205, appears to have a perennial water supply and functions as a main conduit for irrigation in the BSA.

### ***Ephemeral Irrigation Ditch***

Five of the six irrigation ditches (0.30 acre) were dry or contained only small amounts of water at the time of site visits. These ephemeral drainage ditches only convey water for a short duration during the active irrigation of the individual parcels with which they are associated.

Similar to canals, irrigation ditches within the BSA may provide aquatic breeding or foraging habitat for amphibian and reptile species discussed under the freshwater marsh community type though the suitability of these ditches for breeding would depend on the time of year that water is released into these ditches and the length of time they remain inundated.

### **3.1.3.3. MIGRATION CORRIDORS**

No specific wildlife or fish migration corridors have been identified within the BSA; however this portion of the valley in general is used by various migratory birds during the fall and spring. The agricultural lands may be used for foraging by waterfowl and other birds during their seasonal migrations. The aquatic resources within the BSA described above (irrigation canals) do not provide habitat for migrating fish species but may be used by giant garter snake, if present in the BSA, for movement.

### **3.1.4. Other Biological Issues**

#### **3.1.4.1. INVASIVE PLANT SPECIES**

Invasive plant species include species designated as federal noxious weeds by the U.S. Department of Agriculture (USDA), species listed by the California Department of Food and Agriculture (CDFA), and other invasive plants designated by California Invasive Plant Council (Cal-IPC). Roads, highways, and related construction projects are some of the principal dispersal pathways for invasive plant species. The introduction and spread of invasive plants adversely affect natural plant communities by altering ecosystem processes (e.g., fire frequency, hydrological cycles), displacing native plant species, and reducing the quality of habitats that provide shelter and forage for wildlife species (California Invasive Plant Council 2006).

Table 2 identifies the invasive plant species located in the BSA. Individuals of these species occur at the edges of alfalfa fields, along roadsides, within bare/disked areas, and in pastures. No major infestations of invasive plants were observed in the BSA.

**Table 2: Invasive Plant Species Located in the BSA**

Species	CDFA	Cal-IPC
<i>Brassica nigra</i> (black mustard)	–	Moderate
<i>Bromus diandrus</i> (ripgut brome)	–	Moderate
<i>Bromus tectorum</i> (cheatgrass)	–	High
<i>Centaurea solstitialis</i> (yellow star-thistle)	C	High
<i>Convolvulus arvensis</i> (bindweed)	C	–
<i>Cynodon dactylon</i> (bermuda grass)	C	Moderate
<i>Erodium cicutarium</i> (redstem filaree)	–	Limited
<i>Foeniculum vulgare</i> (fennel)	–	High
<i>Hordeum murinum</i> (hare barley)	–	Moderate
<i>Lepidium latifolium</i> (perennial pepperweed)	B	High
<i>Lolium multiflorum</i> (Italian ryegrass)	–	Moderate
<i>Medicago polymorpha</i> (bur clover)	–	Limited
<i>Phalaris aquatica</i> (harding grass)	–	Moderate
<i>Picris echioides</i> (bristly oxtongue)	–	Limited
<i>Plantago lanceolata</i> (English plantain)	–	Limited
<i>Polypogon monspeliensis</i> (rabbitsfoot grass)	–	Limited
<i>Raphanus sativus</i> (radish)	–	Limited
<i>Rumex crispus</i> (curly dock)	–	Limited
<i>Silybum marianum</i> (milk thistle)	–	Limited

Notes: The CDFA and Cal-IPC lists assign ratings that reflect the CDFA and Cal-IPC views of the statewide importance of the pest, likelihood that eradication or control efforts would be successful, and present distribution of the pest in the state. These ratings are guidelines that indicate the most appropriate action to take against a pest under general circumstances.

The CDFA categories indicated in the table are defined as follows:

- B: An organism of known economic importance subject to: eradication, containment, control or other holding action at the discretion of the individual county agricultural commissioner.
- C: State-endorsed holding action and eradication only when found in a nursery; action to retard spread outside nurseries at the discretion of the commissioner.

The Cal-IPC categories indicated in the table are defined as follows:

- Moderate: Species with substantial and apparent ecological impacts, moderate to high rates of dispersal, and limited to widespread distribution; establishment dependent on disturbance.
- Limited: Species with minor ecological impacts, low to moderate rates of invasion, and limited distribution; locally persistent and problematic.

## 3.2. Regional Species and Habitats of Concern

### 3.2.1. Regional Biological Setting

The historic vegetation conditions within the BSA and the adjacent lands have been substantially altered by past and ongoing anthropogenic activities. The only natural vegetation community recognized by CNDDDB in the BSA is the freshwater marsh that occurs within one of the irrigation canals. Therefore, from a botanical perspective, the vegetative conditions in the BSA do not appear to represent a substantial contribution to the native flora resources in the region.

### 3.2.2. Sensitive Species in the Project Region

Table 3 lists sensitive plant species and Table 4 lists sensitive wildlife species that are known to occur or have the potential to occur in the geographic region. These species were identified based on the USFWS species list, a CNDDDB records search, a list generated using CNPS's online *Inventory of Rare and Endangered Plants*, and species distribution and habitat requirements data (California Native Plant Society 2010; California Natural Diversity Database 2010; U.S. Fish and Wildlife Service 2010). Figures 4 and 5 depict the locations of the CNDDDB records for plants and animals, respectively, within 10 miles of the BSA.

For the purpose of this NES, sensitive species are plants and animals that are legally protected under ESA, CESA, or other regulations, and species that are considered sufficiently rare by the scientific community to qualify for such listing. Sensitive plants and animals fall into the following categories:

- species listed or proposed for listing as threatened or endangered under ESA (*50 CFR 17.11* [listed animals], *50 CFR 17.12* [listed plants], and various notices in the *Federal Register [FR]* [proposed species]);
- species that are candidates for possible future listing as threatened or endangered under ESA (73 FR 75178, December 10, 2008);
- species listed or proposed for listing by the State of California as threatened or endangered under CESA (*14 California Code of Regulations [CCR] 670.5*);
- plants listed as rare under the California Native Plant Protection Act of 1977 (California Fish and Game Code, Section 1900 et seq.);
- plants considered by CNPS to be “rare, threatened, or endangered in California” (Lists 1 and 2 in California Native Plant Society 2010);
- plants listed by CNPS as plants about which more information is needed to determine their status and plants of limited distribution, which may be included as sensitive species on the basis of local significance or recent biological information (Lists 3 and 4 in California Native Plant Society 2010);
- animals listed as California species of special concern on CDFG's Special Animals List (California Department of Fish and Game 2009);
- animals fully protected in California (CFG 3511 [birds], 4700 [mammals], and 5050 [amphibians and reptiles]); and
- species that meet the definitions of rare or endangered under CEQA (State CEQA Guidelines Section 15380).

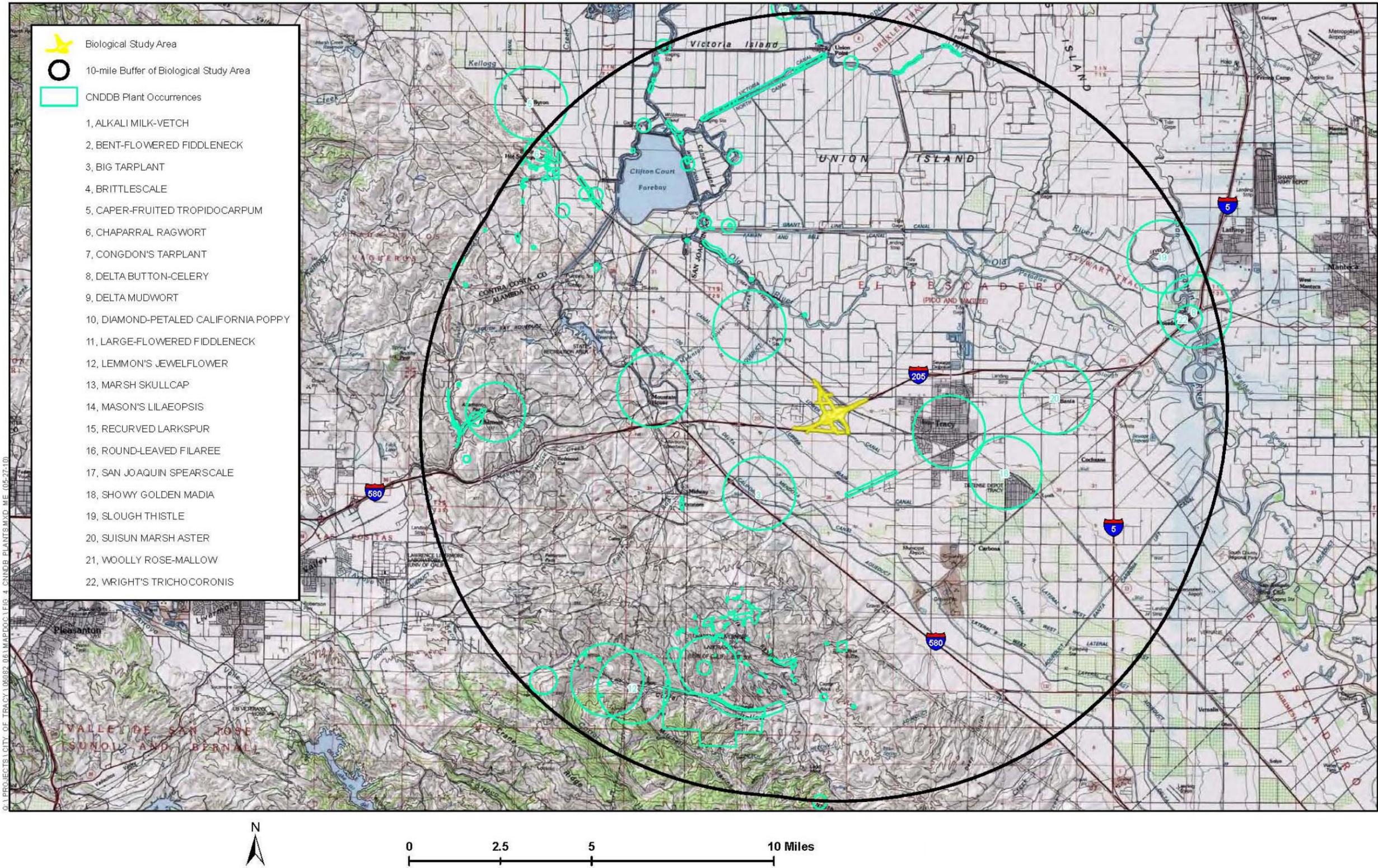


Figure 4: CNDDB Plant Occurrences within 10 Miles of the BSA



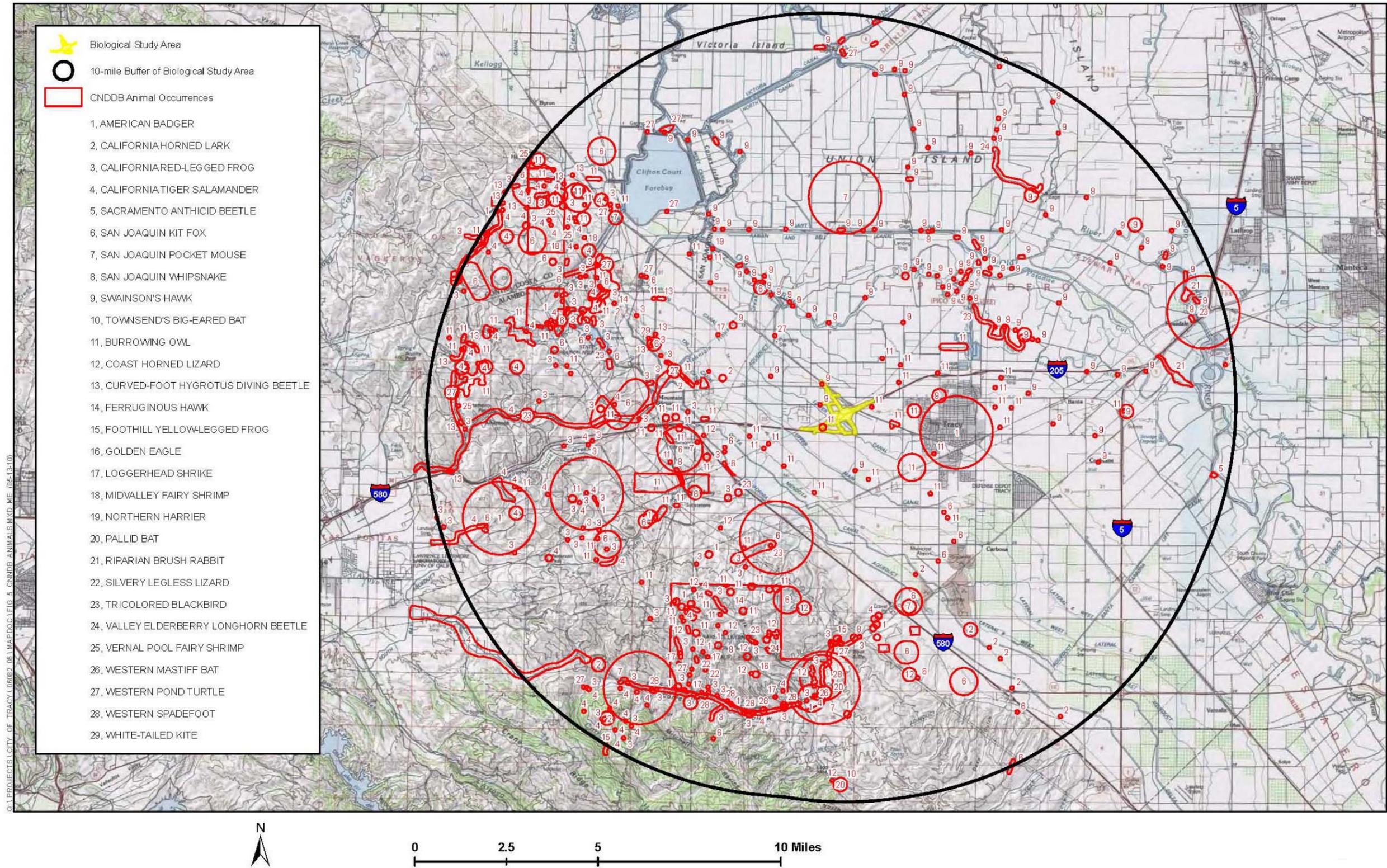


Figure 5: CNDDB Animal Occurrences within 10 Miles of the BSA



**Table 3: Special-Status Plant Species Identified During Prefield Investigation as Having Potential to Occur in the I-205/Lammers Road/West Eleventh Street Interchange Project BSA**

Common Name Scientific Name	Status <sup>a</sup> Federal/State/ CNPS	General Habitat Description <sup>c</sup>	Habitat Present/ Absent <sup>e</sup>	Rationale
Sharsmith's onion <i>Allium sharsmithiae</i>	-/-/1B.3	Serpentine or rocky soils in chaparral, cismontane woodland at elevations of 1,312–3,937 feet above mean sea level. Known only from Mt. Hamilton Range in Alameda, Santa Clara, and Stanislaus Counties. Reported blooming period is March through May.	Absent	BSA substantially lower than species elevation range. No suitable vegetation communities or soils present in the BSA
Large-flowered fiddleneck <i>Amsinckia grandiflora</i>	FE/SE/1B.1	Open grassy slopes in annual grasslands and cismontane woodlands at elevations of 902–1,804 feet above mean sea level. Historically known from foothills of Mt. Diablo in Alameda, Contra Costa, and San Joaquin Counties; currently known from only three natural occurrences. Reported blooming period is April through May.	Absent	BSA substantially lower than species elevation range. Pasture areas in BSA are not suitable habitat due to of disturbance associated with agricultural practices and development. Species currently known from only three natural occurrences (located outside BSA).
Bent-flowered fiddleneck <i>Amsinckia lunaris</i>	-/-/1B.2	Cismontane woodland, valley and foothill grassland, coastal bluff scrub at elevations of 16–1,640 feet above mean sea level. Known from Inner North Coast Ranges, San Francisco Bay area, western and central Great Valley. Reported blooming period is March through June.	Absent	Pasture areas in BSA are not suitable habitat due to of disturbance associated with agricultural practices and development
Alkali milk-vetch <i>Astragalus tener</i> var. <i>tener</i>	-/-/1B.2	Playas and grasslands with adobe clay soils and alkaline vernal pools at elevations below 196 feet above mean sea level. Historically found in western San Joaquin Valley, San Francisco Bay area, and Monterey County. Likely extirpated from all historical occurrences except those in Merced, Solano, and Yolo Counties. Reported blooming period is March through June.	Absent	Pasture areas in BSA are not suitable habitat due to of disturbance associated with agricultural practices and development. No suitable soils are present in the BSA.

Common Name Scientific Name	Status <sup>a</sup> Federal/State/ CNPS	General Habitat Description <sup>c</sup>	Habitat Present/ Absent <sup>e</sup>	Rationale
Heartscale <i>Atriplex cordulata</i>	-/-/1B.2	Alkali grassland, alkali meadow, and alkali scrub at elevations below 1,230 feet above mean sea level. Known from the western Central Valley and valleys of adjacent foothills. Reported blooming period is April through October.	Absent	No suitable vegetation communities are present in the BSA.
Brittlescale <i>Atriplex depressa</i>	-/-/1B.2	Alkaline or clay soils in chenopod scrub, valley and foothill grassland, vernal pools at elevations below 1,050 feet above mean sea level. Known from western and eastern Central Valley and adjacent foothills on west side of Central Valley. Reported blooming period is April through October.	Absent	No alkaline soils, chenopod scrub, or vernal pools present. Pasture areas in BSA are not suitable habitat due to of disturbance associated with agricultural practices and development.
San Joaquin spearscale <i>Atriplex joaquiniana</i>	-/-/1B.2	Alkali grassland, alkali meadow, alkali scrub, and saltbush scrub at elevations below 2,739 feet above mean sea level. Known from western margin of Central Valley from Glenn to Tulare Counties. Reported blooming period is April through October.	Absent	No suitable vegetation communities are present in the BSA.
Big tarplant <i>Blepharizonia plumosa</i>	-/-/1B.1	Dry hills and plains in annual grasslands at elevations of 98–1,657 feet above mean sea level. Known from the Interior Coast Range foothills in Alameda, Contra Costa, San Joaquin, Stanislaus <sup>b</sup> , and Solano <sup>b</sup> Counties. Reported blooming period is July through October.	Absent	Pasture areas in BSA are not suitable habitat due to of disturbance associated with agricultural practices and development. BSA outside species elevation range
Round-leaved filaree <i>Californica macrophylla</i> (formerly <i>Erodium macrophyllum</i> )	-/-/1B.1	Cismontane woodland, valley and foothill grassland on clay soils at elevations of 49–3,937 feet above mean sea level. Known from Sacramento Valley, northern San Joaquin Valley, Central Western California, South Coast, and northern Channel Islands (Santa Cruz Island). Reported blooming period is March through May.	Absent	Pasture areas in BSA are not suitable habitat due to of disturbance associated with agricultural practices and development.

Common Name Scientific Name	Status <sup>a</sup> Federal/State/ CNPS	General Habitat Description <sup>c</sup>	Habitat Present/ Absent <sup>e</sup>	Rationale
Chaparral harebell <i>Campanula exigua</i>	-/-1B.2	Chaparral on rocky, typically serpentine soils at elevations of 902–4,101 feet above mean sea level. Known from East San Francisco Bay area, Inner South Coast Ranges in Alameda, Contra Costa, San Benito, Santa Clara, and Stanislaus Counties. Reported blooming period is May through June.	Absent	No suitable vegetation communities or soils are present in the BSA. BSA is substantially lower than species elevation range.
Lemmon's jewelflower <i>Caulanthus coulteri</i> var. <i>lemmonii</i>	-/-1B.2	Valley and foothill grassland, pinyon-juniper woodland at elevations of 262–4,003 feet above mean sea level. Known from San Joaquin Valley, San Francisco Bay area, Inner and Outer South Coast Ranges. Reported blooming period is March through May.	Absent	BSA is substantially lower than species elevation range.
Congdon's tarplant <i>Centromadia parryi</i> ssp. <i>congdonii</i>	-/-1B.2	Alkaline soils in annual grassland, on lower slopes, flats, and swales at elevations below 754 feet above mean sea level. Known from East San Francisco Bay Area, Salinas Valley, and Los Osos Valley. Reported blooming period is May through October (uncommonly through November).	Absent	Pasture areas in BSA are not suitable habitat due to of disturbance associated with agricultural practices and development and no alkaline soils present.
Slough thistle <i>Cirsium crassicaule</i>	-/-1B.1	Chenopod scrub, sloughs, riparian scrub at elevations of 10–328 feet above mean sea level. Known from the San Joaquin Valley with occurrences in Kern, Kings, and San Joaquin Counties. Reported blooming period is May through August.	Absent	No suitable vegetation communities present in the BSA.
Mt. Hamilton thistle <i>Cirsium fontinale</i> var. <i>campylon</i>	-/-1B.2	Freshwater seeps and streams on serpentine outcrops, chaparral, cismontane woodland, valley and foothill grassland at elevations of 328–2,920 feet above mean sea level. Known from Mt. Hamilton Range; eastern San Francisco Bay area; Alameda, Santa Clara, and Stanislaus Counties. Reported blooming period is April through October (uncommonly through November).	Absent	BSA is substantially lower than species elevation range.

Common Name Scientific Name	Status <sup>a</sup> Federal/State/ CNPS	General Habitat Description <sup>c</sup>	Habitat Present/ Absent <sup>e</sup>	Rationale
Santa Clara red ribbons <i>Clarkia concinna</i> <i>ssp. automixa</i>	-/-/4.3	Shaded mesic oak woodland and chaparral at elevations of 295–4,921 feet above mean sea level. Known from the southern San Francisco Bay foothills in Alameda and Santa Clara Counties. Reported blooming period is April through July.	Absent	No suitable vegetation communities present and BSA is substantially lower than species elevation range.
Mt. Hamilton coreopsis <i>Coreopsis hamiltonii</i>	-/-/1B.2	Steep shale talus slopes in cismontane woodland at elevations of 1,804–4,265 feet above mean sea level. Known from the Diablo Range, Mt. Hamilton Range in Alameda, Santa Clara and Stanislaus Counties. Reported blooming period is March through May.	Absent	No suitable vegetation communities present and BSA is substantially lower than species elevation range.
Hospital Canyon larkspur <i>Delphinium californicum</i> ssp. <i>interius</i>	-/-/1B.2	Openings in chaparral, wet areas in cismontane woodland at elevations of 755–3,592 feet above mean sea level. Reported occurrences in Alameda, Contra Costa, Merced, San Benito, Santa Clara, San Joaquin, and San Luis Obispo Counties. Reported blooming period is April through June.	Absent	No suitable vegetation communities present and BSA is substantially lower than species elevation range.
Recurved larkspur <i>Delphinium recurvatum</i>	-/-/1B.2	Alkaline soils in annual grassland, chenopod scrub, cismontane woodland at elevations of 10–2,461 feet above mean sea level. Known from the San Joaquin Valley and interior valleys of the South Coast Ranges, Contra Costa County to Kern County. Reported blooming period is March through June.	Absent	No chenopod scrub, cismontane woodland, or alkaline soils are present. Pasture areas in BSA are not suitable habitat due to disturbance associated with agricultural practices and development.
Tracy's eriastrum <i>Eriastrum tracyi</i>	-/SR/1B.2	Chaparral, cismontane woodland, on gravelly shale or clay soils, often in open areas at elevations of 1,033–3,199 feet above mean sea level. Known from Colusa, Glenn, Santa Clara, Tehama, and Trinity Counties. Reported blooming period is June through July.	Absent	No suitable vegetation communities present and BSA is substantially lower than species elevation range.

Common Name Scientific Name	Status <sup>a</sup> Federal/State/ CNPS	General Habitat Description <sup>c</sup>	Habitat Present/ Absent <sup>e</sup>	Rationale
Delta button celery <i>Eryngium racemosum</i>	–/SE/1B.1	Riparian scrub in seasonally wet clay depressions at elevations of 10–98 feet above mean sea level. Known from occurrences in Merced, San Joaquin <sup>b</sup> , and Stanislaus Counties. Reported blooming period is June through October.	Absent	No suitable vegetation communities present in the BSA.
Diamond-petaled poppy <i>Eschscholzia rhombipetala</i>	–/–/1B.1	Valley and foothill grassland in alkaline or clay soils at elevations below 3,199 feet above mean sea level. Reported occurrences in the interior foothills of South Coast Ranges from Contra Costa <sup>b</sup> to Stanislaus Counties <sup>b</sup> , Carrizo Plain in San Luis Obispo County. Reported blooming period is March through April.	Absent	No alkaline soils present. Pasture areas in BSA are not suitable habitat due to disturbance associated with agricultural practices and development.
Talus fritillary <i>Fritillaria falcata</i>	–/–/1B.2	Chaparral, cismontane woodland, lower montane coniferous forest on serpentine, often talus, at elevations of 984–5,003 feet above mean sea level. Known from the San Francisco Bay area, Inner South Coast Ranges with occurrences in Alameda, Monterey, San Benito, Santa Clara, and Stanislaus Counties. Reported blooming period is March through May.	Absent	BSA does not contain suitable vegetation communities or soils and is substantially lower than species elevation range.
Diablo helianthella <i>Helianthella castanea</i>	–/–/1B.2	Broadleaved upland forest, chaparral, cismontane woodland, coastal scrub, riparian woodland, valley and foothill grassland at elevations of 197–4,265 feet above mean sea level. Known from northern San Francisco Bay area with occurrences in Alameda, Contra Costa, Marin <sup>b</sup> , San Francisco, and San Mateo <sup>b</sup> Counties. Reported blooming period is March through June.	Absent	No broadleaved upland forest, chaparral, coastal scrub, or cismontane woodland present and BSA is substantially lower than species elevation range.
Napa western flax <i>Hesperolinon serpentinum</i>	–/–/1B.1	Chaparral on serpentine soils at elevations of 164–2,625 feet above mean sea level. Known from fewer than 20 occurrences in Alameda, Lake, Napa, and Stanislaus Counties. Reported blooming period is May through July.	Absent	BSA does not contain suitable vegetation communities and is substantially lower than species elevation range.

Common Name Scientific Name	Status <sup>a</sup> Federal/State/ CNPS	General Habitat Description <sup>c</sup>	Habitat Present/ Absent <sup>e</sup>	Rationale
Woolly rose-mallow <i>Hibiscus lasiocarpus</i> var. <i>occidentalis</i>	-/-/1B.2	Freshwater marshes and swamps at elevations below 394 feet above mean sea level. Known from central and southern Sacramento Valley, deltaic Great Valley; central to southeastern United States. Reported blooming period is June through September.	Present	Identified as having low potential for occurrence in freshwater marsh in irrigation canal but not observed during multiple field surveys that coincided with blooming period. Nearest CNDDDB occurrence is 6 miles away.
Mason's lilaeopsis <i>Lilaeopsis masonii</i>	-/SR/1B.1	Freshwater marsh in tidally influenced areas, brackish marsh, and tidal streambanks in riparian scrub at elevations below 33 feet above mean sea level. Known from the southern Sacramento Valley, Sacramento River–San Joaquin River Delta, and northeast San Francisco Bay area. Alameda, Contra Costa, Marin <sup>b</sup> , Napa, Sacramento, San Joaquin, and Solano Counties. Reported blooming period is April through November.	Absent	Freshwater marsh in irrigation canal is not tidally influenced and not observed during multiple field surveys that coincided with blooming period. Nearest CNDDDB occurrence is ~2 miles away in the Old River.
Delta mudwort <i>Limosella subulata</i>	-/-/2.1	Muddy or sandy intertidal flats within marshes and swamps at elevations below 10 feet above mean sea level. Known from occurrences in Contra Costa, Sacramento, San Joaquin, and Solano Counties; Oregon. Reported blooming period is May through August.	Absent	Freshwater marsh in irrigation canal is not tidally influenced and BSA is substantially higher than species elevation range.
Showy golden madia <i>Madia radiata</i>	-/-/1B.1	Cismontane woodland, valley and foothill grassland at elevations of 82–2,953 feet above mean sea level. Reported occurrences in Contra Costa <sup>b</sup> , Fresno, Kings <sup>b</sup> , Kern, Monterey <sup>b</sup> , Santa Barbara <sup>b</sup> , San Benito, San Joaquin <sup>b</sup> , and San Luis Obispo Counties. Reported blooming period is March through May.	Absent	No cismontane woodland present and grassland areas in BSA are not suitable habitat due to disturbance associated with agricultural practices and development. Highest elevation in BSA has minimal overlap with species elevation range.

Common Name Scientific Name	Status <sup>a</sup> Federal/State/ CNPS	General Habitat Description <sup>c</sup>	Habitat Present/ Absent <sup>e</sup>	Rationale
Hall's bush mallow <i>Malacothamnus hallii</i>	-/-/1B.2	Chaparral and coastal scrub at elevations of 33–2,493 feet above mean sea level. Reported occurrences in Alameda(?), Contra Costa, Merced, Santa Clara, and Stanislaus Counties. Reported blooming period is May through September (uncommonly through October).	Absent	No suitable vegetation communities present in the BSA.
Mt. Diablo cottonweed <i>Micropus amphibolus</i>	-/-/3.2	Rocky areas in broadleaved upland forest, chaparral, cismontane woodland, and valley and foothill grassland at elevations of 148–2,707 feet above mean sea level. Known from southern North Coast Ranges, San Francisco Bay area, southern Outer South Coast Ranges. Reported blooming period is March through May.	Absent	No broadleaved upland forest, chaparral, or cismontane woodland present and BSA is substantially lower than species elevation range.
Little mousetail <i>Myosurus minimus</i> ssp. <i>apus</i>	-/-/3.1	Alkaline soils in valley and foothill grassland, vernal pools at elevations of 66–2,100 feet above mean sea level. Known from scattered occurrences from Colusa to San Diego Counties. Reported blooming period is March through June.	Absent	No alkaline soils or vernal pools present.
Mt. Diablo phacelia <i>Phacelia phacelioides</i>	-/-/1B.2	Rocky areas in chaparral and cismontane woodland at elevations of 1,640–4,495 feet above mean sea level. Known from fewer than 20 occurrences in Contra Costa, San Benito, Santa Clara, and Stanislaus Counties. Reported blooming period is April through May.	Absent	BSA does not contain suitable vegetation communities and is substantially lower than species elevation range.
Sanford's arrowhead <i>Sagittaria sanfordii</i>	-/-/1B.2	Freshwater marshes, sloughs, canals, and other slow-moving water habitats; below 2,132 feet above mean sea level. Known from scattered locations in Central Valley and Coast Ranges from Del Norte to Fresno Counties. Reported blooming period is May through October.	Present	Identified as having low potential for occurrence in freshwater marsh in irrigation canal but not observed during multiple field surveys that coincided with blooming period.

Common Name Scientific Name	Status <sup>a</sup> Federal/State/ CNPS	General Habitat Description <sup>c</sup>	Habitat Present/ Absent <sup>e</sup>	Rationale
Marsh skullcap <i>Scutellaria galericulata</i>	-/-/2.2	Lower montane coniferous forest, mesic meadows and seeps, marshes and swamps at elevations below 6,890 feet above mean sea level. Known from the northern High Sierra Nevada and the Modoc Plateau with occurrences in El Dorado, Lassen, Modoc, Nevada, Placer, Plumas, Shasta, San Joaquin, and Siskiyou Counties; Oregon. Reported blooming period is June through September.	Present	Identified as having low potential for occurrence in freshwater marsh in irrigation canal but not observed during multiple field surveys that coincided with blooming period. Nearest CNDDDB occurrence is 9.5 miles away.
Chaparral ragwort <i>Senecio aphanactis</i>	-/-/2.2	Alkaline areas in chaparral, cismontane woodland, and coastal scrub at elevations of 49–2,625 feet above mean sea level. Known from Central Western California, South Coast, Channel Islands. Reported blooming period is January through April.	Absent	No suitable vegetation communities or soils are present in the BSA.
Suisun marsh aster <i>Symphotrichum lentum</i> (formerly <i>Aster lentus</i> )	-/-/1B.2	Brackish and freshwater marshes and swamps at elevations below 10 feet above mean sea level. Known from the Sacramento River–San Joaquin River Delta, Suisun Marsh, and Suisun Bay. Contra Costa, Napa, Sacramento, San Joaquin, and Solano Counties. Reported blooming period is May through November.	Present	Identified as having low potential for occurrence in freshwater marsh in irrigation canal but not observed during multiple field surveys that coincided with blooming period. No brackish marsh or swamps present and BSA is higher than species elevation range.
Wright's trichocoronis <i>Trichocoronis wrightii</i> var. <i>wrightii</i>	-/-/2.1	Alkaline areas in meadows and seeps, marshes and swamps, riparian scrub, vernal pools at elevations of 16–1,427 feet above sea level. Known from occurrences in Colusa <sup>b</sup> , Merced, Riverside, San Joaquin <sup>b</sup> , and Sutter <sup>b</sup> Counties. Nearly extirpated in the Central Valley. Reported blooming period is May through September.	Absent	No alkaline areas present in the BSA.
Caper-fruited trepidocarpum <i>Trepidocarpum capparideum</i>	-/-/1B.1	Alkaline hills in valley and foothill grassland at elevations below 1,493 feet above mean sea level. Known from the northwestern San Joaquin Valley. Reported blooming period is March through April.	Absent	No alkaline conditions present and pasture areas in BSA are not suitable habitat due to disturbance associated with agricultural practices and development.

<sup>a</sup> Status explanations:

– = no listing.

**Federal**

FE = listed as endangered under the federal Endangered Species Act.

**State**

SE = listed as endangered under the California Endangered Species Act.

SR = listed as rare under the California Native Plant Protection Act; this category is no longer used for newly listed plants, but some plants previously listed as rare retain this designation.

**California Native Plant Society**

1B = List 1B species: rare, threatened, or endangered in California and elsewhere.

2 = List 2 species: rare, threatened, or endangered in California but more common elsewhere.

3 = List 3 species: more information is needed—review list.

4 = List 4 species: limited distribution—a watch list

.1 = seriously endangered in California

.2 = fairly endangered in California

.3 = not very endangered in California

<sup>b</sup> = known populations believed extirpated from that County

? = species occurrence within the County uncertain

<sup>c</sup> Geographic distribution information provided includes subdivisions of the California Floristic Province (Hickman 1993).

<sup>e</sup> Geographic distribution information provided includes subdivisions of the California Floristic Province (Hickman 1993).

**Table 4: Special-Status Wildlife Species Identified During Prefield Investigation as Having Potential to Occur in the I-205/Lammers Road/West Eleventh Street Interchange Project BSA**

Common Name <i>Scientific Name</i>	Status <sup>a</sup> Federal/State	General Habitat Description <sup>b</sup>	Habitat Present/ Absent <sup>c</sup>	Rationale
<b>Invertebrates</b>				
Valley elderberry longhorn beetle <i>Desmocerus californicus dimorphus</i>	T/-	Streamside habitats below 3,000 feet throughout the Central Valley. Riparian and oak savanna habitats with elderberry shrubs; elderberries are the host plant.	Absent	No CNDDDB records occur within 10 miles of the BSA. There are no elderberry shrubs in the BSA.
Vernal pool fairy shrimp <i>Branchinecta lynchi</i>	T/-	Central Valley, central and south Coast Ranges from Tehama County to Santa Barbara County. Isolated populations also in Riverside County. Common in vernal pools; also found in sandstone rock outcrop pools.	Absent	One CNDDDB record occurs 7 miles northeast of the BSA. No vernal pools, seasonal wetlands, rock outcrop pools, or other suitable water bodies are present in the BSA.
Vernal pool tadpole shrimp <i>Lepidurus packardii</i>	E/-	Occurs in the Central Valley of California from Shasta County south to Tulare County. Deep vernal pools, vernal pools that inundate for extended periods of time, and ephemeral stock ponds.	Absent	No CNDDDB records occur within 10 miles of the BSA. No vernal pools or suitable ponds are present in the BSA.
<b>Amphibians</b>				
California tiger salamander <i>Ambystoma californiense</i>	T/T	Central Valley, including Sierra Nevada foothills, up to approximately 1,000 feet, and coastal region from Butte County south to northeastern San Luis Obispo County. Small ponds, lakes, or vernal pools in grasslands and oak woodlands for larvae; rodent burrows, rock crevices, or fallen logs for cover for adults and for summer dormancy.	Absent	Numerous CNDDDB records occur within 10 miles of the BSA (closest occurrence is 6 miles to the west). BSA does not contain suitable breeding habitat. Upland areas are unlikely to be utilized by species due to the high level of human disturbance and absence of nearby breeding habitat.

Common Name Scientific Name	Status <sup>a</sup> Federal/State	General Habitat Description <sup>b</sup>	Habitat Present/ Absent <sup>c</sup>	Rationale
California red-legged frog <i>Rana aurora draytonii</i>	T/SSC	Found along the coast and coastal mountain ranges of California from Marin County to San Diego County and in the Sierra Nevada from Butte County to Stanislaus County. Permanent and semipermanent aquatic habitats, such as creeks and cold-water ponds, with emergent and submergent vegetation. May estivate in rodent burrows or cracks during dry periods.	Absent	Numerous CNDDDB records occur within 10 miles of the BSA (closest occurrence 2.5 miles to the northeast). BSA does not contain suitable breeding habitat. Upland areas are unlikely to be utilized by species due to the high level of human disturbance and absence of nearby breeding habitat.
Foothill yellow-legged frog <i>Rana boylei</i>	-/SSC	Occurs in the Klamath, Cascade, north Coast, south Coast, Transverse, and Sierra Nevada Ranges up to approximately 6,000 feet. Creeks or rivers in woodland, forest, mixed chaparral, and wet meadow habitats with rock and gravel substrate and low overhanging vegetation along the edge. Usually found near riffles with rocks and sunny banks nearby.	Absent	One CNDDDB record occurs 10 miles southwest of the BSA. No creeks, rivers, or other suitable drainages are present in the BSA.
Western spadefoot <i>Spea hammondi</i>	-/SSC	Sierra Nevada foothills, Central Valley, Coast Ranges, coastal counties in southern California. Shallow streams with riffles and seasonal wetlands, such as vernal pools in annual grasslands and oak woodlands.	Absent	CNDDDB records occur within 10 miles (closest is approximately 7 miles to the south) of the BSA. No streams, vernal pools, or seasonal wetlands occur in the BSA.
<b>Reptiles</b>				
Alameda whipsnake <i>Masticophis lateralis euryxanthus</i>	T/T	Restricted to Alameda and Contra Costa Counties; fragmented into five disjunct populations throughout its range. Valleys, foothills, and low mountains associated with northern coastal scrub or chaparral habitat; requires rock outcrops for cover and foraging	Absent	BSA outside of the range of this species.

Common Name Scientific Name	Status <sup>a</sup> Federal/State	General Habitat Description <sup>b</sup>	Habitat Present/ Absent <sup>c</sup>	Rationale
Giant garter snake <i>Thamnophis gigas</i>	T/T	Central Valley from the vicinity of Burrell in Fresno County north to near Chico in Butte County; has been extirpated from areas south of Fresno. Sloughs, canals, low gradient streams and freshwater marsh habitats where there is a prey base of small fish and amphibians; also found in irrigation ditches and rice fields; requires grassy banks and emergent vegetation for basking and areas of high ground protected from flooding during winter.	Present	Moderate -No CNDDDB records occur within 10 miles of the BSA. Five extant occurrences of this species known from San Joaquin County; all located north of Tracy. Irrigation canals, ditches and marshes in the BSA have potential to support this species.
Silvery legless lizard <i>Anniella pulchra pulchra</i>	-/SSC	Along the Coast, Transverse, and Peninsular Ranges from Contra Costa County to San Diego County with spotty occurrences in the San Joaquin Valley. Habitats with loose soil for burrowing or thick duff or leaf litter; often forages in leaf litter at plant bases; may be found on beaches, sandy washes, and in woodland, chaparral, and riparian areas	Absent	One CNDDDB record occurs within 10 miles (approximately 7 miles to the southwest) of the BSA. Suitable habitat is not present in the BSA.
San Joaquin whipsnake <i>Masticophis flagellum ruddocki</i>	-/SSC	From Colusa county in the Sacramento Valley southward to the grapevine in the San Joaquin Valley and westward into the inner coast ranges. An isolated population occurs at Sutter Buttes. Known elevational range from 66 to 2,953 feet. Occurs in open, dry, vegetative associations with little or no tree cover. It occurs in valley grassland and saltbush scrub associations. Often occurs in association with mammal burrows	Absent	CNDDDB records occur within 10 miles (closest approximately 6 miles to the south) of the BSA. BSA does not contain suitable habitat for species.
California horned lizard <i>Phrynosoma coronatum frontale</i>	-/SSC	Sacramento Valley, including foothills, south to southern California; Coast Ranges south of Sonoma County; below 4,000 feet in northern California. Grasslands, brushlands, woodlands, and open coniferous forest with sandy or loose soil; requires abundant ant colonies for foraging	Absent	Numerous CNDDDB records occur within 10 miles (closest approximately 3.5 miles to the southwest) of the BSA. BSA does not contain suitable habitat for species; irrigated pasturelands unlikely to support species.

Common Name Scientific Name	Status <sup>a</sup> Federal/State	General Habitat Description <sup>b</sup>	Habitat Present/ Absent <sup>c</sup>	Rationale
Western pond turtle <i>Actinemys marmorata</i>	-/SSC	The western pond turtle is uncommon to common in suitable aquatic habitat throughout California, west of the Sierra-Cascade crest and absent from desert regions, except in the Mojave Desert along the Mojave River and its tributaries. Occupies ponds, marshes, rivers, streams, and irrigation canals with muddy or rocky bottoms and with watercress, cattails, water lilies, or other aquatic vegetation in woodlands, grasslands, and open forests. Nests are typically constructed in upland habitat within 0.25 mile of aquatic habitat.	Present	Numerous CNDDDB records occur within 10 miles (closest is approximately 1.5 miles to the northwest) of the BSA. Irrigation canals within the BSA have some potential to support species though adjacent upland areas consist mostly of agricultural lands which are not suitable for breeding or cover habitat
<b>Birds</b>				
Burrowing owl <i>Athene cunicularia</i>	-/SSC	Lowlands throughout California, including the Central Valley, northeastern plateau, southeastern deserts, and coastal areas; rare along south coast. Level, open, dry, heavily grazed, or low stature grassland or desert vegetation with available burrows.	Present	Burrowing owls are reported to nest in the BSA. BSA contains suitable nesting and foraging habitat for this species. Individuals were observed nesting in the BSA.
Golden eagle <i>Aquila chrysaetos</i>	-/FP	Foothills and mountains throughout California. Uncommon nonbreeding visitor to lowlands such as the Central Valley. Nest on cliffs and escarpments or in tall trees overlooking open country. Forages in annual grasslands, chaparral, and oak woodlands with plentiful medium and large-sized mammals	Absent	One CNDDDB nest record occurs within 10 miles of the BSA. BSA contains potential foraging habitat in pasturelands, but is unlikely to be utilized by golden eagle due to the high level of adjacent human disturbance.
Loggerhead shrike <i>Lanius ludovicianus</i>	-/SSC	Resident and winter visitor in lowlands and foothills throughout California; rare on coastal slope north to Mendocino County, occurring only in winter. Prefers open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches	Present	Numerous CNDDDB records occur within 10 miles (closest approximately 3 miles to the northwest) of the BSA. Suitable foraging and nesting habitat in the BSA.

<b>Common Name Scientific Name</b>	<b>Status<sup>a</sup> Federal/State</b>	<b>General Habitat Description<sup>b</sup></b>	<b>Habitat Present/ Absent<sup>c</sup></b>	<b>Rationale</b>
Northern harrier <i>Circus cyaneus</i>	-/SSC	Throughout lowland California; has been recorded in fall at high elevations. Grasslands, meadows, marshes, and seasonal and agricultural wetlands providing tall cover. Nests on ground in shrubby vegetation, usually at the edge of a marsh.	Present	One historic CNDDDB nest record occurs within 10 miles of the BSA. BSA contains suitable foraging habitat and low quality nesting habitat.
Swainson's hawk <i>Buteo swainsoni</i>	-/T	Lower Sacramento and San Joaquin Valleys, the Klamath Basin, and Butte Valley. Highest nesting densities occur near Davis and Woodland, Yolo County. Nests in small stands of oaks or cottonwoods in or near open riparian habitats; forages in grasslands, irrigated pastures, and grain fields adjacent to nest locations.	Present	Swainson's hawks are reported to nest in the BSA. Individuals were observed flying overhead in the BSA on all survey dates.
Tricolored blackbird <i>Agelaius tricolor</i>	-/SSC	Largely endemic to California; permanent resident in the Central Valley from Butte County to Kern County; at scattered coastal locations from Marin County south to San Diego County; breeds at scattered locations in Lake, Sonoma, and Solano Counties; rare nester in Siskiyou, Modoc, and Lassen Counties. Nests in dense colonies in emergent marsh vegetation, such as tules and cattails, or upland sites with blackberries, nettles, thistles, and grain fields; nesting habitat must be large enough to support 50 pairs; probably requires water at or near the nesting colony; requires large foraging areas, including marshes, pastures, agricultural wetlands, dairies, and feedlots, where insect prey is abundant.	Absent	CNDDDB records occur within 10 miles (closest is approximately 2.5 miles to the southwest) of the BSA. Vegetation in irrigation ditches would not support a nesting colony. BSA contains potential foraging habitat only with very low potential to be utilized by species due to the lack of nearby suitable nesting habitat.

Common Name Scientific Name	Status <sup>a</sup> Federal/State	General Habitat Description <sup>b</sup>	Habitat Present/ Absent <sup>c</sup>	Rationale
White-tailed kite <i>Elanus leucurus</i>	–/FP	Lowland areas west of Sierra Nevada from the head of the Sacramento Valley south, including coastal valleys and foothills, to western San Diego County at the Mexican border. Low foothills or valley areas with valley or live oaks, riparian areas, and marshes near open grasslands for foraging.	Present	One CNDDDB nest record occurs within 10 miles of the BSA. BSA contains suitable foraging and limited suitable nesting habitat.
Western yellow-billed cuckoo <i>Coccyzus americanus occidentalis</i>	–/E	Nests along the upper Sacramento, lower Feather, south fork of the Kern, Amargosa, Santa Ana, and Colorado Rivers. Wide, dense riparian forests with a thick understory of willows for nesting; sites with a dominant cottonwood overstory are preferred for foraging; may avoid valley-oak riparian habitats where scrub jays are abundant	Absent	No CNDDDB records occur within 10 miles of the BSA. BSA does not contain suitable foraging or nesting habitat for this species
<b>Mammals</b>				
American badger <i>Taxidea taxus</i>	–/SSC	Statewide except for the northwestern corner in Del Norte County and parts of Humboldt and Siskiyou Counties. Typically found in drier open stages of most shrub, forest, and herbaceous habitats with dry, friable soils.	Present (low potential to be utilized by species)	Numerous CNDDDB records occur within 10 miles of the BSA (closest occurrence 2.2 miles). However, based on the low quality of habitat within the BSA, there is a low potential that it would be utilized by the species.
Pallid bat <i>Antrozous pallidus</i>	–/SSC (WBWG High Priority)	Low elevations throughout California. Occurs in a variety of habitats from desert to coniferous forest; most closely associated with oak, yellow pine, redwood, and giant sequoia habitats in northern California. Prefers rocky outcrops, cliffs, and crevices with access to open habitats for foraging. Uses caves, crevices, mines, and hollow trees for roosting.	Present (low potential to be utilized by species)	Two CNDDDB records occur within 10 miles (closest approximately 9.5 miles to the south) of the BSA. Species may forage over BSA canals, ditches, and irrigated pastures. Potential breeding habitat limited to trees though species is unlikely to roost within BSA due to high levels of human disturbance associated with roads and highway.

<b>Common Name Scientific Name</b>	<b>Status<sup>a</sup> Federal/State</b>	<b>General Habitat Description<sup>b</sup></b>	<b>Habitat Present/ Absent<sup>c</sup></b>	<b>Rationale</b>
Townsend's big-eared bat <i>Corynorhinus townsendii</i>	–/SSC (WBWG High Priority)	Widespread throughout California. Roosts in caves, tunnels, mines, crevices, hollow trees, and buildings; usually near water.	Present (low potential to be utilized by species)	One CNDDDB record occurs within 10 miles of the BSA. Species may forage over BSA canals, ditches, and irrigated pastures. BSA does not contain breeding habitat for this species.
Western red bat <i>Lasiurus blossevillii</i>	–/SSC (WBWG High Priority)	Scattered throughout much of California at lower elevations. Found primarily in riparian and wooded habitats. Occurs at least seasonally in urban areas. Day roosts in trees within the foliage. Found in fruit orchards and sycamore riparian habitats in the central valley	Present (low potential to be utilized by species)	No CNDDDB records occur within 10 miles of the BSA. Species may forage over BSA canals, ditches, and irrigated pastures; unlikely to roost in BSA due to high levels of human disturbance associated with roads and highway.
Western mastiff bat <i>Eumops perotis californicus</i>	–/SSC (WBWG High Priority)	Occurs along the western Sierra primarily at low to mid elevations and widely distributed throughout the southern coast ranges. Recent surveys have detected the species north to the Oregon border. Roosts and breeds in deep, narrow rock crevices; may also use crevices in trees, buildings, and tunnels; forages in a variety of semiarid to arid habitats.	Present (low potential to be utilized by species)	One CNDDDB record occurs within 10 miles of the BSA. Species may forage over BSA canals, ditches, and irrigated pastures. Potential breeding habitat limited to trees though species is unlikely to roost within BSA due to high levels of human disturbance associated with roads and highway.
Riparian (San Joaquin Valley) woodrat <i>Neotoma fuscipes riparia</i>	E/SSC	Historical distribution along the San Joaquin, Stanislaus, and Tuolumne Rivers, and Caswell State Park in San Joaquin, Stanislaus, and Merced Counties; presently limited to San Joaquin County at Caswell State Park and a possible second population near Vernalis. Riparian habitats with dense shrub cover, willow thickets, and an oak overstory	Absent	No CNDDDB records occur within 10 miles of the BSA. The BSA does not contain habitat capable of supporting this species.

Common Name Scientific Name	Status <sup>a</sup> Federal/State	General Habitat Description <sup>b</sup>	Habitat Present/ Absent <sup>c</sup>	Rationale
Riparian brush rabbit <i>Sylvilagus bachmani riparius</i>	E/E	Limited to San Joaquin County at Caswell State Park near the confluence of the Stanislaus and San Joaquin Rivers and Paradise Cut area on Union Pacific right-of-way lands. Native valley riparian habitats with large clumps of dense shrubs, low-growing vines, and some tall shrubs and trees	Absent	CNDDDB records occur within 10 miles (approximately 8 miles to the northeast) of the BSA. These records are in habitat known to be critical to the continued survival of this species. The BSA does not contain habitat capable of supporting this species
San Joaquin kit fox <i>Vulpes macrotis mutica</i>	E/T	Principally occurs in the San Joaquin Valley and adjacent open foothills to the west; recent records from 17 counties extending from Kern County north to Contra Costa County. Saltbush scrub, grassland, oak, savanna, and freshwater scrub.	Present (low potential to be utilized by species)	Though, numerous CNDDDB records occur within 10 miles (closest is approximately 2 miles to the southwest). However, based on the low quality of habitat within the BSA, there is a low potential that it would be utilized by the species.
<b>Fish</b>				
Green sturgeon <i>Acipenser medirostris</i>	T/SSC	In California they are known to spawn in the Sacramento River and Klamath River Basin. An anadromous fish that spawns in deep pools or "holes" in large, turbulent, freshwater river mainstems. Early life stages may remain in freshwater for up to two years	Absent	No suitable habitat present
Delta smelt <i>Hypomesus transpacificus</i>	T/T	Primarily in the Sacramento–San Joaquin Estuary, but has been found as far upstream as the mouth of the American River on the Sacramento River and Mossdale on the San Joaquin River; range extends downstream to San Pablo Bay. Occurs in estuary habitat in the Delta where fresh and brackish water mix in the salinity range of 2–7 parts per thousand (Moyle 2002).	Absent	No suitable habitat is present

Common Name Scientific Name	Status <sup>a</sup> Federal/State	General Habitat Description <sup>b</sup>	Habitat Present/ Absent <sup>c</sup>	Rationale
Central Valley steelhead <i>Oncorhynchus mykiss</i>	T/-	Sacramento and San Joaquin River and their tributaries. An anadromous fish that spawns and spends a portion of its life in inland streams, typically maturing in the open ocean.	Absent	No suitable habitat is present
Winter-run Chinook salmon, Sacramento River <i>Oncorhynchus tshawytscha</i>	E/E	Sacramento River and its tributaries. An anadromous fish that spawns and spends a portion of its life in inland streams, typically maturing in the open ocean.	Absent	No suitable habitat is present
Central Valley spring-run Chinook salmon <i>Oncorhynchus tshawytscha</i>	T/T	Sacramento and San Joaquin River and their tributaries. An anadromous fish that spawns and spends a portion of its life in inland streams, typically maturing in the open ocean.	Absent	No suitable habitat is present

<sup>a</sup> Status explanations:

**Federal**

E = listed as endangered under the federal Endangered Species Act.

T = listed as threatened under the federal Endangered Species Act.

C = species for which USFWS has on file sufficient information on biological vulnerability and threat(s) to support issuance of a proposed rule to list, but issuance of the proposed rule is precluded.

- = no listing.

**State**

E = listed as endangered under the California Endangered Species Act.

T = listed as threatened under the California Endangered Species Act.

FP = fully protected under the California Fish and Game Code.

SSC = species of special concern in California.

- = no listing.

**Western Bat Working Group** (WBWG) Available: [http://www.wbwg.org/spp\\_matrix.html](http://www.wbwg.org/spp_matrix.html)

High priority = species are imperiled or at high risk of imperilment.

Moderate priority = this designation indicates a level of concern that should warrant closer evaluation, more research, and conservation actions of both the species and possible threats. A lack of meaningful information is a major obstacle in adequately assessing these species' status and should be considered a threat.

<sup>b</sup> Geographic distribution information provided includes subdivisions of the California Floristic Province (Hickman 1993).

<sup>c</sup> Geographic distribution information provided includes subdivisions of the California Floristic Province (Hickman 1993).

### 3.2.3. Sensitive Habitats in the Project Region

According to the CNDDDB, five sensitive natural communities are known to occur in the project region: alkali meadow, Great Valley cottonwood riparian forest, Great Valley oak riparian forest, coastal and valley freshwater marsh, northern claypan vernal pool, valley sink scrub (California Natural Diversity Database 2010). Coastal and valley freshwater marsh (i.e., freshwater marsh) was the only sensitive natural community observed in the BSA.

### 3.2.4. California Natural Diversity Database Search Results

A search of the CNDDDB indicated that 51 sensitive species (22 plant species and 29 wildlife species) have been documented within approximately 10 miles of the BSA (Figures 4 and 5, respectively) (California Natural Diversity Database 2010).

Appendix C contains the CNDDDB search results for all sensitive species occurrences within the project region (i.e., the Tracy and Union Island USGS 7.5-minute quadrangles plus the adjacent quadrangles), and includes 8 sensitive plant species that have not been documented within 10 miles of the BSA (and thus do not appear in Figure 4) (California Natural Diversity Database 2010). Therefore, a total of 30 sensitive plant species were identified by the CNDDDB as occurring in the project region (California Natural Diversity Database 2010).

### 3.2.5. U.S. Fish and Wildlife Service Species List

The USFWS list included 14 threatened and endangered species (one plant species, eight wildlife species, and five fish species) that may occur in the BSA or be affected by projects in San Joaquin County and the Tracy and Union Island USGS 7.5-minute quadrangles (Appendix B) (U.S. Fish and Wildlife Service 2010).

### 3.2.6. California Native Plant Society Search Results

A search of CNPS's online *Inventory of Rare and Endangered Plants* for the Tracy USGS 7.5-minute quadrangle and the eight surrounding quadrangles identified 34 sensitive plant species from the project region (California Native Plant Society 2010).

### 3.2.7. Sensitive Plant Species

A total of 38 sensitive plant species were identified as occurring in the project region (California Native Plant Society 2010; California Natural Diversity Database 2010; U.S. Fish and Wildlife Service 2010). This total accounts for the overlap in sensitive plant species identified among the CNDDDB, USFWS, and CNPS. The common name, scientific name, legal status, geographic distribution, habitat requirements, blooming period, and rationale for likelihood of occurrence for the 38 sensitive plant species are

provided in Table 3. For 35 of the 38 sensitive plant species, either suitable habitat (e.g., chaparral, cismontane woodland, vernal pool) or microhabitat (i.e., tidal flats, alkaline soils) is not present in the BSA, or the BSA occurs outside the known elevation range of the species (California Native Plant Society 2010). Additionally, the pasture, which is an artificially created and maintained community, does not constitute potential habitat for sensitive plant species that can occur in grasslands.

The remaining three sensitive species were identified as having low potential to occur in the freshwater marsh within one of the irrigation canals: rose-mallow (*Hibiscus lasiocarpus*), Sanford's arrowhead (*Sagittaria sanfordii*), and marsh skullcap (*Scutellaria galericulata*). The timing of the July 14, 2006 wetland delineation and the wetland delineation and botanical survey conducted during the September 30, 2009 site visit coincided with the blooming periods of these four species but they were not observed. The nearest recorded sensitive plant species, caper-fruited tropidocarpum (*Tropidocarpum capparideum*), was reported approximately 1.5 miles east of the BSA (California Natural Diversity Database 2010). No alkaline soils have been identified within the project area and caper-fruited tropidocarpum would have been recognizable during the botanical surveys in May 2006 and April 2007. Additionally, no sensitive plant species were observed during the May 16, 2005, and April 6, 2007 botanical surveys and no sensitive plants have been previously recorded in the BSA (California Natural Diversity Database 2010).

Based on the lack of suitable habitat requirements and negative results of botanical field surveys, it was determined that the BSA did not support sensitive plant species.

### **3.2.8. Sensitive Wildlife Species**

During the prefield investigation, 29 sensitive wildlife species were identified as having the potential to occur within the project region (Table 4). After completion of the field survey and review of species distribution and habitat requirements data, the wildlife biologist determined that there is either no habitat or limited low quality habitat for 22 of the 29 species with potential to occur in the BSA. All but two of these species are discussed in Table 4 and are not discussed further in this NES. Two of these species, American badger and San Joaquin kit fox are discussed further in this NES because it was determined that a more detailed discussion of these species was warranted though no avoidance, minimization, or compensation is proposed for these species. The remaining seven sensitive wildlife species—western pond turtle, giant garter snake, Swainson's hawk, white-tailed kite, northern harrier, western burrowing owl, and loggerhead shrike,—have at least a moderate potential to occur in

the BSA and therefore may be affected by project construction activities. These species are discussed in more detail in Chapter 4.

### **3.2.9. Sensitive Fish Species**

Based on a review of existing information, five sensitive fish species (which includes two Chinook salmon runs)—Delta smelt (*Hypomesus transpacificus*), Central Valley steelhead (*Oncorhynchus mykiss*), Central Valley spring-run and winter-run Chinook salmon (*Oncorhynchus tshawytscha*), and green sturgeon (*Acipenser medirostris*)—were initially identified as having the potential to occur within the project region.

None of the sensitive fish species have potential to occur in the BSA because the BSA lacks suitable water bodies for these species. Therefore, sensitive fish species are not discussed further.

### **3.2.10. Other Protected Species**

Non-sensitive migratory birds, including raptors, have the potential to nest in trees throughout the BSA. Although these species are not considered sensitive wildlife species, their occupied nests and eggs are protected by CFGC sections 3503 and 3503.5 and the MBTA.



## Chapter 4. Results: Biological Resources, Discussion of Impacts and Mitigation

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### 4.1. Natural Communities of Special Concern

The vegetation communities occurring in the BSA are all the result of the history of human activities, particularly agricultural practices, but also commercial and residential development in the BSA. The only sensitive vegetation community in the BSA is the freshwater marsh that comprises the emergent wetland.

#### 4.1.1. Freshwater Marsh

##### 4.1.1.1. SURVEY RESULTS

The freshwater marsh vegetation community is described in Section 3.1.3.1. This community (i.e., coastal and valley freshwater marsh) is identified as a sensitive natural community in the CNDDDB (California Natural Diversity Database 2010). Three areas of freshwater marsh occur within one of the unnamed irrigation canals and appear to receive a perennial water supply.

##### 4.1.1.2. AVOIDANCE AND MINIMIZATION EFFORTS

Construction of either project alternative would result in permanent and temporary effects on the freshwater marsh in the BSA. Although these effects cannot be avoided during project construction, the temporary effects on the areas of freshwater marsh (and segments of the unnamed irrigation canal that contains the freshwater marsh) adjacent to the construction zone can be minimized by implementing erosion control measures. Erosion control features will be installed adjacent to the construction zone to prevent soil or other materials from entering areas of freshwater marsh (and the irrigation canal in which they occur). Erosion control features will be placed in areas that are upslope or adjacent to the areas of freshwater marsh. The locations of erosion control features will be identified on the final grading plans and construction specifications. Natural/biodegradable erosion control measures (i.e., coir rolls, straw wattles or hay bales) will be used.

##### 4.1.1.3. PROJECT IMPACTS

Construction activities associated with the proposed project would result in permanent and temporary effects on freshwater marsh for each project alternative (Table 5, Figures 6 and 7). However, Alternative 5A would result in fewer permanent and temporary effects on freshwater marsh than Alternative 1. Culvert installation

will occur at the locations where the proposed interchange roadways would cross the Lower Main Canal, the perennial irrigation ditch, and the unnamed irrigation canal that contains the freshwater marsh (Dadala pers. comm.). The culvert installation would result in permanent effects on the freshwater marsh freshwater marsh. Though the marsh areas within the project footprint would be permanently lost, the temporary cessation of water in the canal, required during culvert installation, is assumed to not affect the marsh outside of the footprint because the perennial, emergent vegetation that comprises the marsh does not require constant inundation to survive.

**Table 5: Impacts on Freshwater Marsh (acres)**

	<b>Alternative 1</b>	<b>Alternative 5A</b>
Permanent	0.10	0.07
Temporary	0.38	0.26

**4.1.1.4. COMPENSATORY MITIGATION**

As part of the permitting process, the City will compensate for permanent effects on waters of the United States (including wetlands) and waters of the state to ensure there is no net loss of wetland habitat functions and values. The compensation will be determined as part of the state (Section 401 water quality certification or WDRs) and federal (Section 404 nationwide permit) processes and may be a combination of onsite or off-site restoration/creation and mitigation credits. Compensation for the loss of wetlands will include restoring or enhancing in-kind wetland habitat at a minimum ratio of 1:1 (1 acre of mitigation for every 1 acre of impact) but the final ratio will be determined through the project-specific permitting process and through coordination with resource agencies to ensure no net loss of wetland habitat functions and values.

**4.1.1.5. CUMULATIVE IMPACTS**

With the implementation of the compensatory measure described above under Section 4.1.1.4, there would be no net loss of wetland habitat functions and values for waters of the United States, including wetlands. As such, no contribution to a cumulative impact on waters of the United States, including wetlands, would result from construction of either alternative of the proposed project.

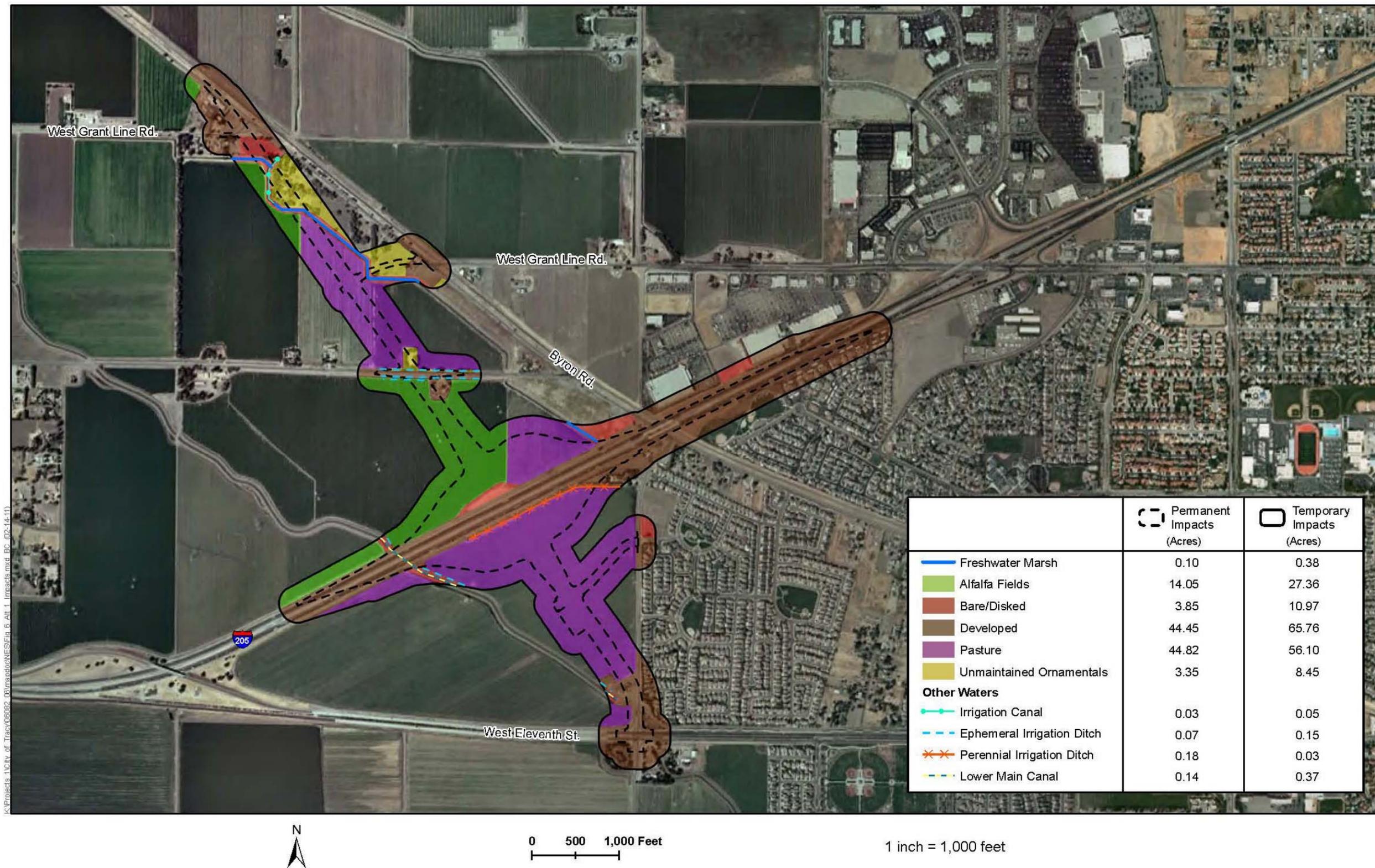


Figure 6: Alternative 1 Impacts



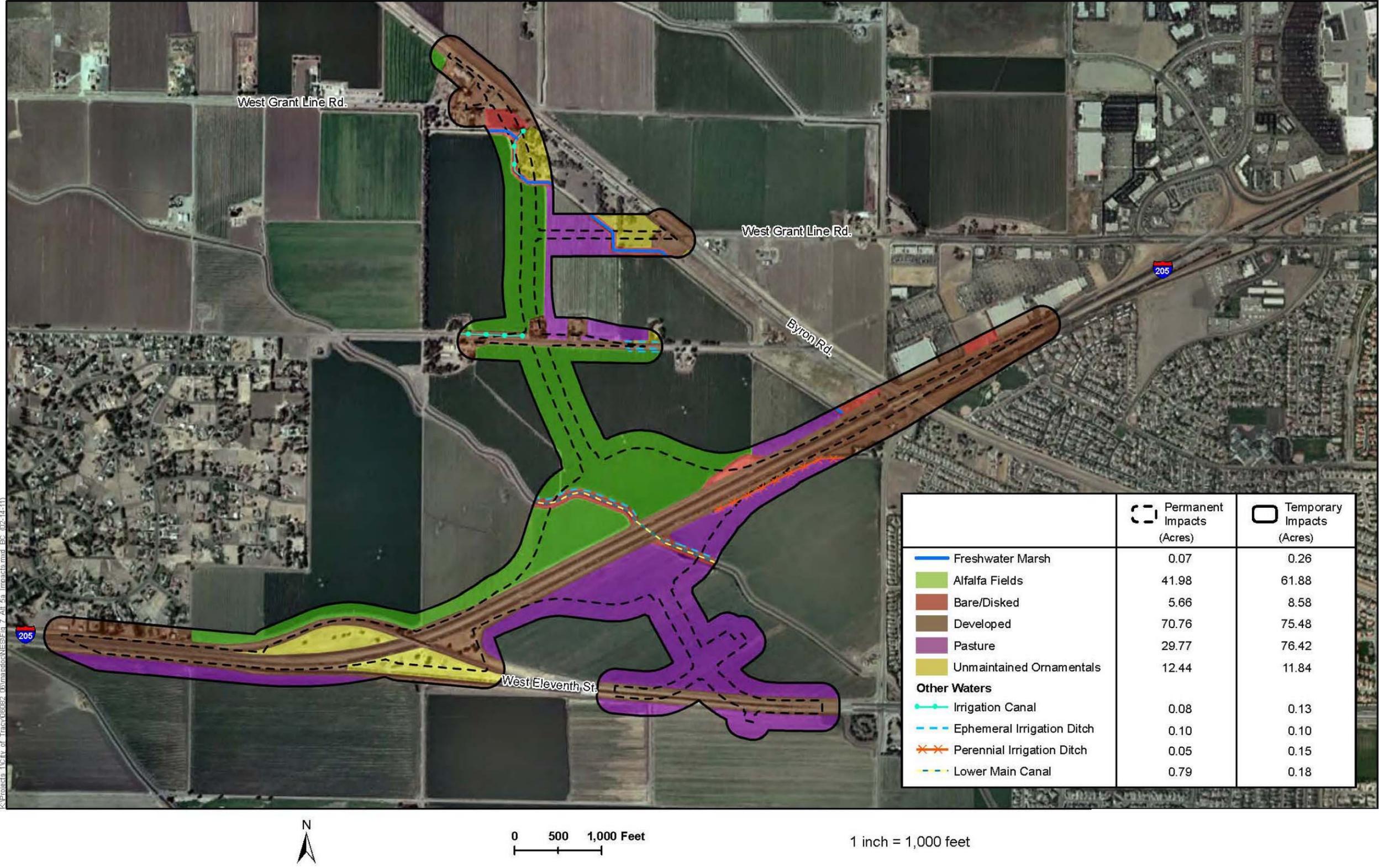


Figure 7: Alternative 5A Impacts



#### **4.1.2. Other Waters of the U.S.**

##### **4.1.2.1. SURVEY RESULTS**

The Lower Main Canal (1.04 acres), unnamed irrigation canals (0.22 acre), and perennial and ephemeral irrigation ditches (0.52 acre) represent other (i.e., non-wetland) waters. The Lower Main Canal, unnamed irrigation canals, and perennial irrigation ditch are perennially inundated and function as main conduits to deliver water for irrigation to the agricultural lands (e.g., alfalfa, pasture) in the BSA. The five ephemeral irrigation ditches only contain water for a short duration during active irrigation of the individual parcels with which they are associated. All the other waters are unvegetated and lack the habitat value of the areas of freshwater marsh in the BSA. These other waters are considered jurisdictional under the preliminary jurisdictional determination approach and therefore subject to regulation by the ACOE.

##### **4.1.2.2. AVOIDANCE AND MINIMIZATION EFFORTS**

Construction of either project alternative would result in permanent and temporary effects on the other waters in the BSA. Although these effects could not be avoided during project construction, the temporary effects on the segments of the other waters adjacent to the construction zone could be minimized by implementing erosion control measures. Erosion control features will be installed adjacent to the construction zone to prevent soil or other materials from entering the adjacent segments of the other waters. Erosion control features will be placed in areas that are upslope or adjacent to the other waters. The locations of erosion control features will be identified on the final grading plans and construction specifications. Natural/biodegradable erosion control measures (i.e., coir rolls, straw wattles or hay bales) will be used.

##### **4.1.2.3. PROJECT IMPACTS**

Construction activities associated with the proposed project would result in permanent and temporary effects on other waters for both project alternatives (Table 6, Figures 6 and 7). However, Alternative 1 would result in fewer permanent and temporary effects than would Alternative 5A. Permanent effects on the Lower Main Canal would occur during project construction because it will be channelized and rerouted underneath the new interchange. Permanent effects would also occur due to culvert installation at the locations where the proposed interchange roadways would cross the two unnamed irrigation canals and the perennial irrigation ditch located in the pasture south of I-205.

The channelization of portions of project area canals as part of the proposed project would result in a loss of functions and values because open canals contain habitat for giant garter snake and western pond turtle. Outside of the footprint of the proposed project the functions of the Lower Main Canal, perennial irrigation ditch, and two unnamed irrigation canals would be restored upon completion of culvert installation and the channelization/rerouting of the Lower Main Canal. The filling of the five ephemeral irrigation ditches would not result in a net loss of functions and values because the land use conversion from agriculture to interchange would remove the need for their limited function as conduits during brief periods of irrigation and these ditches do not contain suitable habitat for any special-status species.

**Table 6: Impacts on the Other Waters (acres)**

Other Water Type	Alternative 1		Alternative 5A	
	Permanent	Temporary	Permanent	Temporary
Lower Main Canal	0.14	0.37	0.79	0.18
Unnamed Irrigation Canals	0.03	0.05	0.08	0.13
Perennial Irrigation Ditch	0.18	0.03	0.05	0.15
Ephemeral Irrigation Ditch	0.07	0.15	0.10	0.10

**4.1.2.4. COMPENSATORY MITIGATION**

The filling of the five ephemeral irrigation ditches would not result in a net loss of functions or values, as described in section 4.1.2.3 above, therefore no compensatory mitigation is proposed for the loss of these features. . The channelization of portions of project area canals, as part of the proposed project, would result in a loss of functions and values because open canals contain habitat for giant garter snake and western pond turtle. The project will compensate for permanent impacts on these other waters within project area canals based on aquatic habitat losses for giant garter snake as described in section 4.3 below. If the ACOE or the RWQCB require additional compensatory mitigation for permanent effects to other waters, the specific mitigation requirements (e.g., mitigation ratios) will be determined during the permitting processes.

#### **4.1.2.5. CUMULATIVE IMPACTS**

The impacts on irrigation canals and ditches from the construction of either alternative of the proposed project would not result in a net loss of functions and habitat values. As such, the impacts on other waters resulting from implementation of either of the proposed project alternatives would not contribute to a cumulative effect on other waters of the United States.

### **4.2. Special Status Plant Species**

The BSA does not contain potential habitat for the majority of the sensitive plant species identified as occurring in the project region and no sensitive plant species were observed in the BSA during multiple field surveys. Based on the lack of suitable habitat requirements and the negative results of field surveys, it was determined that the BSA did not support sensitive plant species. Thus, the proposed project would not result in impacts on sensitive plant species.

### **4.3. Special Status Animal Species Occurrences**

As described in Chapter 2, sensitive animal species that could potentially occur in the BSA were identified based on a review of existing information, including resource agency species lists (USFWS and DFG), and field surveys. Table 4 lists all sensitive wildlife species (including fish) that were identified during the prefield investigation with the potential to occur in the project region. After biological field surveys were conducted the biologist determined that the following sensitive wildlife species have at least a moderate potential to occur in the BSA: giant garter snake, western pond turtle, Swainson's hawk, white-tailed kite, northern harrier, western burrowing owl, and loggerhead shrike. Though American badger and San Joaquin kit fox have low potential to occur in the BSA, these species are discussed below because it was determined that a detailed discussion of the likelihood for these species to occur in the BSA was warranted .

#### **4.3.1. Giant Garter Snake**

Giant garter snakes are associated primarily with agricultural wetlands and other waterways, such as irrigation and drainage canals, marshes, and sloughs in the Central and San Joaquin Valleys. Essential habitat components include adequate water during the snake's active period (May 1 to October 1) to provide a prey base and cover; emergent herbaceous wetland vegetation, such as cattails and bulrushes, for escape cover and foraging habitat; upland habitat for basking, cover, and retreat sites, and higher elevation uplands for cover and refuge from flood waters (U.S. Fish

and Wildlife Service 2005). Upland areas typically include habitat within approximately 200 feet of aquatic habitat. The giant garter snake occurs in fragmented areas of suitable habitat in the Central Valley beginning just south of Chico and extending south to the vicinity of Fresno.

#### **4.3.1.1. SURVEY RESULTS**

Based on the results of the CNDDDB (2010) records search, there are no occurrences of giant garter snake within 10 miles of the BSA. The nearest records are approximately 20 miles north of the City of Tracy, along the edges of the Delta.

Based on the various field visits to the BSA, suitable habitat for giant garter snake was identified in irrigation canals with emergent vegetation (identified as freshwater marsh above) and an irrigation canal connecting two of the areas of freshwater marsh (see Figures 8 and 9, and Photos 3, 5, and 6 in Appendix F). The Lower Main Canal also provides habitat for giant garter snake but this habitat is considered marginal because it does not have emergent vegetation associated with it (see Photo 9 in Appendix F). Areas of pasture, bare (ruderal areas), and unmaintained ornamentals within 200 feet of this aquatic habitat that have mammal burrows provide potential upland habitat for giant garter snakes. Potential giant garter snake upland habitat is depicted on Figures 8 and 9. The remaining irrigation ditches do not provide suitable aquatic habitat for giant garter snake because they lack emergent vegetation and only hold water when irrigation and drainage of alfalfa fields and pastures is occurring, which means they fluctuate between being full and empty on a weekly basis during the spring and summer, which is considered the active season for giant garter snake.

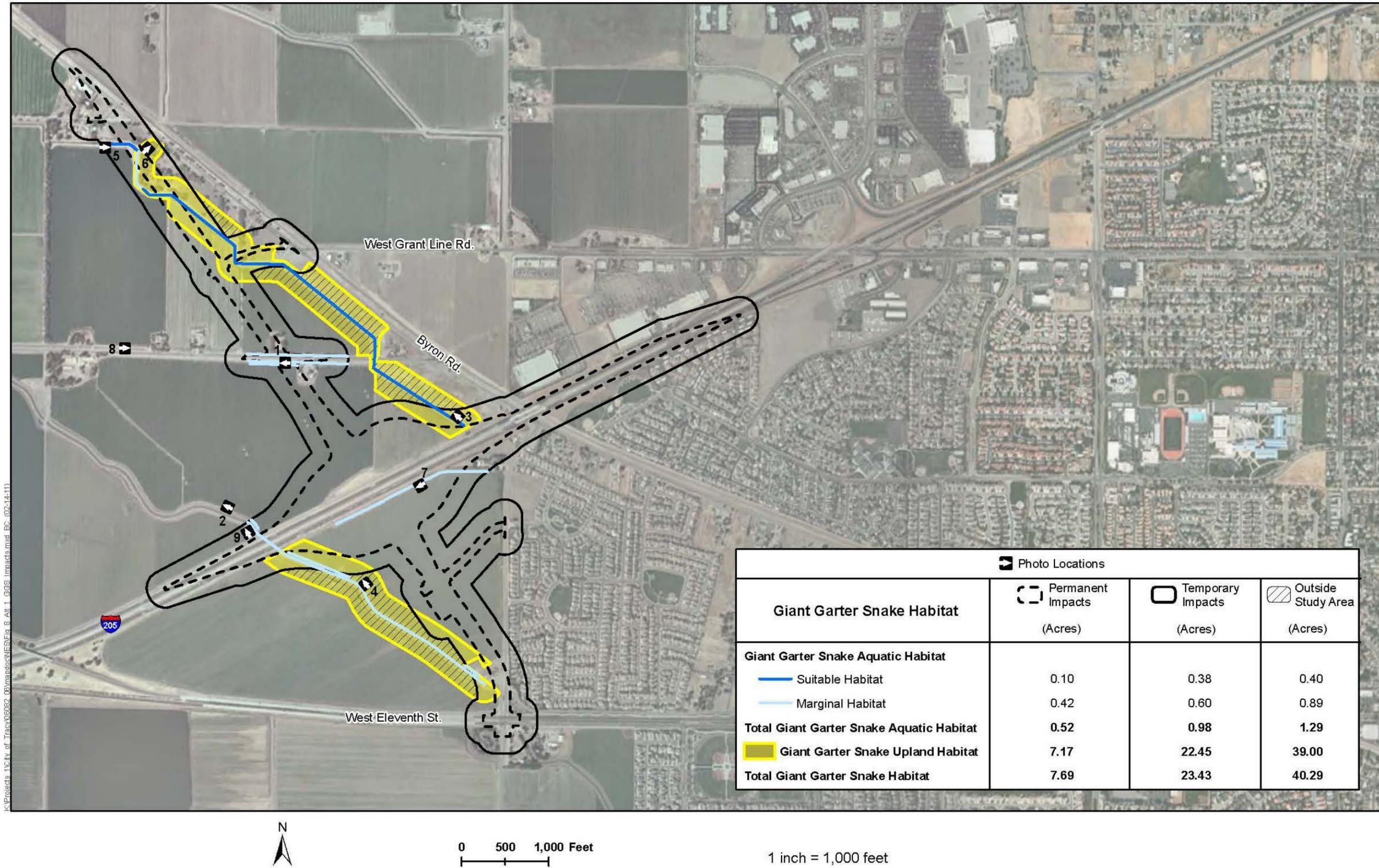


Figure 8: Alternative 1 Giant Garter Snake Habitat Impacts



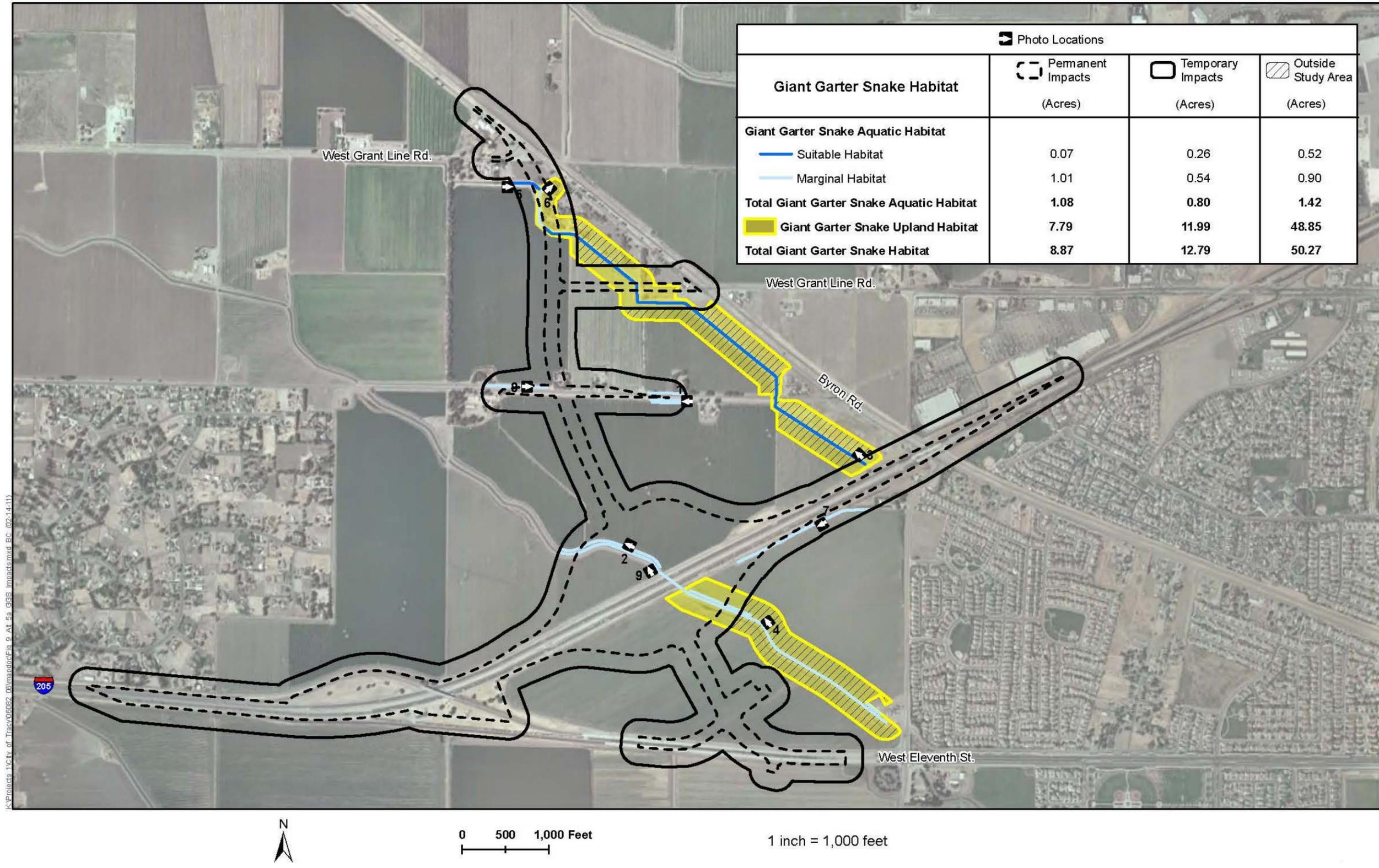


Figure 9: Alternative 5A Giant Garter Snake Habitat Impacts



#### 4.3.1.2. AVOIDANCE AND MINIMIZATION MEASURES

The proposed project does not qualify for coverage under FHWA's Programmatic Biological Opinion (BO) on the Effects of Small Highway Projects on the Threatened Giant Garter Snake in Butte, Colusa, Glenn, Sacramento, San Joaquin, Solano, Sutter, Yolo, and Yuba Counties, California because permanent effects to giant garter snake habitat exceed the maximum area allowed (3 acres) under FHWA's Programmatic BO. However, the avoidance measures from the BO (shown below) will be implemented for the proposed project to avoid and minimize effects to giant garter snake because they represent agency approved avoidance measures.

- Avoid construction activities within 200 feet from the banks of giant garter snake aquatic habitat. Confine movement of heavy equipment to existing roadways to minimize habitat disturbance.
- Construction activity within habitat should be conducted between May 1 and October 1. This is the active period for giant garter snakes and direct mortality is lessened, because snakes are expected to actively move and avoid danger. Between October 2 and April 30 contact the Service's Sacramento Fish and Wildlife Office to determine if additional measures are necessary to minimize and avoid take.
- Confine clearing to the minimal area necessary to facilitate construction activities. Flag and designate avoided giant garter snake habitat within or adjacent to the project area as Environmentally Sensitive Areas. This area should be avoided by all construction personnel.
- Construction personnel should receive Service-approved worker environmental awareness training. This training instructs workers to recognize giant garter snakes and their habitat(s).
- 24-hours prior to construction activities, the project area should be surveyed for giant garter snakes. Survey of the project area should be repeated if a lapse in construction activity of two weeks or greater has occurred. If a snake is encountered during construction, activities shall cease until appropriate corrective measures have been completed or it has been determined that the snake will not be harmed. Report any sightings and any incidental take to the Service immediately by telephone at (916) 414-6600.
- Any dewatered habitat should remain dry for at least 15 consecutive days after April 15 and prior to excavating or filling of the dewatered habitat.
- After completion of construction activities, remove any temporary fill and construction debris and, wherever feasible, restore disturbed areas to pre-project

conditions. Restoration work may include such activities as replanting species removed from banks or replanting emergent vegetation in the active channel.

- Restore condition of upland habitat and provide replacement habitat if work shall be conducted during 2 or more seasons (one season consisting of the period from May 1 and October 1) for this species. Replacement ratios would be based on the acreage affected and on the duration (number of seasons) of disturbance.

#### **4.3.1.3. PROJECT IMPACTS**

Construction of either alternative could directly affect giant garter snake by disrupting essential behavior patterns such as breeding, feeding, and sheltering to the point of causing injury or death of snakes by factors such as vibration (noise), and human disturbance from construction activities in areas of snake-occupied habitat. Both alternatives would result in permanent effects on aquatic and upland habitat for the species. Permanent effects on aquatic habitat would be slightly higher (approximately 0.5 acre more) under Alternative 5A as compared to Alternative 1. Permanent effects to upland habitat would be fairly comparable between the alternatives (See Table 7 below). The destruction of giant garter snake aquatic and upland habitat could cause harm to snakes by interfering with essential behavior patterns and potentially resulting in snakes being crushed by construction equipment.

The proposed project could also potentially temporarily affect giant garter snake. Disturbance caused by construction activities could cause snakes to disperse into areas of unsuitable habitat, increasing the risk of injury or death from factors such as predation and competition. The area of temporary impacts depicted on Figures 8 and 9 is the area in between the project footprint (permanent impacts) and a 200-foot buffer around the project footprint. It is assumed that most of this area will be subject to some degree of temporary disturbance, either through temporary ground disturbance, vehicle, equipment, and material staging, and access roads. Disturbance to areas of potential giant garter snake aquatic and upland habitat will be minimal and restricted to one season.

**Table 7: Impacts to Wildlife Habitats (acres)**

Habitat	Alternative 1		Alternative 5A	
	Permanent	Temporary	Permanent	Temporary
Western Pond Turtle Aquatic Habitat (potential)	0.52	0.98	1.08	0.80
Western Pond Turtle Upland Habitat (potential)	7.17	22.45	7.79	11.99
Giant Garter Snake Aquatic Habitat (potential)	0.52	0.98	1.08	0.80
Giant Garter Snake Upland Habitat (potential)	7.17	22.45	7.79	11.99
Swainson's Hawk Foraging Habitat	67.72	94.43	77.41	146.88
Other Raptor Foraging Habitat	67.72	94.43	77.41	146.88
Burrowing Owl Breeding Habitat	48.670.72	67.07	35.43	85.00
Burrowing Owl Foraging Habitat	67.72	94.43	77.41	146.88
San Joaquin Kit Fox Denning Habitat (potential)	48.670.72	67.07	35.43	85.00
San Joaquin Kit Fox Foraging Habitat (potential)	67.72	94.43	77.41	146.88
American Badger Foraging Habitat (potential)	67.72	94.43	77.41	146.88

**4.3.1.4. COMPENSATORY MITIGATION**

To mitigate for the permanent loss (permanent) of giant garter snake habitat Caltrans will replace this habitat at a 3:1 ratio by purchasing giant garter snake credits from a USFWS approved conservation bank.

**4.3.1.5. CUMULATIVE IMPACTS**

Cumulative impacts on giant garter snake habitat would result from construction of other general development projects within the species range and from the conversion of agricultural lands to other use. Construction of the proposed project would add to the cumulative loss of potential giant garter snake habitat. However, with implementation of the mitigation measures prescribed for avoiding, minimizing and mitigating impacts the proposed project would not likely contribute to a cumulatively adverse effect on giant garter snake habitat.

**4.3.2. Western Pond Turtle**

Western pond turtle is a California species of special concern. The western pond turtle is the only abundant turtle native to California (California Department of Fish and Game 2005). It was historically found in most Pacific slope drainages between the Oregon and Mexican borders. It is still found in suitable habitats west of the Sierra-Cascade crest (Jennings and Hayes 1994).

Western pond turtles require some slow-water aquatic habitat and are uncommon in high-gradient streams (Jennings and Hayes 1994). The banks of inhabited waters usually have thick vegetation, but basking sites such as logs, rocks, or open banks must also be present (California Department of Fish and Game 2005). Depending on the latitude, elevation, and habitat type, the western pond turtle may become inactive over winter or remain active year-round. Nest sites are typically found on slopes that are unshaded and have high clay or silt composition (Jennings and Hayes 1994). Eggs are laid from March to August, depending on local conditions, and incubation lasts from 73 to 80 days. Western pond turtles are omnivorous and feed on aquatic plant material, aquatic invertebrates, fishes, frogs, and even carrion (California Department of Fish and Game 2005).

#### **4.3.2.1. SURVEY RESULTS**

Based on the results of the CNDDDB records search, there are numerous occurrences of western pond turtle within 10 miles of the BSA (California Natural Diversity Database 2010). Based on various site visits to the BSA, canals containing open water and emergent marsh areas provide suitable aquatic habitat, while pasturelands and areas mapped as unmaintained ornamentals within 200 feet of suitable aquatic areas provide suitable upland cover habitat.

#### **4.3.2.2. AVOIDANCE AND MINIMIZATION EFFORTS**

Preconstruction surveys for western pond turtles in suitable aquatic habitat and associated upland areas will be conducted by a qualified biologist 2 weeks before and 24 hours prior to the start of construction activities. Ideally, surveys should be conducted during the period of March through October in the early morning to maximize the chances of observing a turtle.

If a turtle is located within 100 feet of the construction limit, exclusion fencing will be installed to prevent turtles from entering the construction area. If a turtle is observed in the construction area during construction, it will be allowed to move out of this area on its own or, if necessary, be relocated out of this area (with authorization from the DFG), and exclusion fencing will be installed to prevent the movement of turtles back into the construction area.

#### **4.3.2.3. PROJECT IMPACTS**

Construction of either alternative could affect western pond turtle, by causing disturbance or mortality of individuals, and/or through habitat modification. Both alternatives would result in permanent effects on aquatic and upland habitat for the species. Permanent effects on aquatic habitat would be slightly higher (approximately

0.5 acre more) under Alternative 5A as compared to Alternative 1. Permanent effects to upland habitat would be fairly comparable between the alternatives (See Table 7 above).

#### **4.3.2.4. COMPENSATORY MITIGATION**

Compensatory mitigation for western pond turtle is not proposed..

#### **4.3.2.5. CUMULATIVE IMPACTS**

Cumulative impacts on western pond turtle habitat would result from construction of other general development projects in San Joaquin County. Construction of the proposed project would add to the cumulative loss of potential pond turtle habitat. However, with implementation of the mitigation measures prescribed for avoiding, and minimizing impacts, the proposed project would not likely contribute to a cumulatively adverse effect on potential western pond turtle habitat.

#### **4.3.3. Swainson's Hawk**

Swainson's hawk is a state-listed threatened species and is protected under the MBTA. Swainson's hawks inhabit grasslands, sage-steppe plains, and agricultural regions of western North America during the breeding season, and grassland and agricultural regions from central Mexico to southern South America in winter (England et al. 1997).

In California, the nesting distribution includes the Sacramento and San Joaquin Valleys, the Great Basin sage-steppe communities and associated agricultural valleys in extreme northeastern California, isolated valleys in the Sierra Nevada in Mono and Inyo Counties, and limited areas of the Mojave Desert region (California Department of Fish and Game 1994).

Swainson's hawk habitat generally consists of large, flat, open, undeveloped landscapes that include suitable grassland or agricultural foraging habitat and sparsely distributed trees for nesting (England et al. 1997). Preferred foraging habitats for Swainson's hawk include alfalfa fields, fallow fields, low-growing row or field crops, rice fields during the non-flooded period, and cereal grain crops (California Department of Fish and Game 1994). Prey species include ground squirrels, California voles, pocket gophers, deer mice, reptiles, and insects (California Department of Fish and Game 1994; England et al. 1997).

Swainson's hawks usually nest in large native trees such as valley oak (*Quercus lobata*), Fremont cottonwood (*Populus fremontii* ssp. *fremontii*), and willows (*Salix*

spp.), which are not present in the BSA. Swainson's hawks occasionally use nonnative trees such as eucalyptus (*Eucalyptus* spp.), which is present in the BSA. Nests occur in riparian woodlands, roadside trees, trees along field borders, isolated trees and small groves, trees in windbreaks, and trees on the edges of remnant oak woodlands. In some locales, urban nest sites have been recorded. The breeding season is typically March to August (England et al. 1997).

#### **4.3.3.1. SURVEY RESULTS**

Swainson's hawk were recorded nesting in 2003 and 2004 in the northern part of the BSA in eucalyptus tree located in the corporation yard of the farm off of West Grant Line Road (see Figure 5) (California Natural Diversity Database 2010). Another nest in a eucalyptus tree was documented in 2003 just west of the BSA (see Figure 5). Other eucalyptus trees in the vicinity of this tree represent potential nesting habitat for Swainson's hawk. A pair of Swainson's hawks was observed in the summer of 2006 and spring of 2007 foraging in an agriculture field within the BSA near the recorded nest.

Suitable foraging habitat in the BSA includes pasture, alfalfa, and bare/disked areas.

#### **4.3.3.2. AVOIDANCE AND MINIMIZATION EFFORTS**

To avoid and minimize impacts on sensitive and non-sensitive nesting migratory birds and raptors, which are protected under the MBTA and CFGC sections 3503 and 3503.5, Caltrans or its contractor will implement the following restrictions and surveys:

- Vegetation (trees, shrubs, marsh etc.) removal will occur during the non-breeding season for most migratory birds (generally between September 1 and December 31).
- If construction activities, including tree and shrub (and other vegetation) removal, are scheduled to occur during the breeding season for migratory birds and raptors (generally between January 1 and August 31), the Caltrans will retain a qualified wildlife biologist with knowledge of the relevant species to conduct nesting surveys before the start of construction. A minimum of two separate surveys will be conducted for both migratory birds and raptors. Surveys for nesting migratory birds should be conducted within 15 days prior to the initiation of construction activities (including vegetation removal) that are scheduled to begin during the breeding season with at least one survey occurring in the 5 days prior to the start of construction. These surveys will occur in the project area and include trees, shrubs, and ground nesting areas immediately adjacent to the

project area. Surveys for nesting raptors will occur in the project area and a 500-foot area (0.25 mile) for Swainson's hawk) around the project site. Surveys for raptors should occur during the height of the breeding season (March 1 to June 1) with one survey occurring in each of two consecutive months within this peak period and the final survey occurring within 1 week of the start of construction. If no active nests are detected during these surveys, no additional mitigation is required.

- If active nests are found in the survey area, a no-disturbance buffer will be established around the site to avoid disturbance or destruction of the nest site until the end of the breeding season (August 31) or until after a qualified wildlife biologist determines that the young have fledged and moved out of the project area (this date varies by species). The extent of these buffers will be determined by the biologist in coordination with DFG and will depend on the level of noise or construction disturbance, line-of-sight between the nest and the disturbance, ambient levels of noise and other disturbances, and other topographical or artificial barriers. Suitable buffer distances may vary between species.

#### **4.3.3.3. PROJECT IMPACTS**

Development of the project site could affect, through habitat modifications, the state-threatened Swainson's hawk. Tree removal, grading, or other construction activities during the nesting season could remove or cause abandonment of active Swainson's hawk nests if they are found nesting on or adjacent to the project site. Implementation of avoidance and minimization measures identified above would ensure that the proposed project would not result in the loss of Swainson's hawk nests, eggs, or young.

The project would result in the conversion of suitable Swainson's hawk foraging habitat (agricultural lands including pasture, alfalfa, and bare/disked) to roadways. Both project alternatives would result in the loss of suitable Swainson's hawk foraging habitat; although Alternative 1 would impact a smaller acreage, of these lands as compared to Alternative 5A (see Table 7 above). Because the availability of foraging habitat has been closely tied to the breeding success of this species, projects that will adversely modify suitable Swainson's hawk foraging habitat within a 10-mile radius of active Swainson's hawk nests are considered to have the potential to result in adverse impacts to this species (California Department of Fish and Game 1994).

#### **4.3.3.4. COMPENSATORY MITIGATION**

Though the project will result in the removal of Swainson's hawk foraging habitat, substantial agricultural fields and grasslands occurring north and south of the project area are assumed to provide adequate foraging habitat for this species. No compensation is proposed.

#### **4.3.3.5. CUMULATIVE IMPACTS**

Cumulative impacts on Swainson's hawk habitat would result from construction of other general development projects in San Joaquin County. Construction of the proposed project would add to the cumulative loss of potential Swainson's hawk habitat. However, with implementation of the mitigation measures prescribed for avoiding, minimizing, and mitigating impacts, the proposed project would not likely contribute to a cumulatively adverse effect on Swainson's hawk habitat.

#### **4.3.4. White-tailed Kite**

The white-tailed kite is protected under the MBTA and is a fully protected species under the CFGC. White-tailed kites were threatened with extinction in North America during the early twentieth century. Populations recovered throughout its range in the United States from small populations that survived in California, Texas, and Florida. However, since the 1980s, many white-tailed kite populations have been declining, apparently because of loss of habitat and increased disturbance of nests (Dunk 1995).

The breeding season generally extends from early February through early August. White-tailed kites usually nest in large native trees, although nonnative trees also are occasionally used. Nest trees are generally at the edge of wooded habitat next to open fields. Large trees in areas that have been developed may also be used, although the trees need to be close to open fields for foraging (Dunk 1995). White-tailed kites feed primarily on small mammals including voles (*Microtus* sp.), pocket mice (*Perognathus* sp.), and harvest mice (*Reithrodontomys megalotis*).

##### **4.3.4.1. SURVEY RESULTS**

There is one recorded nest within 10 miles of the BSA (California Natural Diversity Database 2010). No white-tailed kites were observed in the BSA during any of the field visits.

Pastures and alfalfa fields in the BSA provide suitable foraging habitat for white-tailed kites. Suitable nesting habitat consists of eucalyptus trees in the northern part of the BSA.

#### **4.3.4.2. AVOIDANCE AND MINIMIZATION EFFORTS**

The avoidance and minimization measures described in Section 4.3.3.2 are applicable to this species.

#### **4.3.4.3. PROJECT IMPACTS**

Tree removal, grading, or other construction activities during the nesting season (generally March 1 through August 31) could remove or cause abandonment of active nests if they are found in or adjacent to the BSA. Additionally, suitable foraging habitat would be lost under both alternatives, although Alternative 1 would impact a smaller acreage as compared to Alternative 5A (see Table 7 above). Implementation of the avoidance and minimization measure described in Section 4.3.3.2 would ensure that the project would not result in the loss of white-tailed kite nests, eggs, or young.

#### **4.3.4.4. COMPENSATORY MITIGATION**

DFG does not require compensatory mitigation for projects resulting in the loss of foraging habitat for this species.

#### **4.3.4.5. CUMULATIVE IMPACTS**

Cumulative impacts on white-tailed kite habitat would result from construction of other general development projects in San Joaquin County. Construction of the proposed project would add to the cumulative loss of potential white-tailed kite habitat. However, with implementation of the mitigation measures prescribed for avoiding, minimizing, and mitigating impacts discussed in Section 4.3.3 above, the proposed project would not likely contribute to a cumulatively adverse effect on white-tailed kite habitat.

#### **4.3.5. Northern Harrier**

The northern harrier is a California species of special concern and is protected under the MBTA and CFGC sections 3503 and 3503.5. In California, northern harrier is a permanent resident of the northeastern plateau, coastal areas, and Central Valley (Macwhirter and Bildstein 1996). In California, northern harriers breed in the Central Valley and Sierra Nevada (California Department of Fish and Game 2005).

Northern harriers frequent meadows, grasslands, desert sinks, open rangelands, and fresh- and saltwater emergent wetlands; they are seldom found associated with wooded habitats. They feed mostly on voles and other small mammals, birds, frogs, small reptiles, crustaceans, insects, and rarely on fish (California Department of Fish and Game 2005). Northern harriers mostly nest in emergent wetland or along rivers or lakes, but may nest in grasslands, grain fields, or sagebrush flats several miles from

water (Macwhirter and Bildstein 1996). The nest is built of a large mound of sticks on wet areas and a smaller cup of grasses on dry sites.

#### **4.3.5.1. SURVEY RESULTS**

There is one record of a northern harrier nest site within 10 miles of the BSA (California Natural Diversity Database 2010). Northern harrier was not observed in or adjacent to the BSA during any of the site visits. The marsh habitat in the BSA is located within an irrigation channel and would not provide suitable nesting habitat for this species. Irrigated pasturelands in the BSA could provide low quality nesting areas though nesting within the BSA is unlikely. Pastures and alfalfa fields in the BSA provide suitable foraging habitat for this species.

#### **4.3.5.2. AVOIDANCE AND MINIMIZATION EFFORTS**

The avoidance and minimization measure described under Section 4.3.3.2 above would avoid and minimize potential nesting impacts to this species.

#### **4.3.5.3. PROJECT IMPACTS**

Though northern harriers could use irrigated pastures in the BSA for nesting, these areas would provide very low quality nesting habitat due to the high level of human disturbance surrounding these areas. Therefore, the potential for northern harriers to nest in the BSA is considered very low. Additionally, suitable foraging habitat would be lost under both alternatives although Alternative 1 would impact a smaller acreage as compared to Alternative 5A (see Table 7 above).

#### **4.3.5.4. COMPENSATORY MITIGATION**

Compensatory mitigation is not proposed for this species.

#### **4.3.5.5. CUMULATIVE IMPACTS**

Cumulative impacts on northern harrier habitat would result from construction of other general development projects in San Joaquin County. Construction of the proposed project would add to the cumulative loss of potential northern harrier habitat. However, with implementation of the mitigation measures prescribed for avoiding, minimizing, and mitigating impacts discussed in Section 4.3.3 above, the proposed project would not likely contribute to a cumulatively adverse effect on northern harrier.

#### **4.3.6. Western Burrowing Owl**

Western burrowing owls are a California species of special concern and are protected under the MBTA and CFGC Sections 3503 and 3503.5. Western burrowing owls were formerly a common permanent resident throughout much of California, but

population declines became noticeable by the 1940s and have continued to the present. Farming has taken a major toll on western burrowing owl populations and their habitat by destroying nesting burrows and exposing breeders and their young to the toxic effects of pesticides (Haug et al. 1993).

Western burrowing owls prefer open, dry, short grassland habitats with few trees and are often associated with burrowing mammals such as California ground squirrels. They occupy burrows, typically abandoned by ground squirrels or other burrowing mammals, but may also use artificial burrows such as abandoned pipes, culverts, and debris piles (California Department of Fish and Game 199; Haug et al. 1993). Prey includes arthropods, amphibians, small reptiles, small mammals, and birds, particularly horned larks (Haug et al. 1993).

The breeding season usually extends from late February through August. Western burrowing owls often nest in roadside embankments, on levees, and along irrigation canals. This species is more diurnal than most owls and can often be observed during the day standing outside the entrance to its burrow (Haug et al. 1993).

#### **4.3.6.1. SURVEY RESULTS**

There are records of burrowing owl nests in and in the vicinity of the BSA (see Figure 5) (California Natural Diversity Database 2010). The CNDDDB record is from 1997 and is in the vicinity of the I-205/11<sup>th</sup> Street on-ramp. The BSA contains suitable nesting and foraging habitat for this species. Individuals were observed just outside of the BSA just east of the Lower Main Canal and south of I-205 during site visits in the summer 2006 and spring 2007.

Other areas of potential burrowing owl habitat (nesting and foraging) observed during field visits in the BSA include pastures, bare/disked areas, and margins of alfalfa fields.

#### **4.3.6.2. AVOIDANCE AND MINIMIZATION EFFORTS**

In conformance with federal and state regulations regarding the protection of raptors, a preconstruction survey for burrowing owls will be completed, in accordance with DFG guidelines described in the *Staff Report on Burrowing Owl Mitigation* (California Department of Fish and Game 1995), prior to the start of construction within suitable habitat and (where possible) in areas within 500 feet of the construction zone. Surveys should be conducted during the wintering (December 1 through January 31 recommended) and nesting (April 15 through July 15 recommended) seasons. Surveys should be conducted from 2 hours before sunset to 1

hour after, or from 1 hour before or 2 hours after sunrise. If no burrowing owls are located during these surveys, no additional action would be warranted. However, if breeding or resident owls are located on, or immediately adjacent to, the site, the following measures will be implemented.

- No burrowing owls will be evicted from burrows during the nesting season (February 1 through August 31). Eviction outside the nesting season may be permitted pending evaluation of eviction plans and receipt of formal written approval from the DFG authorizing the eviction.
- A 250-foot buffer, within which no new activity would be permissible, would be maintained between project activities and nesting burrowing owls. This protected area would remain in effect until August 31, or at the DFG's discretion and based on monitoring evidence, until the young owls are foraging independently.
- If accidental take (disturbance, injury, or death of owls) occurs, the DFG would be notified immediately.

#### **4.3.6.3. PROJECT IMPACTS**

Burrowing owls were observed nesting just outside of the BSA along the Lower Main Canal. Project construction under either Alternative 1 or 5A could affect this species, by causing disturbance or mortality of individuals, and habitat loss or modification. Both alternatives would result in the loss of nesting and foraging habitat for this species although Alternative 1 would impact a slightly larger acreage of habitat (denning and foraging) than Alternative 5A (see Table 7 above). Grading or other construction activities during the nesting season (February 1 through August 31) could destroy or cause abandonment of active nests on or adjacent to the project site. Implementation of the avoidance and minimization measure identified above would ensure that the proposed project, under either alternative, would not result in the loss of burrowing owl adults, nests, eggs, or young.

#### **4.3.6.4. COMPENSATORY MITIGATION**

The following compensatory mitigation will be carried out in accordance with DFG's *Staff Report on Burrowing Owl Mitigation* (California Department of Fish and Game 1995).

- When destruction of occupied burrows is unavoidable during the nonbreeding season (September 1–January 31), unsuitable burrows will be enhanced (enlarged or cleared of debris) or new burrows created (by installing artificial burrows) at a

ratio of 2:1 on protected lands approved by DFG. Newly created burrows will follow guidelines established by DFG.

- If active burrowing owl burrows are found and the owls must be relocated outside of the breeding season, Caltrans will offset the loss of foraging and burrow habitat on the project site by acquiring and permanently protecting a minimum of 6.5 acres of foraging habitat per occupied burrow identified on the project site. The protected lands should be located adjacent to the occupied burrowing owl habitat on the project site or in other occupied habitat near the project site. The location of the protected lands will be determined in coordination with DFG. The project sponsor should provide funding for long-term management and monitoring of the protected lands. The monitoring plan should include success criteria, remedial measures, and an annual report to DFG.

#### **4.3.6.5. CUMULATIVE IMPACTS**

Cumulative impacts on western burrowing owl habitat would result from construction of other general development projects in San Joaquin County. Construction of the proposed project would add to the cumulative loss of western burrowing owl habitat. However, with implementation of the mitigation measures prescribed for avoiding, minimizing, and mitigating impacts, the proposed project would not likely contribute to a cumulatively adverse effect on western burrowing owl.

#### **4.3.7. Loggerhead Shrike**

The loggerhead shrike is designated as a California species of special concern and is protected under the MBTA. Loggerhead shrikes are a widespread species in North America, occurring from the southern Canadian provinces across most of the United States into Mexico (Yosef 1996). In California, loggerhead shrikes occur in open habitats with scattered shrubs, trees, posts, fences, utility lines, and other perches. Habitats include valley foothill forests, pinyon-juniper, desert riparian, and Joshua tree habitats (California Department of Fish and Game 2005). Loggerhead shrikes are adaptable to urban environments as long as preferred habitat characteristics and abundant prey supplies are present (Yosef 1996).

The loggerhead shrike is a predatory songbird. As opportunistic predators, loggerhead shrikes feed on a wide variety of prey, including insects, small mammals and birds, reptiles, amphibians, and occasionally carrion. Prey is often impaled on sharp objects such as thorns and barbed wire fences (Yosef 1996). Nesting habitat includes densely foliated shrubs and trees near open habitats (California Department of Fish and Game 2005).

#### **4.3.7.1. SURVEY RESULTS**

There are many records of loggerhead shrike nests within 10 miles of the BSA. Pastures and alfalfa fields identified during various site visits as occurring in the BSA provide suitable foraging habitat and trees and shrubs provide suitable nesting habitat for this species.

#### **4.3.7.2. AVOIDANCE AND MINIMIZATION EFFORTS**

Implementation of the avoidance and minimization measure described under section 4.3.3.2 would avoid and minimize impacts to loggerhead shrike.

#### **4.3.7.3. PROJECT IMPACTS**

Loggerhead shrike was observed foraging in pasturelands within the BSA and has potential to nest in the BSA based on the presence of suitable nesting (scattered trees and shrubs). Tree and shrub removal, grading, or other construction activities during the nesting season (generally March 1 through August 31) could remove or cause abandonment of active nests if they are found in or adjacent to the BSA. Potential impacts to this species under Alternatives 1 and 5A would be comparable. Implementation of the avoidance and minimization measure described in Section 4.3.3.2 would ensure that the proposed project would not result in the loss of loggerhead shrike nests, eggs, or young.

#### **4.3.7.4. COMPENSATORY MITIGATION**

Compensatory mitigation is not proposed for this species.

#### **4.3.7.5. CUMULATIVE IMPACTS**

The proposed project will avoid removal or disturbance of occupied loggerhead nests. Because there will be no impact, there will be no contribution to a cumulative impact.

#### **4.3.8. Non-Listed Nesting Migratory Birds Including Raptors**

Several non-listed migratory birds (including raptors) could nest in and adjacent to the BSA. The breeding season for most migratory birds and raptors is generally from February 1 to August 31 though some species may nest as early as January 1st. The occupied nests and eggs of these birds are protected by federal and state laws, including the MBTA and MBTA and CFGC sections 3503 and 3503.5.

#### **4.3.8.1. SURVEY RESULTS**

Suitable nesting habitat for migratory birds is present within shrubs, trees, and grassy areas within and adjacent to the BSA. Trees and shrubs within and adjacent to the BSA were examined for nests during the spring and summer field surveys. An active red-tailed hawk nest was identified in a large ornamental tree 500 feet west of the

BSA, north of Von Sosten Road during the April 2007 survey. Numerous other migratory bird and raptor species have potential to nest in and adjacent to the BSA.

#### **4.3.8.2. AVOIDANCE AND MINIMIZATION EFFORTS**

Implementation of the avoidance and minimization measure described in Section 4.3.3.2 would avoid and minimize impacts to nesting migratory birds including raptors.

#### **4.3.8.3. PROJECT IMPACTS**

Implementation of the proposed project under Alternative 1 or 5A could impact nesting migratory birds, including raptors, if construction activities remove or otherwise disturb occupied nests during the breeding season. Construction activities during the breeding season that result in death of young or loss of reproductive potential would violate MBTA and CFGC Sections 3503 and 3503.5. Potential impacts to these species under Alternatives 1 and 5A would be comparable though Alternative 5A would result in a slightly higher loss of foraging habitat. Implementation of the avoidance and minimization measure described in Section 4.3.3.2 would ensure that the proposed project would not result in the loss of migratory bird and raptor nests, eggs, or young.

#### **4.3.8.4. COMPENSATORY MITIGATION**

No compensatory mitigation for migratory birds is necessary.

#### **4.3.8.5. CUMULATIVE IMPACTS**

Because the proposed project will avoid removal or disturbance of occupied migratory bird nests, no contribution to a cumulative impact is anticipated.

#### **4.3.9. San Joaquin Kit Fox**

San Joaquin kit fox is federally listed as endangered and state listed as threatened. The current known range of San Joaquin kit fox extends from central Contra Costa County south through Kern County and to the northeastern edge of Santa Barbara County (Williams et al. 1998:122–132). The BSA is within the San Joaquin kit fox's range.

In the central portion of the range, San Joaquin kit fox is associated with the following natural vegetation communities: valley sink scrub, interior coast range saltbush scrub, upper Sonoran subshrub scrub, annual grassland, and the remaining native grasslands. San Joaquin kit foxes in the central region also use grazed non-irrigated grasslands, tilled or fallow fields, irrigated row crops, orchards, and

vineyards because of the predominance of these cover types in the region. (Williams et al. 1998:122–132.)

San Joaquin kit foxes prefer loose-textured and deeper soils, but have been found on a wide range of soil types. They may construct their own dens, but where soils make digging difficult, foxes frequently use and modify burrows built by other animals, particularly those of California ground squirrels. Structures such as culverts, abandoned pipelines, and well casings may also be used as den sites. The breeding season begins during September and October when adult females begin to clean and enlarge natal or pupping dens. Mating and conception occur between late December and March. Gestation is 48–52 days, and litters of two to six pups are born sometime between late February and late March. (Williams et al. 1998:122–132.)

#### **4.3.9.1. SURVEY RESULTS**

Approximately 20 records for San Joaquin kit fox dens, sightings, sign of presence (scat or prints) are located within 10 miles of the BSA (the closest occurrence is 2.7 miles west of the BSA). Based on the ecological information associated with these records, San Joaquin kit foxes are using a variety of grassland habitats including disturbed annual grassland, grazed pastureland, fallow fields, berms and levees along canals, rivers, and reservoirs in the area for denning and foraging. There have also been several kit fox sightings and sign recorded in developed areas in and around Byron and Tracy, suggesting that kit foxes are using these areas for movement between suitable denning and foraging areas. Pastures, alfalfa fields, and bare/disked areas in the BSA provide low quality kit fox foraging habitat. Pastures and bare/disked areas provide low quality kit fox denning habitat in the BSA. Though there are numerous records for this species in the vicinity of the BSA, I-205 serves as a potential barrier for kit foxes that could be moving from north to south of the BSA. Therefore, the BSA is not considered a substantial movement corridor for kit foxes. Additionally, the overall potential for kit foxes to occur in the project vicinity is considered low based on the following presented studies and evidence.

According to a 2009 study that summarized the status of kit fox in the northern range (the area along the western edge of the valley and Coast Range foothills from Santa Nella north), which includes the BSA, while kit fox presence in the northern range may consist primarily of occasional dispersing animals from populations south of Santa Nella, there have been no recent and only two historical records of documented reproduction by kit foxes in the northern range (Constable et al. 2009). The study also suggests that a number of the CNDDDB records from the northern range may be mis-

identifications due to confusion between coyote pups and gray foxes an idea that is supported by a lack of unequivocal physical evidence of kit foxes in the northern range, such as carcasses, live-capture animals, photos from camera stations, or genetically verified scat samples (Constable et al. 2009). Additionally, an extensive scat survey effort was conducted throughout the northern range between May 2001 and February 2003 using trained scat-detection dogs. Genetic analysis of scat samples collected from this effort did not detect any samples belonging to kit foxes (Constable et al. 2009). In addition to this study's findings, the lack of previously documented den sites in agricultural lands in the northern range also suggests low potential for kit foxes occurrence in the BSA especially denning foxes (California Natural Diversity Database 2009). Further, a study conducted by Gregory Warrick with the Endangered Species Recovery Program (Warrick et al. 2007) examined kit fox use of agricultural lands by looking at radio-collared kit foxes inhabiting the California Aqueduct right-of-way adjacent to agricultural areas. The study found that though kit foxes moved into agricultural lands (orchards and annual croplands) at night to forage, they almost never occurred there during the day and didn't establish dens in these areas. The authors propose that frequent flooding from irrigation (pastures and alfalfa in the BSA are flood irrigated) and ground disturbance (alfalfa fields in the BSA are periodically harvested and disked) create a low prey base and low ground squirrel den persistence, which probably limit the ability of kit foxes to occupy agricultural fields. In addition, if kit foxes are primarily occurring in areas west of I-580 it is likely that they would forage in those areas or in agricultural areas immediately adjacent to this habitat rather than BSA agricultural lands located more than 2.5 miles to the east.

Therefore, due to the potential barrier that I-205 creates for dispersing kit foxes and the support of recent studies that suggest that the region containing the BSA supports only occasional movement by kit foxes and that agricultural lands are minimally utilized by this species as compared to grasslands and other more suitable habitats, the BSA has minimal potential to be utilized by San Joaquin kit fox for denning or foraging. No potential kit fox dens were observed during surveys conducted in 2006 and 2007.

#### **4.3.9.2. AVOIDANCE AND MINIMIZATION EFFORTS**

Due to the low potential for San Joaquin kit fox to occur in the BSA no avoidance or minimization measures are proposed.

#### **4.3.9.3. PROJECT IMPACTS**

Construction of the project under either Alternative 1 or 5A would result in the loss of low quality foraging habitat for San Joaquin kit fox (pastures, alfalfa fields, and bare/disked areas) only but the likelihood of their use by kit fox is considered to be low. Table 7 shows the amount of potential kit fox denning and foraging habitat that would be lost by implementation of the project under Alternatives 1 and 5A. Alternatives 1 would result in a slightly larger amount of potential habitat loss as compared to Alternative 5A.

Due to the low potential for San Joaquin kit fox to utilize the BSA, construction of the project is unlikely to impact this species.

#### **4.3.9.4. COMPENSATORY MITIGATION**

No compensatory mitigation is being proposed because of the minimal potential for San Joaquin kit fox to occur in the BSA and the presence of low-quality habitat only.

#### **4.3.9.5. CUMULATIVE IMPACTS**

San Joaquin kit fox is unlikely to occur in the BSA and therefore no cumulative impacts to this species are anticipated.

#### **4.3.10. American Badger**

American badger is a state species of special concern. Badgers occur in a wide variety of open, arid habitats but most commonly are associated with grasslands, savannas, and mountain meadows. They require sufficient food (burrowing rodents), friable soils, and relatively open, uncultivated ground. Badgers dig burrows, which are used for cover and reproduction. The species mates in summer and early autumn, and young are born in March and early April (Zeiner et al. 1990: 312).

##### **4.3.10.1. SURVEY RESULTS**

There are numerous occurrences of American badgers within 10 miles of the BSA. The closest occurrence was recorded near Tracy (approximately 2.2 miles from the BSA). The BSA contains pasture and ruderal vegetation (bare/disked) areas with an abundance of small mammals that could be used for foraging for this species. No badger dens were observed in the BSA during surveys. Due to the predominance of agricultural lands within the BSA, badgers are unlikely to utilize the BSA for denning.

##### **4.3.10.2. AVOIDANCE AND MINIMIZATION EFFORTS**

No avoidance or minimization measures are proposed for American badger due to the low potential for this species to occur in the BSA. Though not directed at avoiding

impacts to badgers, preconstruction surveys for burrowing owl would also serve protect this species if an individual was found to be denning in the BSA.

#### **4.3.10.3. PROJECT IMPACTS**

The amount of potential foraging habitat that would be permanently and temporarily impacted under the project alternatives are shown in Table 7. As shown in Table 7, Alternative 1 would result in a slightly larger amount of potential habitat loss as compared to Alternative 5A.

American badger has low potential to occur in the BSA and is unlikely to be impacted by the project.

#### **4.3.10.4. COMPENSATORY MITIGATION**

No compensatory mitigation for American badger is needed.

#### **4.3.10.5. CUMULATIVE IMPACTS**

The BSA contains low quality habitat for American badger and is unlikely to be occupied by badgers. Therefore, no cumulative impacts to American badger are anticipated.

### **4.4. Other Biological Concerns**

#### **4.4.1. Invasive Species**

Invasive species are plant species designated as federal noxious weeds by USDA, species listed by CDFA, and invasive plants identified by Cal-IPC. Roads, highways, and related construction projects are some of the principal dispersal vectors for invasive species. The introduction and spread of invasive plants adversely affect natural plant communities by displacing native plant species that provide shelter and forage for wildlife species.

A national invasive weed list has not yet been approved, but FHWA requires that state departments of transportation use the state's noxious weed list (California Department of Food and Agriculture 2009) in the interim. Accordingly, the CDFA and Cal-IPC lists were used for the analysis of invasive species in the BSA.

##### **4.4.1.1. SURVEY RESULTS**

Table 2 identifies the invasive species from the CDFA and Cal-IPC lists found in the BSA. The infestation of the BSA by these species occurs primarily in vegetated fallow fields, along roadsides, and along irrigation canals.

#### **4.4.1.2. AVOIDANCE AND MINIMIZATION EFFORTS**

Implementation of the following measures would avoid and minimize the introduction and spread of invasive plants during construction. In addition, Caltrans or its contractor will coordinate with the San Joaquin County Agricultural Commissioner to ensure that the appropriate best management practices (BMPs) are implemented for the duration of project construction.

- Clean construction equipment and vehicles in a designated wash area prior to entering and exiting the project site.
- Educate construction supervisors and managers about invasive plant identification and the importance of controlling and preventing the spread of invasive plant infestations.
- Treat small, isolated infestations with eradication methods that have been approved by or developed in conjunction with the San Joaquin County Agricultural Commissioner to prevent the spread of or destroy viable plant parts or seeds.
- Minimize surface disturbance to the greatest extent feasible to complete the work.
- Use native, non-invasive species or non-persistent hybrids in erosion-control plantings to stabilize site conditions and prevent invasive plant species from colonizing.
- Use weed-free imported erosion-control materials (or rice straw) in upland areas.
- Conduct a follow-up inventory of the construction area to verify that construction activities have not resulted in the introduction of new noxious weed infestations. If new noxious weed infestations are located during the follow-up inventory, contact the San Joaquin Agricultural Commissioner to determine the appropriate species-specific treatment methods, and undertake identified treatment measures.

#### **4.4.1.3. PROJECT IMPACTS**

Invasive weed species are present throughout the BSA. The proposed project has the potential to create additional disturbed areas for a temporary period and substantially increase the area that is subject to repeated disturbance. However, the implementation of the avoidance and minimization measures described above would avoid potential impacts of invasive plants. No further mitigation is proposed.

**4.4.1.4. CUMULATIVE EFFECTS**

Implementation of the avoidance and minimization measure described above under Section 4.4.1.2 would prevent cumulative impacts from the spread of invasive weeds during project construction.



## Chapter 5. Results: Permits and Technical Studies for Special Laws or Conditions

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### **5.1. Federal Endangered Species Act Consultation Summary**

**August 3, 2010:** Caltrans obtained an updated list of all federally listed species that could occur in the vicinity the proposed project from the USFWS website. This list is presented in Appendix B.

The proposed project has potential to result in effects to giant garter snake. A biological assessment for giant garter snake will be prepared for the proposed project when an alternative is selected and upon completion will be submitted to the USFWS. The BA will contain proposed avoidance, minimization, and compensation measures for this species that will subject to USFWS approval.

### **5.2. Federal Fisheries and Essential Fish Habitat Consultation Summary**

The proposed project would not result in take of a federally listed fish species or essential fish habitat. Therefore, no coordination with NOAA Fisheries is required.

### **5.3. California Endangered Species Act Consultation Summary**

Two state-listed species, Swainson's hawk and giant garter snake, could be affected by proposed project activities. Chapter 4 of this NES addresses potential project impacts on Swainson's hawk and describes mitigation measures to avoid permanent impacts on this species. As described above, a biological assessment will be prepared to address effects to giant garter snake and a consistency determination may be required from CDFG.

### **5.4. Wetlands and Other Waters Coordination Summary**

The freshwater marsh, irrigation canals, and irrigation ditches are considered jurisdictional under the preliminary jurisdictional determination approach and therefore subject to regulation by the ACOE. The project proponent (City of Tracy) will obtain a preliminary jurisdictional determination from the ACOE for the

wetlands and other waters in the BSA during the 404 permitting process. The results of the preliminary wetland delineation will be submitted to the Sacramento District of the ACOE (Appendix A) as part of the CWA 404 permitting process. A CWA 404 permit must be obtained from the ACOE for all discharges of fill material into waters of the United States, including wetlands, before proceeding with the proposed project. Depending on which project Alternative is implemented (and the total acreage of impacts on wetlands and other waters), the City may need to obtain an individual CWA 404 permit. The City will also obtain a Section 401 certification and WDRs from the RWQCB. Additionally, the City will enter into a Streambed Alteration Agreement with CDFG for compliance with Section 1602 of the CFGC.

### **5.5. Invasive Species**

With implementation of the avoidance and minimization efforts in Section 4.4.1.1, the proposed project would not result in severe infestations of invasive plant species.

### **5.6. Migratory Birds**

The proposed project has a potential to affect migratory bird species. Chapter 4 of this NES discusses these potential impacts and describes mitigation measures to avoid and minimize impacts on nesting migratory birds.

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# Appendix A Preliminary Delineation of Waters of the United States, Including Wetlands

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# Interstate 205/Lammers Road/West Eleventh Street Interchange Project



## Preliminary Delineation of Waters of the United States, Including Wetlands

Tracy, California  
City of Tracy, San Joaquin County, CA  
10-SJ-205- PM2.6/R5.1  
EA0H9100

February 2011





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## List of Abbreviated Terms

CFR	Code of Federal Regulations
City	City of Tracy
CWA	Clean Water Act
F	Fahrenheit
GPS	global positioning system
I-205	Interstate 205
OHWM	ordinary high-water mark
proposed project	Interstate 205/Lammers Road/West Eleventh Street Interchange Project
USACE	U.S. Army Corps of Engineers
USGS	U.S. Geological Survey



# Preliminary Delineation of Waters of the United States, Including Wetlands

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## Summary

This report presents the results of a delineation of waters of the United States, including wetlands, conducted for the California Department of Transportation's (Caltrans') and the City of Tracy's (City's) proposed Interstate 205 (I-205)/Lammers Road Interchange Project (proposed project) in Tracy, California. On July 14, 2006, and September 30, 2009, ICF Jones & Stokes conducted fieldwork using the routine onsite determination method described in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987). The 2009 fieldwork was conducted to incorporate the supplemental procedures and wetland indicators provided in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual for the Arid West Region* (U.S. Army Corps of Engineers 2008). The delineation was conducted to assist Caltrans and the City (the project applicant) in identifying the type and extent of wetlands and other waters subject to U.S. Army Corps of Engineers (USACE) regulation under Section 404 of the federal Clean Water Act (CWA). This report was prepared to support the submission of a preliminary jurisdictional determination to the USACE Sacramento District.

A total of 2.252 acres of wetlands and other waters, consisting of three emergent wetlands (0.481 acre), three irrigation canals (1.256 acres), and six irrigation ditches (0.515 acre), were identified in the delineation area (Table 1 and Appendix A).

**Table 1. Summary of Wetlands and Other Waters Identified in the Delineation Area**

Wetlands and Other Waters	Area (acres)
<b>Wetlands</b>	
Emergent Wetlands	0.481
<i>Wetland Subtotal</i>	<i>0.481</i>
<b>Other Waters</b>	
Irrigation Canals	1.256
Irrigation Ditches	0.515
<i>Other Waters Subtotal</i>	<i>1.771</i>
<b>Total</b>	<b>2.252</b>

## Introduction

This report presents the results of a delineation of wetlands and other waters of the United States, including wetlands, conducted for the proposed project in Tracy, California. The delineation area consisted of the project construction footprint plus a 200-foot-wide buffer area, as shown in Appendix A.

## Contact Information

Contact information for the Caltrans environmental planner is provided below.

Zachary Parker

Senior Environmental Planner (Biology)  
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 Biology Branch  
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 (559) 243-8288

Table 2 lists the parcels that occur in the delineation area, their respective property owners, and contact information for each property owner.

**Table 2. Parcels, Property Owners, and Property Owner Contact Information for the Delineation Area**

APN/Parcel Number	Property Owner	Phone
209-835-5120	Simes, Chlovean L	(209) 835-5120
209-410-30	Tracy Catellus LLC	(303) 567-5000
209-410-26	Tracy Catellus LLC	(303) 567-5000
209-400-07	Pombo, Ernest J Est	(209) 835-4949
209-270-29	West Side Irrigation District	(209) 835-0503
209-270-28	Union Pacific Railroad Company	(402) 544-5000 or (888) 870-8777 (operator)
209-270-28	Union Pacific Railroad Company	(402) 544-5000 or (888) 870-8777 (operator)
209-270-26	Dobler, Louie	(209) 836-3316
209-270-24	Tracy Catellus LLC	(303) 567-5000
209-270-23	Tracy Catellus LLC	(303) 567-5000
209-270-22	Phelps Pinto Roberta A	(209) 830-9743
209-270-21	Tracy Catellus LLC	(303) 567-5000
209-270-20	Tracy Catellus LLC	(303) 567-5000
209-270-19	Tracy Catellus LLC	(303) 567-5000
209-270-18	Tracy Catellus LLC	(303) 567-5000 y
209-270-17	Tracy Catellus LLC	(303) 567-5000
209-270-16	Tracy Catellus LLC	(303) 567-5000
209-270-15	Tracy Catellus LLC	(303) 567-5000
209-270-14	Singh, Dhalvinder Kaur	(209) 835-1823
209-270-13	Singh, Dhalvinder Kaur	(209) 835-1823
209-280-02	Silva, Ronald G and K S	(209) 745-3179
209-260-21	Tracy Catellus LLC	(303) 567-5000
209-260-20	S F Transportation	(415) 974-6000
209-260-19	Pombo, Ernest J Est	(209) 835-4949
209-260-19	Pombo, Ernest J Est	(209) 835-4949
209-260-18	Pombo, Ernest J Est	(209) 835-4949
209-260-17	West Side Irrigation District	(209) 835-0503

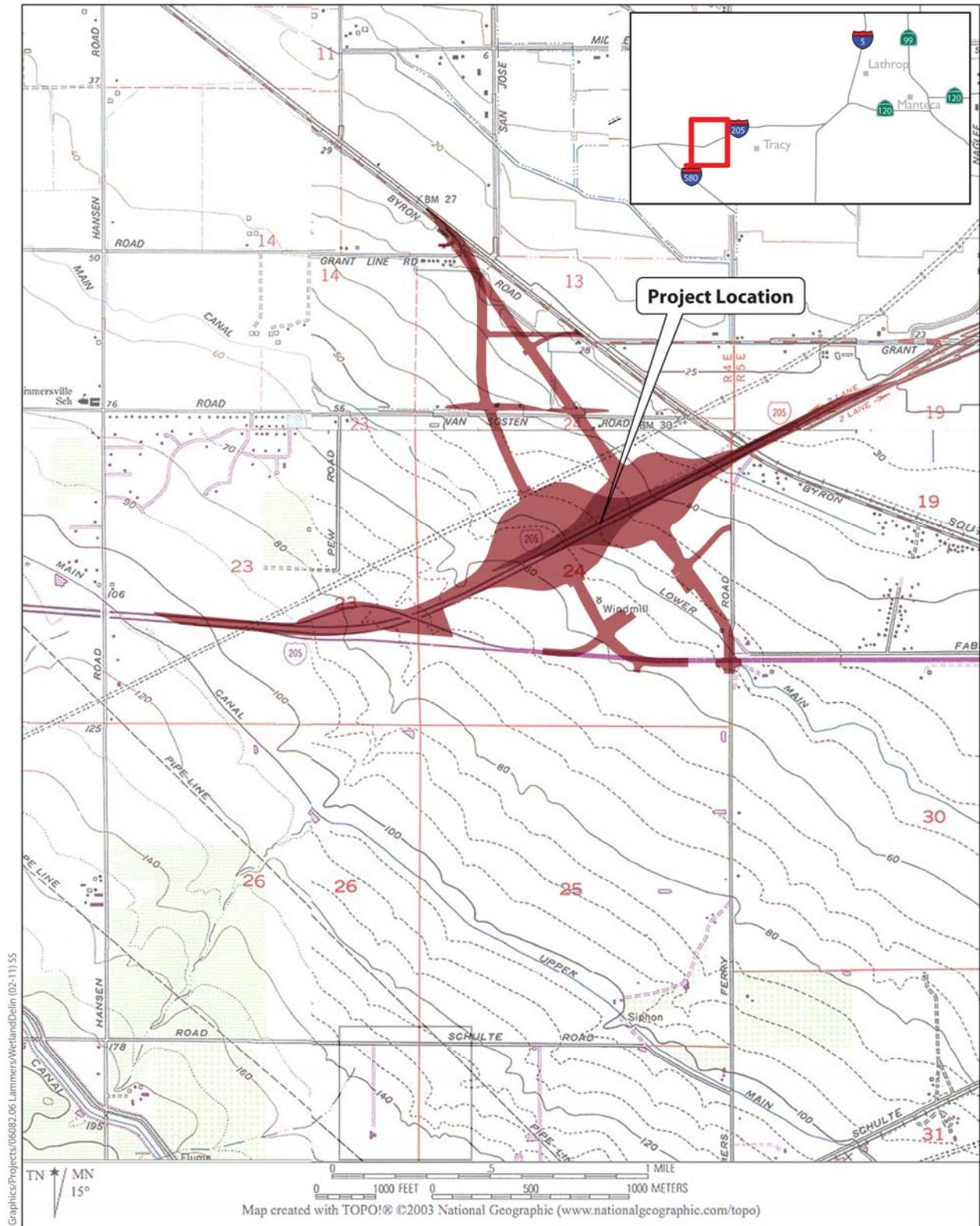
APN/Parcel Number	Property Owner	Phone
209-260-16	West Side Irrigation District	(209) 835-0503
209-270-05	Tracy Catellus LLC	(303) 567-5000
209-260-15	West Side Irrigation District	(209) 835-0503
209-270-04	Scales, Fred	(209) 835-5533
209-260-14	West Side Irrigation District	(209) 835-0503
209-260-13	Pombo, Ernest J Est	(209) 835-4949
209-270-02	Claremont Foreclosure Investment LLC	(510) 808-0363
209-270-01	Shattuck, Boyd L and Ruth J	(209) 835-0997
209-260-11	West Side Irrigation District	(209) 835-0503
209-260-10	West Side Irrigation District	(209) 835-0503
209-260-07	Spatafore, C Jr and M	(209) 835-2701
209-260-06	Tracy Catellus LLC	(303) 567-5000
209-260-04	Tracy Catellus LLC	(303) 567-5000
209-260-03	Tracy Catellus LLC	(303) 567-5000
209-260-02	Tracy Catellus LLC	(303) 567-5000
209-260-02	Tracy Catellus LLC	(303) 567-5000
209-260-01	Tracy Catellus LLC	(303) 567-5000
209-190-17	Union Pacific Railroad Company	(402) 544-5000 or (888) 870-8777 (operator)
209-190-07	Tracy Catellus LLC	(303) 567-5000
209-190-06	Dobler, Louie	(209) 836-3316
238-020-85	Costco Wholesale Corp	(800) 955-2292
238-020-78	Mancini Properties II LLC	(925) 456-6400
238-020-77	Plaza Four PTP	1470 Maria Lane, #101, Walnut Creek, CA 94596
238-020-74	Lyons Investments LTD PTP	P.O. Box 4057, Modesto, CA 95352
238-080-09	Tracy Westgate Apartments LLC	(209) 835-6403
238-020-69	Tracy Chesapeake Bay Limited PTP	(559) 222-1974
238-020-61	City of Tracy	(209) 831-4638
238-070-01	Bluford, Kenneth Sr and Janice L	(209) 836-2309 or (209) 836-3609
238-020-49	KMV Properties LLC	2 Carnoustie, Moraga, CA 94556
238-020-42	Toste Farms Inc	(209) 835-4476
238-020-15	Wal Mart Real Est Business Trust	1-800-925-6278 or (479) 273-8446
238-010-03	Union Pacific Railroad Company	(402) 544-5000 or (888) 870-8777 (operator)
238-020-03	Tracy Community Development Agency	(209) 831-4638

## Project Description

The proposed project would reconstruct or eliminate the existing interchange at Eleventh Street/I-205 to provide full ramp movements at a new location. The proposed project includes two build alternatives which focus on the various interchange alternatives being considered and reviewed, and a no build alternative. The two build alternatives include Alternative 1: New Spread Diamond Interchange at Lammers Road and Alternative 5A: Modified Eleventh Street Partial Cloverleaf Interchange. The delineation area encompasses the entire area that would be affected by the two project alternatives and the no-build alternative.

## **Site Description and Location**

The delineation area encompasses approximately 533 acres in Tracy, California, and includes areas to the north and south of I-205 that are west of Lammers Road (Figure 1). The delineation area is in San Joaquin County, within the Tracy and Union Island 7.5-minute U.S. Geological Survey (USGS) quadrangles in Township 2 south, Ranges 4 and 5 east, Section 19, Section 24, and an undesignated section (U.S. Geological Survey 2009). Approximate elevations in the delineation area range from 35 to 85 feet above sea level.



**Figure 1 Project Location**

The delineation area is located within the San Joaquin Valley geographic subregion of the Great Central Valley in the California Floristic Province (Hickman 1993). The delineation area is comprised primarily of active and fallow agricultural lands (i.e., row crops and grazing pasture), but also contains scattered rural residences, commercial development, and unmaintained landscaping adjacent to I-205 and Eleventh Street.

## Driving Directions

From Sacramento, travel south on Interstate 5 for approximately 60 miles to the I-205 west exit and then drive approximately 7 miles to the Grant Line Road exit. Upon exiting, merge onto Pavillion Parkway for a very short distance (~0.1 mile) before turning left onto Naglee Road. After approximately 0.3 mile, turn right onto Grant Line Road and travel approximately 1 mile to the intersection with Byron Road. Turn right onto Byron Road and drive north approximately 0.5 mile to the continuation of Grant Line Road and turn left to reach the northern portion of the delineation area.

## Methodology

### Background Research

Prior to conducting the fieldwork for the delineation, the ICF botanist/wetland ecologist conducted background research on the delineation area by reviewing the following sources of information:

- aerial photographs of the delineation area flown in 2007;
- climate information (i.e., growing season and precipitation) (Natural Resources Conservation Service 2009);
- field notes on vegetation types recorded during previous site visits;
- hydrology (i.e., existing waterways and hydrologic unit) (U.S. Environmental Protection Agency 2009); and
- the soil survey of San Joaquin County (McElhiney 1992).

### Delineation Fieldwork

A botanist/wetland ecologist from ICF conducted fieldwork for the delineation on July 14, 2006, and September 30, 2009. During both years, wetlands and wetland boundaries were identified using the routine on-site determination method described in the 1987 *U.S. Army Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987). The 2009 fieldwork was conducted to incorporate the supplemental procedures and wetland indicators provided in

the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual for the Arid West Region* (U.S. Army Corps of Engineers 2008). Data were collected to support a preliminary jurisdictional determination approach during the permitting phase. On November 7, 2008, the Sacramento District issued a public notice (SPK-2008-01557) regarding local processing procedures for jurisdictional determinations; the preliminary jurisdictional determination approach is intended to streamline the process for applicants seeking USACE permit authorizations or jurisdictional determinations.

The locations of wetland boundaries and data points were recorded using a resource-grade global positioning system (GPS) unit with sub-meter accuracy, aerial photograph interpretation, and field observations. GPS data were downloaded and corrected using the nearest available base-station data to generate a delineation map. Wetland boundaries were delineated based on the presence of positive indicators of the three federal wetland criteria: hydrophytic vegetation, hydric soils, and wetland hydrology.

The boundaries of non-wetland waters (irrigation canals and ditches) were identified by locating the ordinary high-water mark (OHWM), which represents the lateral limit of USACE jurisdiction over nontidal, nonwetland waters in the absence of adjacent wetlands (*33 Code of Federal Regulations [CFR] 328.4[c]*). The OHWM was identified using the field indicators provided in *33 CFR 328.3(e), 329.11(a)(1)*, and in guidance issued in 2005 by the USACE (U.S. Army Corps of Engineers 2005).

Information obtained from the background research is discussed below under ‘Environmental Setting’ and the findings of the delineation fieldwork are discussed below under ‘Results’.

## **Environmental Setting**

### **Growing Season**

The length of the growing season in the delineation area was obtained from the WETS tables prepared by the Natural Resources Conservation Service (Natural Resources Conservation Service 2009).

The closest National Weather Service cooperative weather station is the Tracy Carbona station in Tracy, California, approximately 3.5 miles away at an elevation of 40 feet above mean sea level (Natural Resources Conservation Service 2009). Climate data from this weather station indicate the length of the growing season (based on 28° Fahrenheit [F] air temperature thresholds at a frequency of 5 years in 10) to be approximately 365 days, therefore extending year-round (Natural Resources Conservation Service 2009). The climate in the delineation area is characterized by hot, dry summers and cool, moist winters; the mean annual precipitation is approximately 10 inches, and the mean annual air temperature is approximately 61°F (Natural Resources Conservation Service 2009).

## Vegetation

The delineation area contains four vegetation types: freshwater marsh, alfalfa fields, pasture, and unmaintained ornamentals. Of these, only freshwater marsh is recognized as a natural community that is listed on California Department of Fish and Game's List of California Terrestrial Communities Recognized by the California Natural Diversity Database (California Department of Fish and Game 2003). The alfalfa fields, pasture, and unmaintained ornamentals are anthropogenic vegetation types that are not recognized as terrestrial natural communities. A brief description of each of these vegetation types is provided below, and a list of all plants observed within the delineation area is provided in Appendix B, along with the scientific name and the wetland indicator status of each species (Reed 1988). Scientific names follow *The Jepson Manual of Higher Plants of California* (Hickman 1993).

### Freshwater Marsh

Freshwater marsh is the only wetland plant community in the delineation area and occurs within the unnamed irrigation canal that originates south of Grant Line Road, flows parallel to Byron Road, and terminates north of I-205. Representative species observed in the freshwater marsh were narrowleaf cattail (*Typha angustifolia*), watercress (*Rorippa nasturtium-aquaticum*), tall flatsedge (*Cyperus eragrostis*), sprangletop (*Leptochloa fascicularis*), dallisgrass, and rabbitsfoot grass (*Polypogon monspeliensis*). Although no surface hydrological connection is visible, the freshwater marsh appears to be perennially inundated with water from the Lower Main Canal.

### Alfalfa Fields

Alfalfa (*Medicago sativa*) fields encompass approximately 123 acres within the delineation area. The conditions in the field (i.e., active crops, evidence of harvesting) were variable during the multiple site visits to the delineation area. The distribution of alfalfa fields in the delineation area is currently limited to the areas north of I-205.

### Pasture

Pasture comprises approximately 180 acres within the delineation area and represents an artificially created and maintained vegetation community. Pasture occurs throughout the delineation area, with the majority occurring in the large, triangular-shaped area bounded by I-205, Eleventh Street, and Lammers Road. Additional areas of pasture occur north and south of Von Sosten Road just west of the Byron Highway. The hydrological input for pasture is artificially enhanced by irrigation to maintain livestock grazing. Representative plant species observed in pastures in the delineation area were Italian ryegrass (*Lolium multiflorum*), wild oat (*Avena fatua*), hare barley (*Hordeum murinum* ssp. *leporinum*), wildwhite clover (*Trifolium repens*), strawberry clover (*Trifolium fragiferum*), dallisgrass (*Paspalum dilatatum*), Bermuda grass (*Cynodon dactylon*), and bindweed (*Convolvulus arvensis*).

### Unmaintained Ornamentals

Areas of unmaintained ornamental cultivars are scattered in the portion of the delineation area located north of I-205 and encompass approximately 28 acres. Some of these cultivars were planted for windbreak purposes (e.g., the row of tamarisk (*Tamarix* sp.) that runs north and south between West Grant Line and Von Sosten Roads) or as a source of fruit/nuts (e.g., row of apple (*Malus* sp.) and walnut (*Juglans* sp.) trees along West Grant Line Road). Other unmaintained ornamentals in the delineation area have escaped from their intended location in landscaping.

The small area of unmaintained ornamentals located adjacent to the north side of Von Sosten Road appears to represent the original landscaping on a former home site. The largest continuous area of unmaintained ornamentals consists of a patch of tamarisk trees just south of the intersection of West Grant Line Road and West Byron Road.

## Hydrology

There are no natural waterways within the delineation area, which is located in the San Joaquin Delta hydrologic unit (U.S. Environmental Protection Agency 2009). The main feature present is the Lower Main Canal, which carries water in an above-ground channel from the Old River to agricultural areas on the west side of Tracy, continues in a pipe under the city to Sugar Cut, and eventually connects back to the Old River, a navigable water of the United States (Bailey pers. comm.). The other existing irrigation canals and ditches appear to receive water either directly or indirectly from the Lower Main Canal.

## Soil Information

Soils in the delineation area are shown in Figure 2 and are described in Table 3 (below). The majority of the delineation area is located on Capay clay, 0–2% slopes. A small portion is located on Stomar clay loam, 0–2% slopes, including the area north of 11th Street and south of I-205 (McElhiney 1992). Capay clay, 0–2% slopes, consists of moderately well-drained soils in interfan basins that formed in alluvium derived from mixed rock sources and does not have a hydric component or contain hydric inclusions (McElhiney 1992; U.S. Soil Conservation Service 1992). Stomar clay loam, 0–2% slopes, consists of well-drained soils on alluvial fans that formed in alluvium derived from sedimentary rock sources (McElhiney 1992). Stomar clay loam, 0–2 percent slopes, does not have a hydric component, but contains a hydric inclusion (McElhiney 1992; U.S. Soil Conservation Service 1992).

**Table 3. Soil Map Units in the Delineation Area**

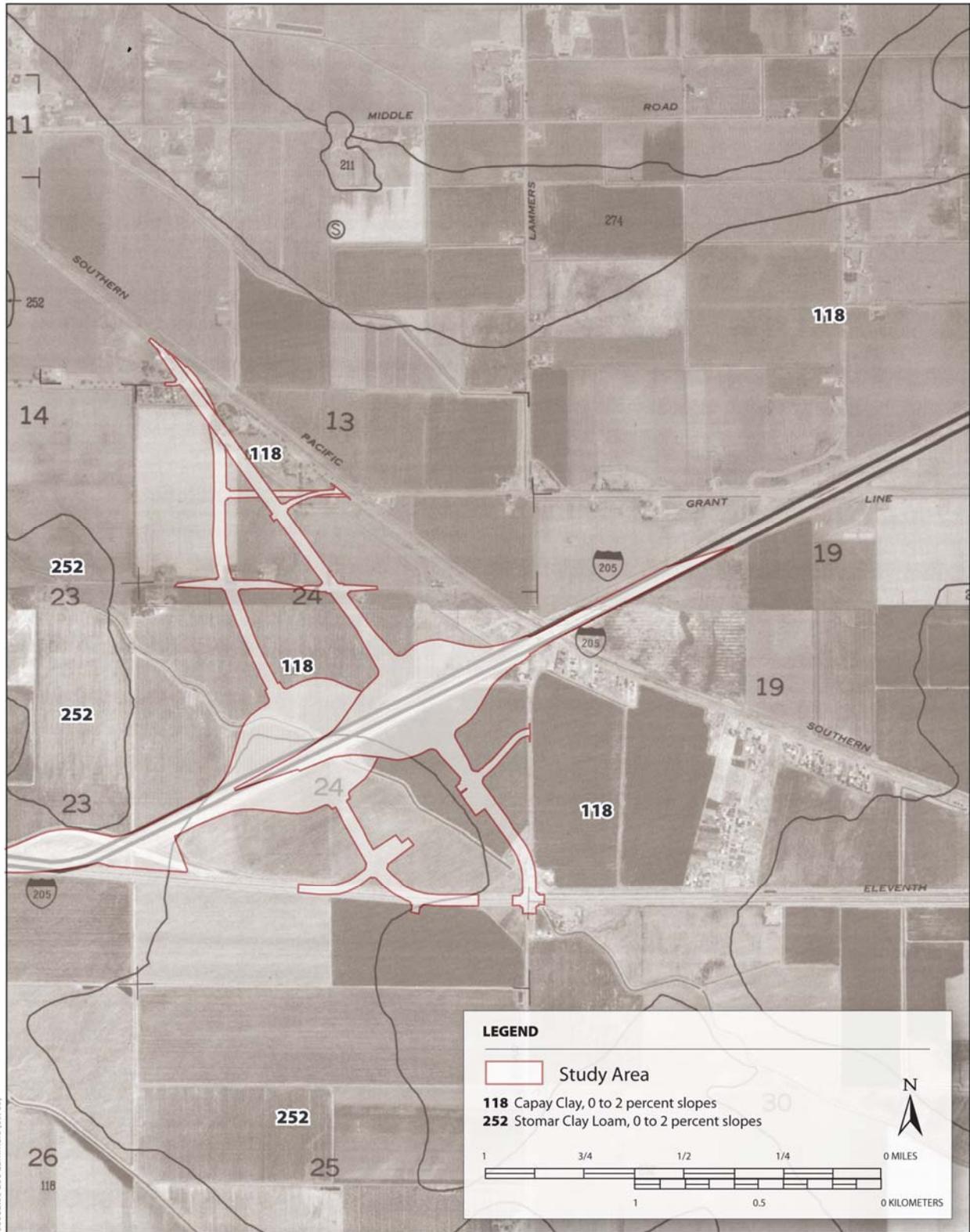
Mapping Unit	Mapping Unit Symbol <sup>a</sup>	Drainage	Landform	Hydric Soils <sup>a</sup>	Hydric Criteria <sup>b</sup>
Capay clay, 0–2 percent slopes	118	Moderately well-drained	Interfan basin	No hydric components or inclusions	N/A
Stomar clay loam, 0–2 percent slopes	252	Well-drained	Alluvial fan	Pescadro (inclusion)	2B3, 3

<sup>a</sup> Sources: McElhiney 1992; U.S. Soil Conservation Service 1992.

<sup>b</sup> The hydric soil criteria are defined as follows (from U.S. Soil Conservation Service 1992):

Hydric Criteria 2B3 & 3:

2. Soils in Aquic suborders, Aquic subgroups, Albolls suborder, Salorthids great group, Pell great groups of Verticols, Pachic subgroups, or Cumulic subgroups that are:
  - B. poorly drained or very poorly drained and have
- (3). A frequently occurring water table at less than 1.5 feet from the surface for a significant period (usually more than 2 weeks) during the growing season if permeability is less than 6.0 in/hr in any layer within 20 inches.
3. Soils that are frequently ponded for long duration or very long duration during the growing season.



**Figure 2 Soils Map**

## Results

A total of 2.252 acres of wetlands and other waters, consisting of three emergent wetlands (0.481 acre), three irrigation canals (1.256 acres), and six irrigation ditches (0.515 acre), were identified in the delineation area. In accordance with a preliminary jurisdictional determination approach, all of these features were interpreted to be within the scope of USACE jurisdiction under CWA Section 404.

Descriptions of the wetlands and other waters are provided below and maps showing their locations are provided in Appendix A. A list of all plants observed within the delineation area is provided in Appendix B, along with the scientific name and the wetland indicator status of each species (Reed 1988). Data forms for areas sampled in the grazing pasture are provided in Appendix C. Representative photographs from the delineation area are provided in Appendix D.

## Wetlands

### Emergent Wetlands

Three areas of emergent wetland (W-1, W-2, and W-3) occur in the delineation area within irrigation canal OW-2 that originates south of Grant Line Road, runs parallel to Byron Road, and ends north of I-205 (Appendix A). Areas of open water are interspersed among emergent wetlands W-1, W-2, and W-3, which encompass areas of 0.076 acre, 0.342 acre, and 0.063 acre, respectively. Vegetation in the emergent wetlands consisted predominantly of hydrophytic plant species: narrowleaf cattail (*Typha angustifolia*) (OBL), watercress (*Rorippa nasturtium-aquaticum*) (OBL), tall flatsedge (*Cyperus eragrostis*) (FACW), sprangletop (*Leptochloa fascicularis*) (OBL), dallisgrass (*Paspalum dilatatum*) (FAC), and rabbitsfoot grass (*Polypogon monspeliensis*) (FACW). The emergent wetlands appear to be perennially inundated, and the primary indicators of wetland hydrology observed were surface water, sediment deposits, and water marks. No data points were examined within the emergent wetlands due to the presence of a perennial water supply.

### Other Waters

The other waters in the delineation area are three irrigation canals (1.256 acres) and six irrigation ditches (0.515 acre).

### Irrigation Canals

The Lower Main Canal (1.040 acres) and two unnamed irrigation canals (0.216 acre) occur in the delineation area (Appendix A). The acreage of the irrigation canals consists of only unvegetated areas (i.e., open water) and the acreage of the emergent wetlands located within irrigation canal OW-2 is considered separately.

### Lower Main Canal

The Lower Main Canal (OW-1) carries water through the delineation area from west to east and is approximately 18 feet wide, unlined, and unvegetated. The OHWM indicators observed were the presence of water staining and multiple observed flow events. Based on information on the

USGS 7.5-minute topographic quadrangle maps of the delineation area and region, the Lower Main Canal appears to receive water from the Old River via an aqueduct and distributes the water to the other irrigation canals and irrigation ditches.

After exiting the delineation area, the Lower Main Canal continues underground to the east side of the city where water from the canal enters Sugar Cut, which drains to the Old River, though some of the water is used for agricultural lands located east of the city (Bailey pers. comm.).

### ***Irrigation Canal OW-2***

Irrigation canal OW-2 originates south of Grant Line Road, parallels Byron Road, and ends north of I-205. Irrigation canal OW-2 contains 0.081 acre of open water and is 7 feet wide at the OHWM that was identified based on the presence of water staining and multiple observed flow events. The canal is unlined, and vegetation observed on the banks consisted mostly of ruderal species, e.g., perennial peppergrass (*Lepidium latifolium*), tree tobacco (*Nicotiana glauca*), Russian thistle (*Salsola tragus*), cheatgrass (*Bromus tectorum*), and prickly lettuce (*Lactuca serriola*).

Irrigation canal OW-2 conveys water southeast and disappears underground at I-205. The supply of water from the Lower Main Canal into irrigation canal OW-2 appears to be perennial, as evidenced by observations of flowing water during the delineation fieldwork and multiple visits for other biological studies associated with the proposed project.

### ***Irrigation Canal OW-3***

Irrigation canal OW-3 is located parallel to the north side of Von Sosten Road and has an area of 0.135 acre. The width of irrigation canal OW-3 is 7.5 feet wide at the OHWM that was identified based on the presence of water staining and multiple observed flow events. Irrigation canal OW-3 is unlined, and the banks support very sparse ruderal vegetation including horseweed (*Conyza canadensis*), barnyard grass (*Echinochloa crus-galli*), and sprangletop (*Leptochloa fascicularis*).

Irrigation canal OW-3 conveys water east before disappearing underground approximately 2,000 feet east of where the Lower Main Canal crosses Von Sosten Road. The supply of water from the Lower Main Canal into irrigation canal OW-3 appears to be perennial, as evidenced by observations of flowing water during the delineation fieldwork and multiple visits for other biological studies associated with the proposed project. However, there is a shut-off valve located at the west end of the drainage near the canal, and the flow observed during the September 30, 2009, site visit was reduced compared to previous site visits.

### ***Irrigation Ditches***

Six irrigation ditches (OW-4 through OW-9) occur in the delineation area and directly or indirectly receive water from the Lower Main Canal. The area encompassed by each of the irrigation ditches is shown below in Table 4.

**Table 4. Individual Acreages of Irrigation Ditches in the Delineation Area**

<b>Drainage Ditch</b>	<b>Area (acres)</b>
OW-4	0.053
OW-5	0.079
OW-6	0.025
OW-7	0.087
OW-8	0.216
OW-9	0.055

Five of the irrigation ditches (OW-4 through OW-7, and OW-9) shared the following characteristics:

- they were dry or contained only a small amount of water at the time of the site visit, although evidence of past flow (i.e., drift lines, soil cracks) was present.
- they did not remain inundated for a sufficient amount of time to potentially support hydrophytic vegetation, and contained sparse, if any, amounts of upland vegetation (e.g., vetch [*Vicia* sp.]).
- they were generally much narrower than the irrigation canals and had a less well-defined bed and bank.
- they contained structures designed to facilitate movement of a relatively small amount of water (i.e., weirs and hoses).

Irrigation ditch OW-8 also lacks a well-defined bed and bank, but appears to receive a perennial water supply from the Lower Main Canal. Irrigation ditch OW-8 is five feet wide and the OHWM indicators observed were the destruction of terrestrial vegetation and multiple observed flow events. Irrigation ditch OW-8 flows northwest and is located along the edges of the pasture immediately south of I-205 in the eastern portion of the delineation area. Irrigation ditch OW-8 terminates into a drain along the northern boundary of the pasture.

## **Interstate and Foreign Commerce Observations**

The function of the network of canals and drainages in the delineation area (i.e., providing water for agricultural purposes) represents a direct connection to interstate and/or foreign commerce.

## **References Cited**

### **Printed References**

California Department of Fish and Game. 2003. *The Vegetation Classification and Mapping Program; List of California Terrestrial Natural Communities Recognized by the California Natural Diversity Database*. September 2003 edition. Wildlife and Habitat Data Analysis Branch. Sacramento, CA.

- Environmental Laboratory. 1987. *U.S. Army Corps of Engineers wetlands delineation manual*. (Technical Report Y-87-1.) Vicksburg, MS: U.S. Army Waterways Experiment Station.
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- Reed, P. B., Jr. 1988. *National List of Plant Species that Occur in Wetlands: California (Region 0)*. (Biological Report 88 [26.10].) Washington, DC: U.S. Fish and Wildlife Service Research and Development. Prepared for National Wetlands Inventory, U.S. Fish and Wildlife Service, Washington, DC.
- U.S. Army Corps of Engineers. 2005. *Ordinary High Water Mark Identification*. (Regulatory Guidance Letter No. 05-05). December 7.
- . 2008. *Regional Supplement to the Corps of Engineers Wetlands Delineation Manual: Arid West Region (Version 2.0)*. ed. J. S. Wakeley, R. W. Lichvar, and C.V. Noble. ERDC/EL TR-08-28. Vicksburg, MS: U.S. Army Engineer Research and Development Center.
- U.S. Environmental Protection Agency. 2009. Surf Your Watershed. Available: <<http://cfpub.epa.gov/surf/locate/index.cfm>>. Accessed: September 4, 2009.
- U.S. Geological Survey. 2009. Topographic maps. Available: <<http://www.usgs.gov/pubprod/>>. Accessed: September 2009.
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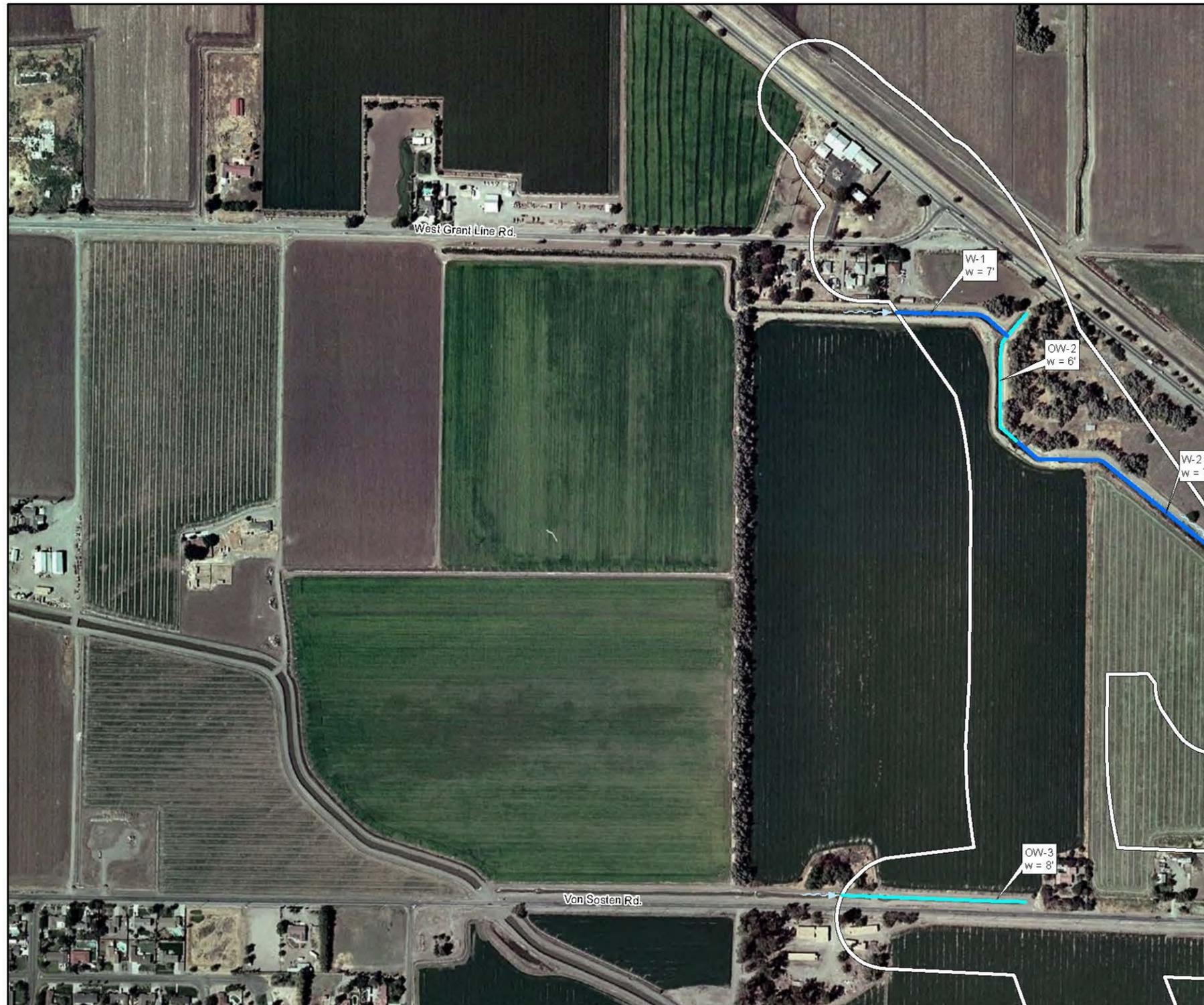
## Personal Communication

- Bailey, Steve. Deputy Director of Water Resources, Department of Water Resources, City of Tracy. September 28, 2006—telephone conversation with ICF Jones & Stokes botanist and wetland ecologist Jessica Hughes, regarding the hydrological connection between Lower Main Canal and Old River via the portion of the canal located underneath the city.

# Appendix A USACE Delineation Maps

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**Exhibit A-1**  
**Delineation of Wetlands and Waters of the United States for the I-205/Lammers Road Interchange Tracy, California**  
 February, 2011

		Acres
<b>Wetlands</b>		<b>0.481</b>
Emergent Wetlands		0.481
W-1	0.076	
W-2	0.342	
W-3	0.063	
<b>Other Waters of the United States</b>		<b>1.771</b>
Irrigation Canal		1.256
OW-1	1.040	
OW-2	0.081	
OW-3	0.135	
Irrigation Ditch		0.515
OW-4	0.053	
OW-5	0.079	
OW-6	0.025	
OW-7	0.087	
OW-8	0.216	
OW-9	0.055	
<b>Total Acreage</b>		<b>2.262</b>

Delineation Area (533.11 Acres)  
 Data Point  
 Flow Direction

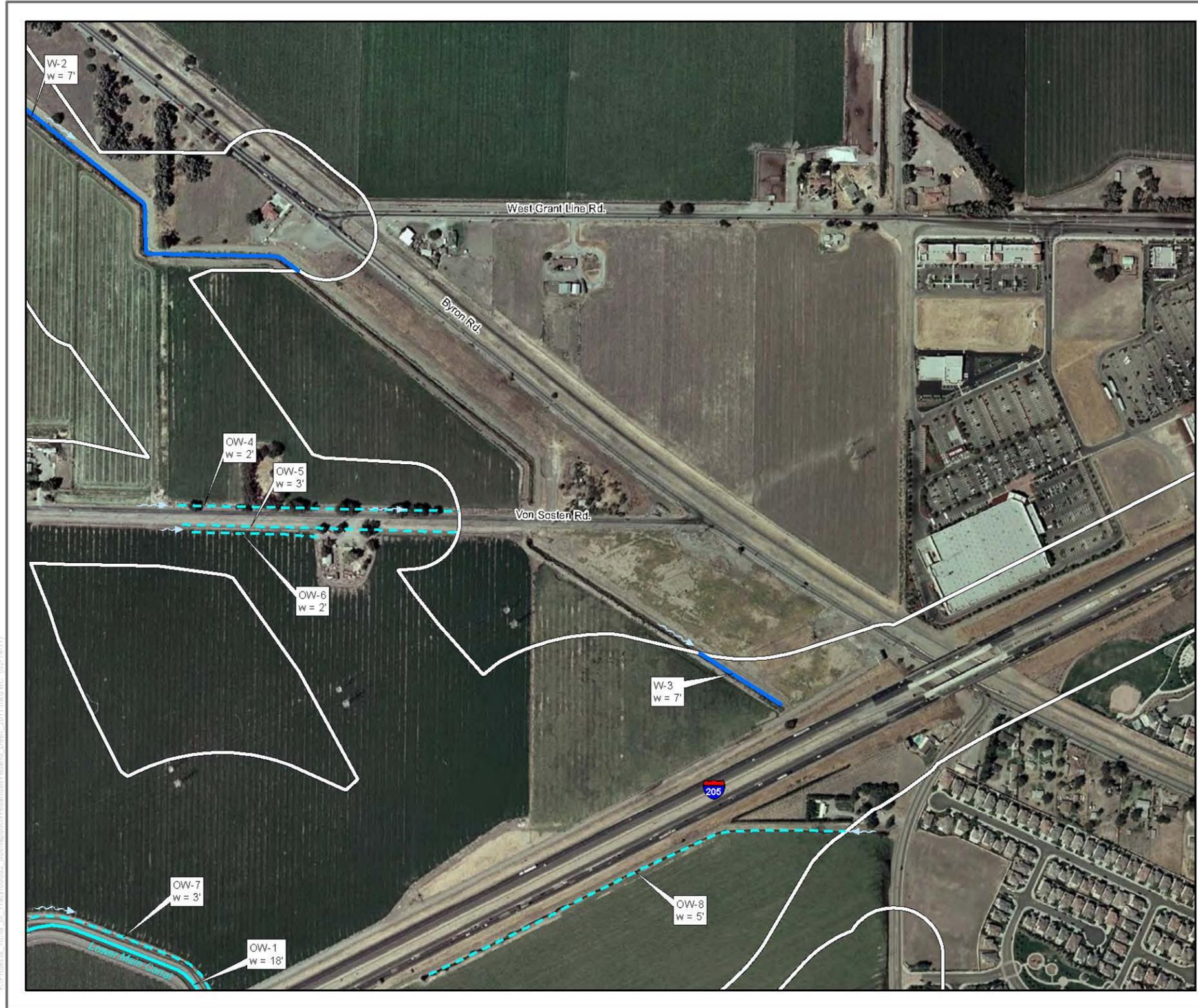
Feet  
 400 200 0 400

Aerial Photo Source: Aerials Express, 2007

Delineated By: J. Hughes	July 2006 and Sept. 2009
Drawn By: B. Crosswhite	February 2011
Verified By: TBD	TBD
U.S. Army Corps of Engineers Regulatory File #: TBD	
Revision	By
	Date

Prepared by:  
 ICF International  
 630 K Street, Suite 400  
 Sacramento, California 95814  
 Office: 916/737-3000





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**Exhibit A-2**  
**Delineation of Wetlands and Waters of the United States for the I-205/Lammers Road Interchange Tracy, California**  
 February, 2011

		Acres
<b>Wetlands</b>		<b>0.481</b>
	Emergent Wetlands	0.481
	W-1	0.076
	W-2	0.342
	W-3	0.063
<b>Other Waters of the United States</b>		<b>1.771</b>
	Irrigation Canal	1.256
	OW-1	1.040
	OW-2	0.081
	OW-3	0.135
	Irrigation Ditch	0.515
	OW-4	0.053
	OW-5	0.079
	OW-6	0.025
	OW-7	0.087
	OW-8	0.216
	OW-9	0.055
<b>Total Acreage</b>		<b>2.252</b>

 Delineation Area (533.11 Acres)

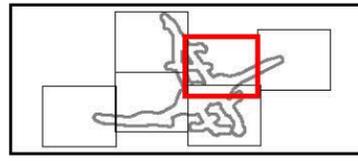
 Data Point

 Flow Direction

Feet  
 400 200 0 400

N

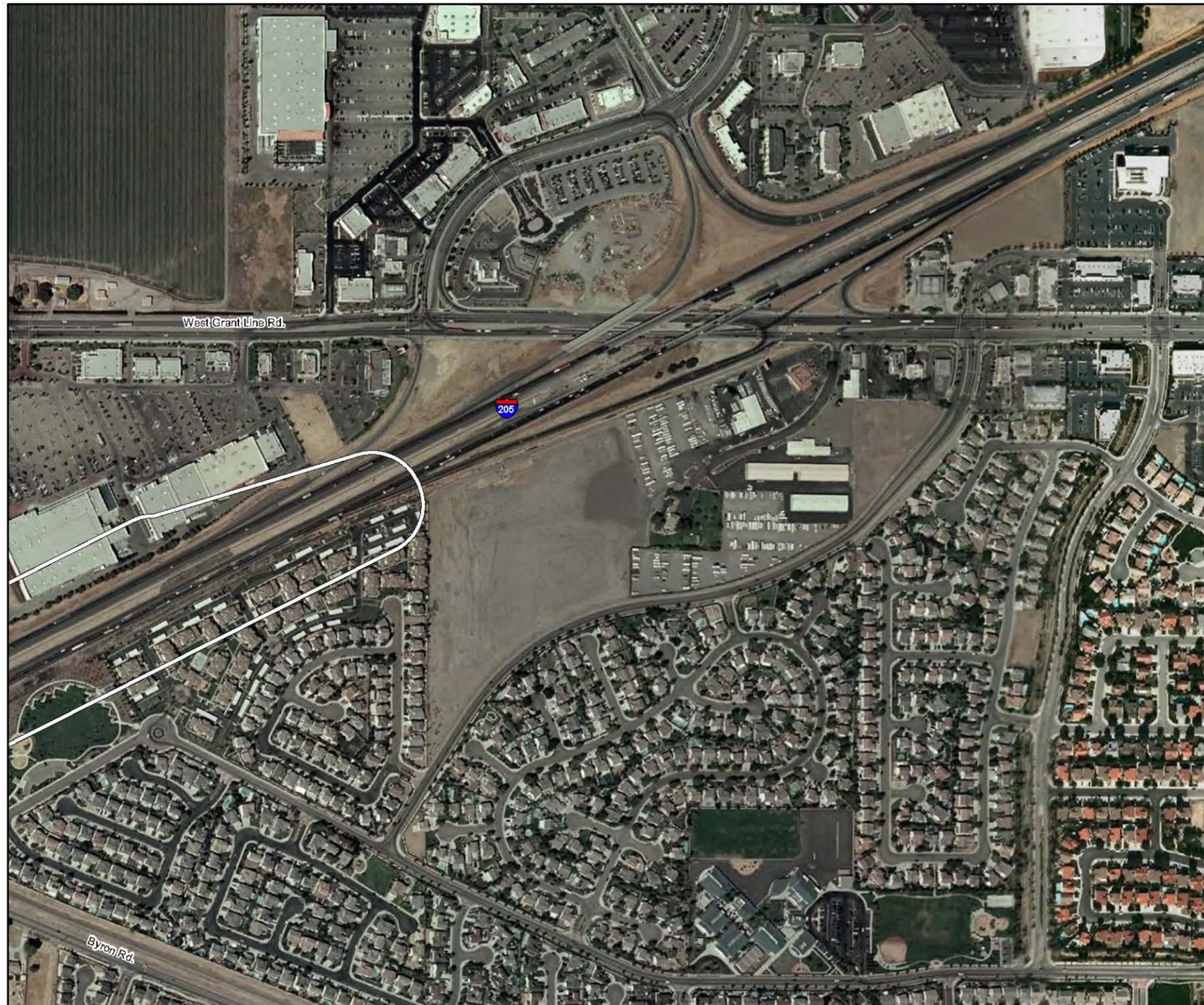
Aerial Photo Source: Aerials Express, 2007



Delineated By: J. Hughes	July 2006 and Sept. 2009	
Drawn By: B. Crosswhite	February 2011	
Verified By: TBD	TBD	
U.S. Army Corps of Engineers Regulatory File #: TBD		
Revision	By	Date

Prepared by:  
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 630 K Street, Suite 400  
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**Exhibit A-3**

**Delineation of Wetlands and Waters of the United States for the I-205/Lammers Road Interchange Tracy, California**

February, 2011

		Acres
<b>Wetlands</b>		<b>0.481</b>
Emergent Wetlands		0.481
W-1	0.076	
W-2	0.342	
W-3	0.063	
<b>Other Waters of the United States</b>		<b>1.771</b>
Irrigation Canal		1.256
OW-1	1.040	
OW-2	0.081	
OW-3	0.135	
Irrigation Ditch		0.515
OW-4	0.053	
OW-5	0.079	
OW-6	0.025	
OW-7	0.087	
OW-8	0.216	
OW-9	0.055	
<b>Total Acreage</b>		<b>2.252</b>

Delineation Area (533.11 Acres)

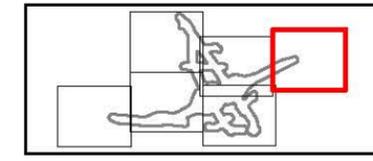
Data Point

Flow Direction

Feet  
400 200 0 400

N

Aerial Photo Source: Aerials Express, 2007



Delineated By: J. Hughes	July 2006 and Sept. 2009	
Drawn By: B. Crosswhite	February 2011	
Verified By: TBD	TBD	
U.S. Army Corps of Engineers Regulatory File #: TBD		
Revision	By	Date

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**Exhibit A-4**  
**Delineation of Wetlands and Waters of the United States for the I-205/Lammers Road Interchange**  
**Tracy, California**  
 February, 2011

		Acres
<b>Wetlands</b>		<b>0.481</b>
Emergent Wetlands		0.481
W-1	0.076	
W-2	0.342	
W-3	0.063	
<b>Other Waters of the United States</b>		<b>1.771</b>
Irrigation Canal		1.256
OW-1	1.040	
OW-2	0.081	
OW-3	0.135	
Irrigation Ditch		0.515
OW-4	0.053	
OW-5	0.079	
OW-6	0.025	
OW-7	0.087	
OW-8	0.216	
OW-9	0.055	
<b>Total Acreage</b>		<b>2.252</b>

Delineation Area (533.11 Acres)  
 Data Point  
 Flow Direction

Feet  
 400 200 0 400

Aerial Photo Source: Aerials Express, 2007

Delineated By: J. Hughes	July 2006 and Sept. 2009	
Drawn By: B. Crosswhite	February 2011	
Verified By: TBD	TBD	
U.S. Army Corps of Engineers Regulatory File #: TBD		
Revision	By	Date

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**Exhibit A-5**  
**Delineation of Wetlands and Waters of the United States for the I-205/Lammers Road Interchange**  
**Tracy, California**  
 February, 2011

		Acres
<b>Wetlands</b>		<b>0.481</b>
Emergent Wetlands		0.481
W-1	0.076	
W-2	0.342	
W-3	0.063	
<b>Other Waters of the United States</b>		<b>1.771</b>
Irrigation Canal		1.256
OW-1	1.040	
OW-2	0.081	
OW-3	0.135	
Irrigation Ditch		0.515
OW-4	0.053	
OW-5	0.079	
OW-6	0.025	
OW-7	0.087	
OW-8	0.216	
OW-9	0.055	
<b>Total Acreage</b>		<b>2.262</b>

Delineation Area (533.11 Acres)  
 Data Point  
 Flow Direction

Feet  
 400 200 0 400

Aerial Photo Source: Aerials Express, 2007

Delineated By: J. Hughes	July 2006 and Sept. 2009
Drawn By: B. Crosswhite	February 2011
Verified By: TBD	TBD
U.S. Army Corps of Engineers Regulatory File #: TBD	
Revision	By
Date	

Prepared by:  
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**Exhibit A-6**  
**Delineation of Wetlands and Waters of the United States for the I-205/Lammers Road Interchange Tracy, California**  
 February, 2011

		Acres
<b>Wetlands</b>		<b>0.481</b>
Emergent Wetlands		0.481
W-1	0.076	
W-2	0.342	
W-3	0.063	
<b>Other Waters of the United States</b>		<b>1.771</b>
Irrigation Canal		1.256
OW-1	1.040	
OW-2	0.081	
OW-3	0.135	
Irrigation Ditch		0.515
OW-4	0.053	
OW-5	0.079	
OW-6	0.025	
OW-7	0.087	
OW-8	0.216	
OW-9	0.055	
<b>Total Acreage</b>		<b>2.262</b>

Delineation Area (533.11 Acres)

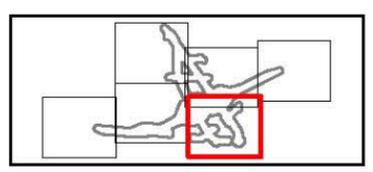
Data Point

Flow Direction

Feet  
 400 200 0 400

N

Aerial Photo Source: Aerials Express, 2007



Delineated By: J. Hughes	July 2006 and Sept. 2009	
Drawn By: B. Crosswhite	February 2011	
Verified By: TBD	TBD	
U.S. Army Corps of Engineers Regulatory File #: TBD		
Revision	By	Date

Prepared by:  
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# Appendix B Plant Species Observed in the Delineation Area

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## Appendix B. Plant Species Observed in the Delineation Area

Scientific Name	Common Name	Wetland Indicator Status <sup>1</sup>
<i>Avena fatua</i>	wild oat	UPL
<i>Brassica nigra</i>	black mustard	UPL
<i>Bromus carinatus</i>	California brome	UPL
<i>Bromus diandrus</i>	ripgut brome	NI
<i>Bromus hordeaceus (B. mollis)</i>	soft chess	FACU
<i>Bromus madritensis ssp. rubens</i>	red brome	UPL
<i>Bromus tectorum</i>	cheatgrass	UPL
<i>Capsella bursa-pastoris</i>	shepherd's purse	FAC
<i>Centaurea solstitialis</i>	yellow star-thistle	UPL
<i>Convolvulus arvensis</i>	bindweed	UPL
<i>Conyza canadensis</i>	horseweed	FAC
<i>Cynodon dactylon</i>	Bermudagrass	FAC
<i>Cyperus eragrostis</i>	tall flatsedge	FACW
<i>Echinochloa crus-galli</i>	barnyard grass	FACW
<i>Erodium cicutarium</i>	redstem filaree	UPL
<i>Eucalyptus sp.</i>	eucalyptus	N/A
<i>Foeniculum vulgare</i>	fennel	FACU
<i>Hedera helix</i>	English ivy	UPL
<i>Hordeum murinum ssp. leporinum</i>	hare barley	NI*
<i>Juglans sp.</i>	walnut	N/A
<i>Lactuca serriola</i>	prickly lettuce	FAC
<i>Lagerstroemia indica</i>	crapemyrtle	UPL
<i>Lepidium latifolium</i>	perennial peppergrass	OBL
<i>Leptochloa fascicularis</i>	sprangletop	OBL
<i>Lolium multiflorum</i>	Italian ryegrass	FAC
<i>Lotus corniculatus</i>	birdsfoot trefoil	FAC
<i>Malus sp.</i>	apple	N/A
<i>Malva neglecta</i>	common mallow	UPL
<i>Malva nicaeensis</i>	bull mallow	UPL
<i>Medicago polymorpha</i>	bur clover	UPL
<i>Medicago sativa</i>	alfalfa	UPL
<i>Nerium oleander</i>	oleander	UPL
<i>Nicotiana glauca</i>	tree tobacco	FAC
<i>Paspalum dilatatum</i>	dallisgrass	FAC
<i>Phalaris aquatica</i>	Harding grass	FAC
<i>Phoenix canariensis</i>	Canary Island date palm	UPL
<i>Picris echioides</i>	bristly oxtongue	FAC
<i>Pinus pinea</i>	stone pine	UPL
<i>Plantago lanceolata</i>	English plantain	FAC
<i>Polygonum arenastrum (P. aviculare)</i>	common knotweed	FAC
<i>Polypogon monspeliensis</i>	rabbitsfoot grass	FACW
<i>Raphanus sativus</i>	radish	UPL
<i>Rorippa nasturtium-aquaticum</i>	watercress	OBL
<i>Rumex crispus</i>	curly dock	FACW
<i>Salsola tragus</i>	Russian thistle	UPL
<i>Senecio vulgaris</i>	Old-man-of-spring	NI*

Scientific Name	Common Name	Wetland Indicator Status <sup>1</sup>
<i>Silybum marianum</i>	milk thistle	UPL
<i>Tamarix</i> sp.	tamarisk	N/A
<i>Trifolium fragiferum</i>	strawberry clover	NI*
<i>Trifolium repens</i>	wildwhite clover	FACU
<i>Typha angustifolia</i>	narrowleaf cattail	OBL

<sup>1</sup> Indicator Status Definitions:

OBL = Obligate, almost always occurs in wetlands (>99% probability of occurrence)

FACW = Facultative wetland, usually occurs in wetlands (66%–99% probability)

FAC = Facultative, equally likely to occur in wetlands or nonwetlands (34%–66% probability)

FACU = Facultative upland, usually occurs in nonwetlands but occasionally in wetlands (1%–33% probability)

UPL = Obligate upland, almost never occurs in wetlands (<1% probability)

NI = No indicator (insufficient information to assign an indicator status)

\* = Tentative assignment based on limited information from which to determine an indicator status

Source: Reed 1988.

# Appendix C Routine Wetland Delineation Data Forms

---



Yes

WETLAND DETERMINATION FORM - Arid West Region

Project/Site: Lammers Road/I-205 Interchange City/County: Tracy/San Joaquin Data Point: DP-1
Applicant/Owner: City of Tracy State: CA Date: 09/30/09
Investigator(s): J. Hughes Section, Township, Range: 24/2S/4E
Landform (hillslope, terrace, etc.): plain Local relief (concave, convex, none): none Slope (%): 0
Subregion (LRR): C Lat: Long: Datum:
Soil Map Unit Name: Stomar clay loam, 0 to 2 percent slopes NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes No X (If no, explain in Remarks)
Are Vegetation N Soil N or Hydrology N significantly disturbed? Are "Normal Circumstances" present? [X] yes [ ] no
Are Vegetation N Soil N or Hydrology N naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes No X
Hydric Soil Present? Yes No X
Wetland Hydrology Present? Yes X No
Is the Sampled Area within a wetland? Yes No X
Remarks:
Hydrologic conditions are not typical for this time of year b/c area sampled is located in a pasture that is artificially irrigated for cattle grazing.

VEGETATION

Tree Stratum (scientific names) woody plants >3" dbh Absolute % Cover Dominant Species? Indicator Status
Total Cover: 0
Sapling/Shrub Stratum (woody plants <3" dbh)
Total Cover: 0
Herb Stratum (non-woody plants, regardless of size)
Lolium multiflorum 18 Y FAC
Convolvulus arvensis 18 Y UPL
Trifolium repens 18 Y FACU
Plantago lanceolata 18 Y FAC
Trifolium fragiferum 18 Y UPL
Total Cover: 90
Woody Vine Stratum (regardless of size)
Total Cover: 0
% Bare ground in Herb Stratum 10 % Cover of Biotic Crust 0
Prevalence Index worksheet
Total % Cover of: Multiply by:
OBL species x 1 = 0
FACW species x 2 = 0
FAC species x 3 = 0
FACU species x 4 = 0
UPL species x 5 = 0
Column Total: 0 (A) 0 (B)
Prevalence Index = B/A = #DIV/0!
Hydrophytic vegetation indicators
Dominance test is >50%
Prevalence index is <= 3.0^1
Morphological adaptations^1 (Provide supporting data in Remarks or on a separate sheet)
Problematic Hydrophytic Vegetation^1 (Explain)
^1 Indicators of hydric soils and wetland hydrology must be present
Hydrophytic Vegetation Present? Yes No X
Remarks:
Vegetation in pasture consists of a mixture of facultative and upland vegetation.



Yes

WETLAND DETERMINATION FORM - Arid West Region

Project/Site: Lammers Road/I-205 Interchange City/County: Tracy/San Joaquin Data Point: DP-2
Applicant/Owner: City of Tracy State: CA Date: 09/30/09
Investigator(s): J. Hughes Section, Township, Range: 24/2S/4E
Landform (hillslope, terrace, etc.): plain Local relief (concave, convex, none): none Slope (%): 0
Subregion (LRR): C Lat: Long: Datum:
Soil Map Unit Name: Stomar clay loam, 0 to 2 percent slopes NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes No X (If no, explain in Remarks)
Are Vegetation N Soil N or Hydrology N significantly disturbed? Are "Normal Circumstances" present? [X] yes [ ] no
Are Vegetation N Soil N or Hydrology N naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes No X
Hydric Soil Present? Yes No X
Wetland Hydrology Present? Yes X No
Is the Sampled Area within a wetland? Yes No X
Remarks:
Hydrologic conditions are not typical for this time of year b/c area sampled is located in a pasture that is artificially irrigated for cattle grazing.

VEGETATION

Tree Stratum (scientific names) woody plants >3" dbh Absolute % Cover Dominant Species? Indicator Status
Total Cover: 0
Sapling/Shrub Stratum (woody plants <3" dbh)
Total Cover: 0
Herb Stratum (non-woody plants, regardless of size)
Lolium multiflorum 20 Y FAC
Trifolium repens 20 Y FACU
Trifolium fragiferum 20 Y UPL
Plantago lanceolata 20 Y FAC
Total Cover: 0
Woody Vine Stratum (regardless of size)
Total Cover:
% Bare ground in Herb Stratum 20 % Cover of Biotic Crust
Hydrophytic Vegetation Present? Yes No X



Yes

WETLAND DETERMINATION FORM - Arid West Region

Project/Site: Lammers Road/I-205 Interchange City/County: Tracy/San Joaquin Data Point: DP-3
Applicant/Owner: City of Tracy State: CA Date: 09/30/09
Investigator(s): J. Hughes Section, Township, Range: 24/2S/4E
Landform (hillslope, terrace, etc.): plain Local relief (concave, convex, none): none Slope (%): 0
Subregion (LRR): C Lat: Long: Datum:
Soil Map Unit Name: Stomar clay loam, 0 to 2 percent slopes NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes No X (If no, explain in Remarks)
Are Vegetation N Soil N or Hydrology N significantly disturbed? Are "Normal Circumstances" present? [X] yes [ ] no
Are Vegetation N Soil N or Hydrology N naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes No X
Hydric Soil Present? Yes No X
Wetland Hydrology Present? Yes X No
Is the Sampled Area within a wetland? Yes No X
Remarks:
Hydrologic conditions are not typical for this time of year b/c area sampled is located in a pasture that is artificially irrigated for cattle grazing.

VEGETATION

Table with columns: Tree Stratum (scientific names) woody plants >3" dbh, Absolute % Cover, Dominant Species?, Indicator Status, Dominance Test worksheet, Sapling/Shrub Stratum (woody plants <3" dbh), Herb Stratum (non-woody plants, regardless of size), Woody Vine Stratum (regardless of size), % Bare ground in Herb Stratum, % Cover of Biotic Crust, Hydrophytic Vegetation Present?
Includes sub-tables for Dominance Test worksheet, Prevalence Index worksheet, and Hydrophytic vegetation indicators.



DATA FORM  
ROUTINE WETLAND DETERMINATION

Project/Site:	<b>Lammers Road/I-205 Interchange</b>	State:	<b>California</b>
Applicant/Owner:	<b>City of Tracy</b>	County:	<b>San Joaquin</b>
Investigator(s):	<b>J. Cook</b>	S/T/R:	<b>24/2S/4E</b>
Date:	<b>07/14/06</b>	Community ID:	<b>Irrigated Pasture</b>
Do normal circumstances exist on the site?	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	Transect ID:	
Is the site significantly disturbed (atypical situation)?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	Plot ID:	<b>DP-1</b>
Is the area a potential problem area? (If needed, explain below)	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		

**VEGETATION**

Dominant Plant Species	Strata	% Rel. Cover	Indicator	Associate Plant Species	Strata	% Rel. Cover	Indicator
<i>Lolium multiflorum</i>	H	20	FAC				
<i>Convolvulus arvensis</i>	H	20	NL				
<i>Trifolium repens</i>	H	20	FACU+				
<i>Plantago lanceolata</i>	H	20	FAC-				
<i>Trifolium fragiferum</i>	H	20	NI				
Percent of dominants that are OBL, FACW, or FAC (excluding FAC-):		1/5=20%		Total vegetation cover		85 %	
<input type="checkbox"/> Morphological Adaptations <input type="checkbox"/> Physiological/Reproductive Adaptations <input type="checkbox"/> Visual Observation of Plant Species Growing in Areas of Prolonged Inundation/Saturation		<input type="checkbox"/> Personal Knowledge of Regional Plant Communities <input type="checkbox"/> Technical Literature <input type="checkbox"/> Other (explain below)					
<b>Hydrophytic Vegetation Present?</b>		<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO					
<b>Remarks:</b>							

**HYDROLOGY**

Is it the growing season?	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		
Based On:	<input type="checkbox"/> Soil Temp (record)		
	<input checked="" type="checkbox"/> Other (explain)	<b>date of survey</b>	
Typical length:	280 Days	5% =	14 days
Recorded Data (describe below):			
<input type="checkbox"/> Stream, Lake, or Tide Gauge <input checked="" type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> None Available			
Field Observations:			
Depth of Surface Water:	0.75	inches	
Depth to Standing Water in Pit:	>12	inches	
Depth to Saturated Soil:	>12	inches	
<b>Wetland Hydrology Present?</b>			
<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			
<b>Remarks:</b>			
Hydrology is artificially maintained by flooding to provide grazing for livestock.			

**SOILS**

Plot ID: DP-1

Map Unit Name (series and phase): <b>Stomar clay loam, 0 to 2 percent slopes</b>					Drainage Class: <b>Well drained</b>			
Taxonomy (subgroup): <b>Mollic Haploxeralfs</b>					Field observations confirm mapped type? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO			
Is data point located within a hydric inclusion? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO								
Profile Description								
Horizon	Depth (inches)	Texture	Structure	Matrix Color (moist)	Redoximorphic Features			Other
					Abundance, Size, Contrast	Type, location	Color (moist)	
A	0-12	c	---	7.5YR 3/1	none	---	---	---
Hydric Soil Indicators (check all that apply):								
<input type="checkbox"/> Histosol <input type="checkbox"/> Histic Epipedon <input type="checkbox"/> Sulfidic Odor <input type="checkbox"/> Aquic Moisture Regime <input type="checkbox"/> Reducing Conditions ( $\alpha, \alpha'$ -dipyridyl test) <input checked="" type="checkbox"/> Gleyed or Low-Chroma ( $\leq 1$ ) matrix <input type="checkbox"/> Matrix Chroma $\leq 2$ with Redoximorphic Concentrations and/or Depletions				<input type="checkbox"/> Mn or Fe Concretions or Nodules <input type="checkbox"/> High Organic Content in Surface Layer of Sandy Soils <input type="checkbox"/> Organic Streaking in Sandy Soils <input type="checkbox"/> Listed on National/Local Hydric Soils List <input type="checkbox"/> Other (explain below)				
Hydric Soils Present? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO								
Remarks:								

**WETLAND DETERMINATION :**

Hydrophytic vegetation present? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO				
Wetland hydrology present? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO				
Hydric soils present? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO				
Is the sampling point within a wetland? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO				
Remarks:				
<p>The data point is located within an irrigated pasture, which is an artificially created community in an upland area that is maintained by the use of flooding to enable year-round livestock grazing. Although the irrigated pasture has positive indicators for wetland hydrology and soils, the vegetation is not hydrophytic.</p>				

**Texture and Rock Fragment Content**

Texture	Rock Fragments
cos - coarse sand	gr - gravelly
s - sand	vgr - very gravelly
fs - fine sand	xgr - extremely gravelly
vfs - very fine sand	cb - cobbly
lcos - loamy coarse sand	vcb - very cobbly
ls - loamy sand	xcb - extremely cobbly
lfs - loamy fine sand	st - stony
lvfs - loamy very fine sand	vst - very stony
cosl - coarse sandy loam	xst - extremely stony
sl - sandy loam	
fsl - fine sandy loam	

**Redoximorphic Feature Morphology**

Abundance	Type
f - few	Fe-x - iron concentration (soft mass)
c - common	Fe-nc - iron nodule or concretion
m - many	Mn-x - manganese concentration (soft mass)
	Mn-nc - manganese nodule or concretion
	d - depletion
Size	Location
1 - fine (<2mm)	mat - soil matrix
2 - medium 2-5mm)	ped - ped surface
3 - coarse (5-20mm)	por - soil pores
4 - very coarse (20-76mm)	ctr - other
5 - extremely coarse (>76mm)	
Contrast	
f - faint	
d - distinct	
p - prominent	

DATA FORM  
ROUTINE WETLAND DETERMINATION

Project/Site:	<b>Lammers Road/I-205 Interchange</b>	State:	<b>California</b>
Applicant/Owner:	<b>City of Tracy</b>	County:	<b>San Joaquin</b>
Investigator(s):	<b>J. Cook</b>	S/T/R:	<b>24/2S/4E</b>
Date:	<b>07/14/06</b>	Community ID:	<b>Irrigated Pasture</b>
Do normal circumstances exist on the site?	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	Transect ID:	
Is the site significantly disturbed (atypical situation)?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	Plot ID:	<b>DP-2</b>
Is the area a potential problem area? (If needed, explain below)	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		

**VEGETATION**

Dominant Plant Species	Strata	% Rel. Cover	Indicator	Associate Plant Species	Strata	% Rel. Cover	Indicator
<i>Lolium multiflorum</i>	H	25	FAC				
<i>Trifolium fragiferum</i>	H	25	NI				
<i>Trifolium repens</i>	H	25	FACU+				
<i>Plantago lanceolata</i>	H	25	FAC-				
Percent of dominants that are OBL, FACW, or FAC (excluding FAC-):		1/4=25%		Total vegetation cover		80 %	
<input type="checkbox"/> Morphological Adaptations <input type="checkbox"/> Physiological/Reproductive Adaptations <input type="checkbox"/> Visual Observation of Plant Species Growing in Areas of Prolonged Inundation/Saturation		<input type="checkbox"/> Personal Knowledge of Regional Plant Communities <input type="checkbox"/> Technical Literature <input type="checkbox"/> Other (explain below)					
<b>Hydrophytic Vegetation Present?</b>		<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO					
<b>Remarks:</b>							

**HYDROLOGY**

Is it the growing season?	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		
Based On:	<input type="checkbox"/> Soil Temp (record)		
	<input checked="" type="checkbox"/> Other (explain)	<b>date of survey</b>	
Typical length:	280 Days	5% =	14 days
Recorded Data (describe below):			
<input type="checkbox"/> Stream, Lake, or Tide Gauge			
<input checked="" type="checkbox"/> Aerial Photographs			
<input type="checkbox"/> Other			
<input type="checkbox"/> None Available			
Field Observations:			
Depth of Surface Water:	0.75	inches	
Depth to Standing Water in Pit:	>12	inches	
Depth to Saturated Soil:	>12	inches	
<b>Wetland Hydrology Present?</b>			
<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			
<b>Remarks:</b>			
Hydrology is artificially maintained by flooding to provide grazing for livestock.			

**SOILS**

Plot ID: DP-2

Map Unit Name (series and phase): <b>Stomar clay loam, 0 to 2 percent slopes</b>					Drainage Class: <b>Well drained</b>			
Taxonomy (subgroup): <b>Mollic Haploxeralfs</b>					Field observations confirm mapped type? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO			
Is data point located within a hydric inclusion? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO								
Profile Description								
Horizon	Depth (inches)	Texture	Structure	Matrix Color (moist)	Redoximorphic Features			Other
					Abundance, Size, Contrast	Type, location	Color (moist)	
A	0-12	c	---	7.5YR 3/1	none	---	---	---
Hydric Soil Indicators (check all that apply):								
<input type="checkbox"/> Histosol <input type="checkbox"/> Histic Epipedon <input type="checkbox"/> Sulfidic Odor <input type="checkbox"/> Aquic Moisture Regime <input type="checkbox"/> Reducing Conditions ( $\alpha, \alpha'$ -dipyridyl test) <input checked="" type="checkbox"/> Gleyed or Low-Chroma ( $\leq 1$ ) matrix <input type="checkbox"/> Matrix Chroma $\leq 2$ with Redoximorphic Concentrations and/or Depletions				<input type="checkbox"/> Mn or Fe Concretions or Nodules <input type="checkbox"/> High Organic Content in Surface Layer of Sandy Soils <input type="checkbox"/> Organic Streaking in Sandy Soils <input type="checkbox"/> Listed on National/Local Hydric Soils List <input type="checkbox"/> Other (explain below)				
Hydric Soils Present? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO								
Remarks:								

**WETLAND DETERMINATION :**

Hydrophytic vegetation present? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO				
Wetland hydrology present? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO				
Hydric soils present? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO				
Is the sampling point within a wetland? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO				
Remarks:				
The data point is located within an irrigated pasture, which is an artificially created community in an upland area that is maintained by the use of flooding to enable year-round livestock grazing. Although the irrigated pasture has positive indicators for wetland hydrology and soils, the vegetation is not hydrophytic.				

**Texture and Rock Fragment Content**

Texture	Rock Fragments
cos - coarse sand	gr - gravelly
s - sand	vgr - very gravelly
fs - fine sand	xgr - extremely gravelly
vfs - very fine sand	cb - cobbly
lcos - loamy coarse sand	vcb - very cobbly
ls - loamy sand	xcb - extremely cobbly
lfs - loamy fine sand	st - stony
lvfs - loamy very fine sand	vst - very stony
cosl - coarse sandy loam	xst - extremely stony
sl - sandy loam	
fsl - fine sandy loam	
vfsi - very fine sandy loam	
l - loam	
sil - silt loam	
si - silt	
scl - sandy clay loam	
cl - clay loam	
sicl - silty clay loam	
sc - sandy clay	
sic - silty clay	
c - clay	

**Redoximorphic Feature Morphology**

Abundance	Type
f - few	Fe-x - iron concentration (soft mass)
c - common	Fe-nc - iron nodule or concretion
m - many	Mn-x - manganese concentration (soft mass)
	Mn-nc - manganese nodule or concretion
	d - depletion
Size	Location
1 - fine (<2mm)	mat - soil matrix
2 - medium 2-5mm)	ped - ped surface
3 - coarse (5-20mm)	por - soil pores
4 - very coarse (20-76mm)	ctr - other
5 - extremely coarse (>76mm)	
Contrast	
f - faint	
d - distinct	
p - prominent	

2/20/2007

Data point 2

DATA FORM  
ROUTINE WETLAND DETERMINATION

Project/Site:	<b>Lammers Road/I-205 Interchange</b>	State:	<b>California</b>
Applicant/Owner:	<b>City of Tracy</b>	County:	<b>San Joaquin</b>
Investigator(s):	<b>J. Cook</b>	S/T/R:	<b>24/2S/4E</b>
Date:	<b>07/14/06</b>	Community ID:	<b>Irrigated Pasture</b>
Do normal circumstances exist on the site?	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	Transect ID:	
Is the site significantly disturbed (atypical situation)?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	Plot ID:	<b>DP-3</b>
Is the area a potential problem area? (If needed, explain below)	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		

**VEGETATION**

Dominant Plant Species	Strata	% Rel. Cover	Indicator	Associate Plant Species	Strata	% Rel. Cover	Indicator
<i>Trifolium repens</i>	H	40	FACU+				
<i>Trifolium fragiferum</i>	H	30	NI				
<i>Convolvulus arvensis</i>	H	30	FAC				
Percent of dominants that are OBL, FACW, or FAC (excluding FAC-):		1/3=33%		Total vegetation cover		75 %	
<input type="checkbox"/> Morphological Adaptations <input type="checkbox"/> Physiological/Reproductive Adaptations <input type="checkbox"/> Visual Observation of Plant Species Growing in Areas of Prolonged Inundation/Saturation		<input type="checkbox"/> Personal Knowledge of Regional Plant Communities <input type="checkbox"/> Technical Literature <input type="checkbox"/> Other (explain below)					
<b>Hydrophytic Vegetation Present?</b>		<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO					
<b>Remarks:</b>							

**HYDROLOGY**

Is it the growing season? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	Wetland Hydrology Indicators:
Based On: <input type="checkbox"/> Soil Temp (record) <input checked="" type="checkbox"/> Other (explain) <b>date of survey</b>	Primary Indicators:
Typical length: <b>280</b> Days <b>5% = 14 days</b>	<input checked="" type="checkbox"/> Inundated <input type="checkbox"/> Saturated Upper 12 Inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands
Recorded Data (describe below): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input checked="" type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> None Available	Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Rhizospheres in Upper 12 Inches <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (explain below)
Field Observations: Depth of Surface Water: <b>0.5</b> inches Depth to Standing Water in Pit: <b>&gt;12</b> inches Depth to Saturated Soil: <b>&gt;12</b> inches	
<b>Wetland Hydrology Present?</b>	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
<b>Remarks:</b>	
<b>Data point is located in an irrigated pasture, which is artificially maintained by flooding to provide grazing for livestock.</b>	

**SOILS**

Plot ID: DP-2

Map Unit Name (series and phase): <u>Stomar clay loam, 0 to 2 percent slopes</u>					Drainage Class: <u>Well drained</u>			
Taxonomy (subgroup): <u>Mollic Haploxeralfs</u>					Field observations confirm mapped type? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO			
Is data point located within a hydric inclusion? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO								
Profile Description								
Horizon	Depth (inches)	Texture	Structure	Matrix Color (moist)	Redoximorphic Features			Other
					Abundance, Size, Contrast	Type, location	Color (moist)	
A	0-12	c		7.5YR 3/1	none	---	---	---
Hydric Soil Indicators (check all that apply):								
<input type="checkbox"/> Histosol <input type="checkbox"/> Histic Epipedon <input type="checkbox"/> Sulfidic Odor <input type="checkbox"/> Aquic Moisture Regime <input type="checkbox"/> Reducing Conditions ( $\alpha, \alpha'$ dipyrldyl test) <input checked="" type="checkbox"/> Gleyed or Low-Chroma ( $\leq 1$ ) matrix <input type="checkbox"/> Matrix Chroma $\leq 2$ with Redoximorphic Concentrations and/or Depletions				<input type="checkbox"/> Mn or Fe Concretions or Nodules <input type="checkbox"/> High Organic Content in Surface Layer of Sandy Soils <input type="checkbox"/> Organic Streaking in Sandy Soils <input type="checkbox"/> Listed on National/Local Hydric Soils List <input type="checkbox"/> Other (explain below)				
Hydric Soils Present? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO								
Remarks:								

**WETLAND DETERMINATION :**

Hydrophytic vegetation present? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO			
Wetland hydrology present? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			
Hydric soils present? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		Is the sampling point within a wetland? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
Remarks:			
The data point is located within an irrigated pasture, which is an artificially created community in an upland area that is maintained by the use of flooding to enable year-round livestock grazing. Although the irrigated pasture has positive indicators for wetland hydrology and soils, the vegetation is not hydrophytic.			

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ls - loamy sand	xcb - extremely cobbly
lfs - loamy fine sand	st - stony
lvfs - loamy very fine sand	vst - very stony
cosl - coarse sandy loam	xst - extremely stony
sl - sandy loam	
fsl - fine sandy loam	
vfsi - very fine sandy loam	
l - loam	
sil - silt loam	
si - silt	
scl - sandy clay loam	
cl - clay loam	
sicl - silty clay loam	
sc - sandy clay	
sic - silty clay	
c - clay	

**Redoximorphic Feature Morphology**

Abundance	Type
f - few	Fe-x - iron concentration (soft mass)
c - common	Fe-nc - iron nodule or concretion
m - many	Mn-x - manganese concentration (soft mass)
	Mn-nc - manganese nodule or concretion
	d - depletion
Size	Location
1 - fine (<2mm)	mat - soil matrix
2 - medium 2-5mm)	ped - ped surface
3 - coarse (5-20mm)	por - soil pores
4 - very coarse (20-76mm)	ctr - other
5 - extremely coarse (>76mm)	
Contrast	
f - faint	
d - distinct	
p - prominent	

2/20/2007

Data point 3

# Appendix D Representative Photographs of the Delineation Area

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Irrigation Ditches OW-5 (Right) & OW-6 (Left) (Facing West)

06082.06 Lammers Road Interchange WD (1/1/09)



Irrigation Ditch OW-7 (Facing Northwest)

06082.06 Lammers Road Interchange WD (1/1/09)



Emergent Wetland W-3 (Facing Northwest)



Irrigation Ditch OW-9 (Facing Northwest)

06082.06 Lammers Road Interchange WD (1/1/09)



Emergent Wetland W-1 (Facing East)



Irrigation Canal OW-2 (Facing Northeast)

06082.06 Lammers Road Interchange WD (1/1/09)



Irrigation Ditch OW-8 (Facing West)



Culvert at end of Irrigation Ditch OW-8 (Facing West)

06082.06 Lammers Road Interchange WD (1/1/09)



Irrigation Canal OW-3 (Facing East)



Lower Main Canal (Irrigation Canal OW-1) (Facing Northwest)

06082.06 Lammers Road Interchange WD (1/1/09)

# Appendix B U.S. Fish and Wildlife Service Species List

Sacramento Fish & Wildlife Office Species List

Page 1 of 1



**United States Department of the Interior  
FISH AND WILDLIFE SERVICE**

Sacramento Fish and Wildlife Office  
2800 Cottage Way, Room W-2605  
Sacramento, California 95825



August 3, 2010

Document Number: 100803033622

Sarah Paulson  
Caltrans  
2015 East Shields Avenue  
Fresno, CA 93726

Subject: Species List for Interstate 205/Lammers Road Interchange Project

Dear: Ms. Paulson

We are sending this official species list in response to your August 3, 2010 request for information about endangered and threatened species. The list covers the California counties and/or U.S. Geological Survey 7½ minute quad or quads you requested.

Our database was developed primarily to assist Federal agencies that are consulting with us. Therefore, our lists include all of the sensitive species that have been found in a certain area *and also ones that may be affected by projects in the area*. For example, a fish may be on the list for a quad if it lives somewhere downstream from that quad. Birds are included even if they only migrate through an area. In other words, we include all of the species we want people to consider when they do something that affects the environment.

Please read Important Information About Your Species List (below). It explains how we made the list and describes your responsibilities under the Endangered Species Act.

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be November 01, 2010.

Please contact us if your project may affect endangered or threatened species or if you have any questions about the attached list or your responsibilities under the Endangered Species Act. A list of Endangered Species Program contacts can be found at [www.fws.gov/sacramento/es/branches.htm](http://www.fws.gov/sacramento/es/branches.htm).

**Endangered Species Division**



[http://www.fws.gov/sacramento/es/spp\\_lists/auto\\_letter.cfm](http://www.fws.gov/sacramento/es/spp_lists/auto_letter.cfm)

8/3/2010

**U.S. Fish & Wildlife Service**  
**Sacramento Fish & Wildlife Office**  
**Federal Endangered and Threatened Species that Occur in**  
**or may be Affected by Projects in the Counties and/or**  
**U.S.G.S. 7 1/2 Minute Quads you requested**

Document Number: 100803033622

Database Last Updated: April 29, 2010

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Quad Lists

Listed Species

Invertebrates

- Branchinecta lynchi*  
vernal pool fairy shrimp (T)
- Desmocerus californicus dimorphus*  
valley elderberry longhorn beetle (T)
- Lepidurus packardii*  
vernal pool tadpole shrimp (E)

Fish

- Acipenser medirostris*  
green sturgeon (T) (NMFS)
- Hypomesus transpacificus*  
Critical habitat, delta smelt (X)  
delta smelt (T)
- Oncorhynchus mykiss*  
Central Valley steelhead (T) (NMFS)  
Critical habitat, Central Valley steelhead (X) (NMFS)
- Oncorhynchus tshawytscha*  
Central Valley spring-run chinook salmon (T) (NMFS)  
winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

- Ambystoma californiense*  
California tiger salamander, central population (T)
- Rana draytonii*  
California red-legged frog (T)  
Critical habitat, California red-legged frog (X)

Reptiles

- Thamnophis gigas*  
giant garter snake (T)

Mammals

- Sylvilagus bachmani riparius*  
riparian brush rabbit (E)
- Vulpes macrotis mutica*  
San Joaquin kit fox (E)

Sacramento Fish &amp; Wildlife Office Species List

Page 2 of 4

**Plants**

*Amsinckia grandiflora*  
large-flowered fiddleneck (E)

**Proposed Species****Amphibians**

*Rana draytonii*  
Critical habitat, California red-legged frog (PX)

**Quads Containing Listed, Proposed or Candidate Species:**

TRACY (444B)  
UNION ISLAND (462C)

**County Lists**

No county species lists requested.

**Key:**

- (E) *Endangered* - Listed as being in danger of extinction.
- (T) *Threatened* - Listed as likely to become endangered within the foreseeable future.
- (P) *Proposed* - Officially proposed in the Federal Register for listing as endangered or threatened.
- (NMFS) Species under the Jurisdiction of the [National Oceanic & Atmospheric Administration Fisheries Service](#). Consult with them directly about these species.
- Critical Habitat* - Area essential to the conservation of a species.
- (PX) *Proposed Critical Habitat* - The species is already listed. Critical habitat is being proposed for it.
- (C) *Candidate* - Candidate to become a proposed species.
- (V) *Vacated* by a court order. Not currently in effect. Being reviewed by the Service.
- (X) *Critical Habitat* designated for this species

**Important Information About Your Species List****How We Make Species Lists**

We store information about endangered and threatened species lists by U.S. Geological Survey 7½ minute quads. The United States is divided into these quads, which are about the size of San Francisco.

The animals on your species list are ones that occur within, **or may be affected by** projects within, the quads covered by the list.

- Fish and other aquatic species appear on your list if they are in the same watershed as your quad or if water use in your quad might affect them.
- Amphibians will be on the list for a quad or county if pesticides applied in that area may be carried to their habitat by air currents.
- Birds are shown regardless of whether they are resident or migratory. Relevant birds on the county list should be considered regardless of whether they appear on a quad list.

**Plants**

Any plants on your list are ones that have actually been observed in the area covered by the list. Plants may exist in an area without ever having been detected there. You can find out what's in the surrounding quads through the California Native Plant Society's online

[http://www.fws.gov/sacramento/es/spp\\_lists/auto\\_list.cfm](http://www.fws.gov/sacramento/es/spp_lists/auto_list.cfm)

8/3/2010

[Inventory of Rare and Endangered Plants.](#)**Surveying**

Some of the species on your list may not be affected by your project. A trained biologist and/or botanist, familiar with the habitat requirements of the species on your list, should determine whether they or habitats suitable for them may be affected by your project. We recommend that your surveys include any proposed and candidate species on your list. See our [Protocol](#) and [Recovery Permits](#) pages.

For plant surveys, we recommend using the [Guidelines for Conducting and Reporting Botanical Inventories](#). The results of your surveys should be published in any environmental documents prepared for your project.

**Your Responsibilities Under the Endangered Species Act**

All animals identified as listed above are fully protected under the Endangered Species Act of 1973, as amended. Section 9 of the Act and its implementing regulations prohibit the take of a federally listed wildlife species. Take is defined by the Act as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect" any such animal.

Take may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or shelter (50 CFR §17.3).

Take incidental to an otherwise lawful activity may be authorized by one of two procedures:

- If a Federal agency is involved with the permitting, funding, or carrying out of a project that may result in take, then that agency must engage in a formal [consultation](#) with the Service. During formal consultation, the Federal agency, the applicant and the Service work together to avoid or minimize the impact on listed species and their habitat. Such consultation would result in a biological opinion by the Service addressing the anticipated effect of the project on listed and proposed species. The opinion may authorize a limited level of incidental take.
- If no Federal agency is involved with the project, and federally listed species may be taken as part of the project, then you, the applicant, should apply for an incidental take permit. The Service may issue such a permit if you submit a satisfactory conservation plan for the species that would be affected by your project.

Should your survey determine that federally listed or proposed species occur in the area and are likely to be affected by the project, we recommend that you work with this office and the California Department of Fish and Game to develop a plan that minimizes the project's direct and indirect impacts to listed species and compensates for project-related loss of habitat. You should include the plan in any environmental documents you file.

**Critical Habitat**

When a species is listed as endangered or threatened, areas of habitat considered essential to its conservation may be designated as critical habitat. These areas may require special management considerations or protection. They provide needed space for growth and normal behavior; food, water, air, light, other nutritional or physiological requirements; cover or shelter; and sites for breeding, reproduction, rearing of offspring, germination or seed dispersal.

Although critical habitat may be designated on private or State lands, activities on these lands are not restricted unless there is Federal involvement in the activities or direct harm to listed wildlife.

If any species has proposed or designated critical habitat within a quad, there will be a

separate line for this on the species list. Boundary descriptions of the critical habitat may be found in the Federal Register. The information is also reprinted in the Code of Federal Regulations (50 CFR 17.95). See our [Map Room](#) page.

#### Candidate Species

We recommend that you address impacts to candidate species. We put plants and animals on our candidate list when we have enough scientific information to eventually propose them for listing as threatened or endangered. By considering these species early in your planning process you may be able to avoid the problems that could develop if one of these candidates was listed before the end of your project.

#### Species of Concern

The Sacramento Fish & Wildlife Office no longer maintains a list of species of concern. However, various other agencies and organizations maintain lists of at-risk species. These lists provide essential information for land management planning and conservation efforts. [More info](#)

#### Wetlands

If your project will impact wetlands, riparian habitat, or other jurisdictional waters as defined by section 404 of the Clean Water Act and/or section 10 of the Rivers and Harbors Act, you will need to obtain a permit from the U.S. Army Corps of Engineers. Impacts to wetland habitats require site specific mitigation and monitoring. For questions regarding wetlands, please contact Mark Littlefield of this office at (916) 414-6580.

#### Updates

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be November 01, 2010.



# Appendix C California Natural Diversity Database Species List

California Department of Fish and Game

Natural Diversity Database

Selected Elements by Scientific Name - Portrait

Search of the Tracy, Union Island, Cedar Mountain, Solyo, Clifton Court Forebay, Lathrop, Lone Tree Creek, Midway, and Vernalis Quads

Scientific Name/Common Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
1 <i>Actinemys marmorata</i> western pond turtle	ARAA02030			G3G4	S3	SC
2 <i>Agelaius tricolor</i> tricolored blackbird	ABPBXB0020			G2G3	S2	SC
3 <i>Alkali Meadow</i>	CTT45310CA			G3	S2.1	
4 <i>Allium sharsmithiae</i> Sharsmith's onion	PMLIL02310			G2	S2.3	1B.3
5 <i>Ambystoma californiense</i> California tiger salamander	AAAAA01180	Threatened	unknown code...	G2G3	S2S3	SC
6 <i>Amsinckia grandiflora</i> large-flowered fiddleneck	PDBOR01050	Endangered	Endangered	G1	S1.1	1B.1
7 <i>Anniella pulchra pulchra</i> silvery legless lizard	ARACC01012			G3G4T3T4 Q	S3	SC
8 <i>Anthicus sacramento</i> Sacramento anthicid beetle	IICOL49010			G1	S1	
9 <i>Antrozous pallidus</i> pallid bat	AMACC10010			G5	S3	SC
10 <i>Aquila chrysaetos</i> golden eagle	ABNKC22010			G5	S3	
11 <i>Astragalus tener</i> var. <i>tener</i> alkali milk-vetch	PDFAB0F8R1			G1T1	S1.1	1B.2
12 <i>Athene cunicularia</i> burrowing owl	ABNSB10010			G4	S2	SC
13 <i>Atriplex joaquiniana</i> San Joaquin spearscale	PDCHE041F3			G2	S2	1B.2
14 <i>Blepharizonia plumosa</i> big tarplant	PDAST1C011			G1	S1.1	1B.1
15 <i>Branchinecta lynchi</i> vernal pool fairy shrimp	ICBRA03030	Threatened		G3	S2S3	
16 <i>Branchinecta mesovallensis</i> midvalley fairy shrimp	ICBRA03150			G2	S2	
17 <i>Buteo regalis</i> ferruginous hawk	ABNKC19120			G4	S3S4	
18 <i>Buteo swainsoni</i> Swainson's hawk	ABNKC19070		Threatened	G5	S2	
19 <i>California macrophylla</i> round-leaved filaree	PDGER01070			G3	S3.1	1B.1
20 <i>Campanula exigua</i> chaparral harebell	PDCAM020A0			G2	S2.2	1B.2
21 <i>Caulanthus coulteri</i> var. <i>lemmonii</i> Lemmon's jewelflower	PDBRA0M0E0			G4T2	S2.2	1B.2
22 <i>Circus cyaneus</i> northern harrier	ABNKC11010			G5	S3	SC
23 <i>Cirsium crassicaule</i> slough thistle	PDAST2E0U0			G2	S2.2	1B.1

Commercial Version -- Dated November 01, 2009 -- Biogeographic Data Branch  
Report Printed on Tuesday, January 19, 2010Page 1  
Information Expires 05/01/2010

California Department of Fish and Game  
 Natural Diversity Database  
 Selected Elements by Scientific Name - Portrait  
 Search of the Tracy, Union Island, Cedar Mountain, Solyo, Clifton Court Forebay, Lathrop, Lone Tree Creek, Midway, and Vernalis Quads

Scientific Name/Common Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
24 <i>Cirsium fontinale</i> var. <i>campylon</i> Mt. Hamilton fountain thistle	PDAST2E163			G2T2	S2.2	1B.2
25 <i>Clarkia concinna</i> ssp. <i>automixa</i> Santa Clara red ribbons	PDONA050A1			G5?T3	S3.3	4.3
26 <i>Coccyzus americanus occidentalis</i> western yellow-billed cuckoo	ABNRB02022	Candidate	Endangered	G5T3Q	S1	
27 <i>Coreopsis hamiltonii</i> Mt. Hamilton coreopsis	PDAST2L0C0			G2	S2.2	1B.2
28 <i>Corynorhinus townsendii</i> Townsend's big-eared bat	AMACC08010			G4	S2S3	SC
29 <i>Delphinium californicum</i> ssp. <i>interius</i> Hospital Canyon larkspur	PDRAN0B0A2			G3T2?	S2?	1B.2
30 <i>Delphinium recurvatum</i> recurved larkspur	PDRAN0B1J0			G2	S2.2	1B.2
31 <i>Desmocerus californicus dimorphus</i> valley elderberry longhorn beetle	IICOL48011	Threatened		G3T2	S2	
32 <i>Elanus leucurus</i> white-tailed kite	ABNKC06010			G5	S3	
33 <i>Eremophila alpestris actia</i> California horned lark	ABPAT02011			G5T3Q	S3	
34 <i>Eriastrum tracyi</i> Tracy's eriastrum	PDPLM030C0		Rare	G1Q	S1.1	1B.2
35 <i>Eryngium racemosum</i> Delta button-celery	PDAPI0Z0S0		Endangered	G2Q	S2.1	1B.1
36 <i>Eschscholzia rhombipetala</i> diamond-petaled California poppy	PDPAP0A0D0			G1	S1.1	1B.1
37 <i>Eumops perotis californicus</i> western mastiff bat	AMACD02011			G5T4	S3?	SC
38 <i>Falco columbarius</i> merlin	ABNKD06030			G5	S3	
39 <i>Fritillaria falcata</i> talus fritillary	PMLILOV070			G2	S2.2	1B.2
40 <i>Great Valley Cottonwood Riparian Forest</i>	CTT61410CA			G2	S2.1	
41 <i>Great Valley Valley Oak Riparian Forest</i>	CTT61430CA			G1	S1.1	
42 <i>Helianthella castanea</i> Diablo helianthella	PDAST4M020			G3	S3.2	1B.2
43 <i>Hesperolinon</i> sp. nov. " <i>serpentinum</i> " Napa western flax	PDLIN010D0			G2	S2.1	1B.1
44 <i>Hibiscus lasiocarpus</i> woolly rose-mallow	PDMAL0H0Q0			G4	S2.2	2.2
45 <i>Hygrotus curvipes</i> curved-foot hygrotus diving beetle	IICOL38030			G1	S1	
46 <i>Lanius ludovicianus</i> loggerhead shrike	ABPBR01030			G4	S4	SC
47 <i>Lilaeopsis masonii</i> Mason's lilaeopsis	PDAPI19030		Rare	G3	S3.1	1B.1

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Scientific Name/Common Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
48 <i>Limosella subulata</i> Delta mudwort	PDSCR10050			G4?Q	S2.1	2.1
49 <i>Madia radiata</i> showy golden madia	PDAST650E0			G2	S2.1	1B.1
50 <i>Malacothamnus hallii</i> Hall's bush-mallow	PDMAL0Q0F0			G1Q	S1.2	1B.2
51 <i>Masticophis flagellum ruddocki</i> San Joaquin whipsnake	ARADB21021			G5T2T3	S2?	SC
52 <i>Masticophis lateralis euryxanthus</i> Alameda whipsnake	ARADB21031	Threatened	Threatened	G4T2	S2	
53 <i>Neotoma fuscipes riparia</i> riparian (=San Joaquin Valley) woodrat	AMAFF08081	Endangered		G5T1Q	S1	SC
54 <i>Northern Claypan Vernal Pool</i>	CTT44120CA			G1	S1.1	
55 <i>Perognathus inornatus inornatus</i> San Joaquin pocket mouse	AMAFD01061			G4T2T3	S2S3	
56 <i>Phacelia phacelloides</i> Mt. Diablo phacelia	PDHYD0C3Q0			G1	S1.2	1B.2
57 <i>Phrynosoma blainvillii</i> coast horned lizard	ARACF12100			G4G5	S3S4	SC
58 <i>Rana boylei</i> foothill yellow-legged frog	AAABH01050			G3	S2S3	SC
59 <i>Rana draytonii</i> California red-legged frog	AAABH01022	Threatened		G4T2T3	S2S3	SC
60 <i>Senecio aphanactis</i> chaparral ragwort	PDAST8H060			G3?	S1.2	2.2
61 <i>Spea hammondi</i> western spadefoot	AAABF02020			G3	S3	SC
62 <i>Sylvilagus bachmani riparius</i> riparian brush rabbit	AMAEB01021	Endangered	Endangered	G5T1	S1	
63 <i>Symphyotrichum lentum</i> Suisun Marsh aster	PDASTE8470			G2	S2	1B.2
64 <i>Taxidea taxus</i> American badger	AMAJF04010			G5	S4	SC
65 <i>Trichocoronis wrightii</i> var. <i>wrightii</i> Wright's trichocoronis	PDAST9F031			G4T3	S1.1	2.1
66 <i>Tropidocarpum capparideum</i> caper-fruited tropidocarpum	PDBRA2R010			G1	S1.1	1B.1
67 <i>Valley Sink Scrub</i>	CTT36210CA			G1	S1.1	
68 <i>Vulpes macrotis mutica</i> San Joaquin kit fox	AMAJA03041	Endangered	Threatened	G4T2T3	S2S3	
69 <i>Xanthocephalus xanthocephalus</i> yellow-headed blackbird	ABPBXB3010			G5	S3S4	SC



# Appendix D Plant Species Observed in the BSA

## Appendix D. Plant Species Observed in the BSA

Scientific Name	Common Name
<i>Avena fatua</i>	wild oat
<i>Brassica nigra</i>	black mustard
<i>Bromus carinatus</i>	California brome
<i>Bromus diandrus</i>	ripgut brome
<i>Bromus hordeaceus</i>	soft chess
<i>Bromus madritensis</i> ssp. <i>rubens</i>	red brome
<i>Bromus tectorum</i>	cheatgrass
<i>Capsella bursa-pastoris</i>	shepherd's purse
<i>Centaurea solstitialis</i>	yellow star-thistle
<i>Convolvulus arvensis</i>	bindweed
<i>Cynodon dactylon</i>	Bermudagrass
<i>Cyperus eragrostis</i>	tall flatsedge
<i>Echinochloa crus-galli</i>	barnyard grass
<i>Erodium cicutarium</i>	redstem filaree
<i>Eucalyptus</i> sp.	eucalyptus
<i>Foeniculum vulgare</i>	fennel
<i>Hedera helix</i>	English ivy
<i>Hordeum murinum</i> ssp. <i>leporinum</i>	hare barley
<i>Juglans</i> sp.	walnut
<i>Lactuca serriola</i>	prickly lettuce
<i>Lagerstroemia indica</i>	crapemyrtle
<i>Lepidium latifolium</i>	perennial peppergrass
<i>Leptochloa fascicularis</i>	sprangletop
<i>Lolium multiflorum</i>	Italian ryegrass
<i>Lotus corniculatus</i>	birdsfoot trefoil
<i>Malus</i> sp.	apple
<i>Malva neglecta</i>	common mallow
<i>Malva nicaeensis</i>	bull mallow
<i>Medicago polymorpha</i>	bur clover
<i>Medicago sativa</i>	alfalfa
<i>Nerium oleander</i>	oleander
<i>Nicotiana glauca</i>	tree tobacco
<i>Paspalum dilatatum</i>	dallisgrass
<i>Phalaris aquatica</i>	Harding grass
<i>Phoenix canariensis</i>	Canary Island date palm
<i>Picris echioides</i>	bristly oxtongue
<i>Pinus pinea</i>	stone pine
<i>Plantago lanceolata</i>	English plantain
<i>Polygonum arenastrum</i>	common knotweed
<i>Polypogon monspeliensis</i>	rabbitsfoot grass
<i>Raphanus sativus</i>	radish
<i>Rorippa nasturtium-aquaticum</i>	watercress
<i>Rumex crispus</i>	curly dock
<i>Salsola tragus</i>	Russian thistle
<i>Senecio vulgaris</i>	Old-man-of-spring

<b>Scientific Name</b>	<b>Common Name</b>
<i>Silybum marianum</i>	milk thistle
<i>Tamarix</i> sp.	tamarisk
<i>Trifolium fragiferum</i>	strawberry clover
<i>Trifolium repens</i>	wildwhite clover
<i>Typha angustifolia</i>	narrowleaf cattail

# Appendix E Wildlife Species Observed in the BSA

## Appendix E. Wildlife Species Observed in the BSA

Scientific Name	Common Name
<b>Reptiles</b>	
<i>Sceloporus occidentalis</i>	Western fence lizard
<i>Pituophis catenifer</i>	Gopher snake
<b>Birds</b>	
<i>Agelaius phoeniceus</i>	Red-winged blackbird
<i>Anas platyrhynchos</i>	Mallard
<i>Aphelocoma californica</i>	Western scrub-jay
<i>Ardea alba</i>	Great egret
<i>Ardea herodias</i>	Great blue heron
<i>Athene cunicularia</i>	Western burrowing owl
<i>Buteo jamaicensis</i>	Red-tailed hawk
<i>Buteo swainsoni</i>	Swainson's hawk
<i>Ceryle alcyon</i>	Belted kingfisher
<i>Charadrius vociferus</i>	Killdeer
<i>Columbia livia</i>	Rock dove
<i>Corvus brachyrhynchos</i>	American crow
<i>Euphagus cyanocephalus</i>	Brewer's blackbird
<i>Falco sparverius</i>	American kestrel
<i>Junco hyemalis</i>	Dark-eyed junco
<i>Lanius ludovicianus</i>	Loggerhead shrike
<i>Megascops kennicottii</i>	Western screech-owl
<i>Petrochelidon pyrrhonota</i>	Cliff swallow
<i>Sayornis nigricans</i>	Black phoebe
<i>Sturnella neglecta</i>	Meadow lark
<i>Sturnus vulgaris</i>	European starling
<i>Zenaida macroura</i>	Mourning dove
<b>Mammals</b>	
<i>Spermophilus beecheyi</i>	California ground squirrel



## Appendix F Representative Photographs



06/08/06 Lammers Road Interchange VID (11/09)

Photo 1 - Irrigation Ditches (Facing West)



06062.06 Lammers Road Interchange V02 (11/09)

Photo 2 - Irrigation Ditch (Facing Northwest)



Photo 3 - Emergent Wetland (Facing Northwest)



Photo 4 - Irrigation Ditch (Facing Northwest)

06052.06 Lammers Road Interchange VIC (11.09)



Photo 5 - Emergent Wetland (Facing East)



Photo 6 - Irrigation Canal (Facing Northeast)

06082.06 Lammers Road Interchange W.D. (11.09)



Photo 7 - Irrigation Ditch (Facing West)



Photo 8 - Irrigation Canal (Facing East)

060822\_06 Lammers Road Interchange WCD (11/09)



Photo 9 - Lower Main Canal (Facing Northwest)

06082\_06 Lammers Road Interchange VID (11/09)