

TIER II
NATURAL ENVIRONMENT STUDY

for

**STATE ROUTE 11 AND THE OTAY MESA
EAST PORT OF ENTRY**

OTAY MESA, SAN DIEGO, CALIFORNIA
DISTRICT 11-SD -ROUTE 11
PM 0.0/2.8 EA056310
DISTRICT 11-SD -ROUTE 905
PM R8.4/10.1



November 2010



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State Route 11 and Otay Mesa East Port of Entry – Tier II Natural Environment Study

This Natural Environment Study (NES) discusses existing vegetation communities, plant and animal species, aquatic resources, impacts of the proposed project, proposed mitigation, and monitoring. Proposed State Route (SR)-11 would extend generally east and south for approximately 2.1 miles from the east side of the approved SR-905/SR-125 interchange, terminating at the proposed Otay Mesa East Port of Entry/Commercial Vehicle Enforcement Facility (POE/CVEF) sites. The combined POE/CVEF would extend from the eastern/southern terminus of proposed SR-11 to the U.S.-Mexico international border. The project also includes connectors to link SR-11 to SR-905 (under construction), as well as modifications to the approved SR-905 design to accommodate these connectors.

11-SD-11 PM 0.0/2.8

EA 056310

11-SD-905 PM R8.4/10.1

November 2010

STATE OF CALIFORNIA
Department of Transportation

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Summary

The California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA) are proposing to construct the State Route (SR-) 11 and Otay Mesa East Port of Entry (POE; i.e., the proposed project). The components of the proposed project include construction of the following facilities in San Diego County: the new Otay Mesa East POE; a new highway, SR-11; and a Commercial Vehicle Enforcement Facility (CVEF).

Project Purpose and Need

This Tier II Natural Environment Study (NES) evaluates three alternative designs for the implementation of the Western Alternative that was selected by the FHWA in 2008. These design alternatives are referred to as the Two Interchange, One Interchange, and No Interchange alternatives. Several design/operational variations for each alternative are under consideration, as well as a No Build Alternative. All of the alternatives and design variations are analyzed in this NES.

The purpose of the project is: 1) to increase inspection processing capacities for commercial and personal vehicles and pedestrians in the San Diego/Tijuana region; 2) to reduce northbound vehicle and pedestrian queues and wait times to cross the border at other POEs in the region; 3) to accommodate projected increases in international trade and personal cross-border travel in the region in a safe and secure manner; 4) to contribute to reductions in congestion at existing POEs and along regional transportation infrastructure; and 5) to accommodate commercial goods movement and cross-border travel to and from the Otay Mesa East POE.

The need for SR-11 and the CVEF are linked to the need for the new Otay Mesa East POE. There is no need for SR-11 or the CVEF without the POE. With implementation of the POE, however, SR-11 becomes a critical facility to connect the POE to the regional highway system. Similarly, with construction of the proposed POE, access to an existing or new CVEF becomes necessary for the California Highway Patrol to fulfill its responsibilities to conduct safety inspections on incoming trucks. The new POE is needed because the capacities of the existing POEs in the region are currently being exceeded.

Impacts to Natural Communities

The Two Interchange Alternative would directly impact 183.62 acres of natural communities of special concern, the majority of which (183.2 acres) includes impacts to grassland communities. The impact to non-native grassland would be 19.6 acres greater under the Siempre Viva Road Full Interchange Variation for this alternative. The One Interchange Alternative would directly impact 188.22 acres of natural communities of special concern, the majority of which (187.8 acres) includes impacts to grassland communities. Finally, the No Interchange Alternative would directly impact 177.52 acres of natural communities of special concern, the majority of which (177.1 acres) includes impacts to grassland communities. Each of the alternatives would permanently impact 0.42 acre of mule fat scrub-disturbed (another community of special concern).

The loss of grassland communities from development of the proposed project would contribute to cumulative losses of these communities in the region. The proposed project would not contribute to cumulative losses of mule fat scrub in the region because the California

Department of Fish and Game (CDFG) permit that must be acquired before impacts to this community can occur would require that there be no net loss of jurisdictional areas.

Under the No Build Alternative, Caltrans and the General Services Administration (GSA) would not develop the proposed facilities, and the impacts to natural communities described herein would not occur.

The proposed project area is planned for development under the East Otay Mesa Specific Plan (EOMSP). In addition, local transportation facilities would likely be constructed by the County to serve future development. Such cumulative development by others would be likely to ultimately impact many of the natural communities in the project area, and the developers of these projects would be required to provide appropriate mitigation.

Impacts to Special Status Species

While the federally listed endangered San Diego fairy shrimp (*Branchinecta sandiegonensis*) would not be impacted by the proposed project, each of the three build alternatives would permanently impact 111.5 acres of San Diego fairy shrimp critical habitat.

Each of the three build alternatives would also impact three locations where the federally listed endangered Quino checkerspot butterfly (*Euphydryas editha quino*; Quino) was observed, as well as 4.2 acres of Quino critical habitat.

Other special status, but non-listed plant and animal species, would also be impacted similarly by each of the three build alternatives. In most cases, the mitigation proposed would offset the potential impacts to special status species. One exception to this is impacts to the burrowing owl (*Athene cunicularia*). The Two Interchange and No Interchange alternatives would directly impact 12 locations (a multi-year total) of burrowing owl. The One Interchange Alternative would directly impact 14 locations (a multi-year total) of burrowing owl. Because these owls are part of one of the last breeding populations of the species left in San Diego County, and the impacts would be considered cumulative, additional mitigation would be required.

Under the No Build Alternative, Caltrans and GSA would not develop the proposed facilities, and the impacts to special status species described herein would not occur.

The proposed project area is planned for development under the EOMSP. In addition, local transportation facilities would likely be constructed by the County to serve future development. Such cumulative development by others would be likely to ultimately impact many of the special status species in the project area, and the developers of these projects would be required to provide appropriate mitigation.

Permits Required

Each of the three build alternatives would impact similar areas of U.S. Army Corps of Engineers (USACE) and CDFG jurisdiction. While the impacts to USACE jurisdiction would be less than 0.5 acre and are generally processed with a Nationwide Permit, the impacts would exceed 300 linear feet (ft), which may require an Individual Permit under Section 404 of the Clean Water Act (CWA). Additionally, CWA Section 401 Water Quality Certification must be issued prior to any CWA permit. A Lake and Streambed Alteration Agreement under California Fish and Game Code 1602 would be required for impacts to CDFG jurisdiction.

Impacts to federally listed species or critical habitat would require Section 7 consultation with the U.S. Fish and Wildlife Service (USFWS) under the federal Endangered Species Act (ESA). For any impacts to state listed species, a permit for incidental take may be required from the CDFG under Sections 2081(b) and (c) of the California ESA.

Presence of Invasive or Exotic Species

Many of the exotic plant species in the Biological Study Area (BSA) are present because they invaded following previous site disturbances (possibly grazing, farming, and/or fire). Non-native grassland is the dominant vegetation community in the BSA. Therefore, the majority of the plant species present in the BSA are the invasive, exotic species that comprise this community. Some of these species include red brome (*Bromus madritensis* ssp. *rubens*), rippgut grass (*Bromus diandrus*), Italian ryegrass (*Lolium multiflorum*), and mustard (*Brassica* spp.). Additionally, Russian thistle (*Salsola tragus*) is common in disturbed habitat, which is the second most prevalent vegetation community in the BSA. In wet areas like freshwater marsh, invasive, exotic species include such plants as curly dock (*Rumex crispus*). The proposed project would remove many of these species during grading operations, and it would not contribute invasive or exotic species to the project area because it would be consistent with Executive Order (EO) 13112 that seeks to prevent the introduction of alien plant and animal species that cause economic or environmental harm.

Proposed Avoidance and Mitigation

Mitigation for the loss of natural communities of special concern is proposed to occur on the Lonestar parcels acquired by Caltrans on Otay Mesa. The Lonestar parcels support non-native grassland, Diegan coastal sage scrub, eucalyptus woodland, a stock pond, vernal pools, and unvegetated basins. The majority of the acreage of the Lonestar parcels is within the City of San Diego Multi-Habitat Planning Area (MHPA); some of it is also designated as Multiple Species Conservation Program (MSCP) Biological Resource Core Area (BRCA).

Impacts to San Diego fairy shrimp critical habitat would be offset by the preservation, restoration, and enhancement of vernal pools on the Lonestar parcels, as well as through the preservation of San Diego fairy shrimp critical habitat on the parcels. The final mitigation for San Diego fairy shrimp critical habitat impacts would be negotiated during the Section 7 consultation with the USFWS. Caltrans anticipates the completion of a Biological Assessment in March 2011 and issuance of a Biological Opinion by November 2011. The Lonestar parcels support San Diego fairy shrimp and Riverside fairy shrimp (*Streptocephalus woottoni*).

Proposed mitigation for the loss of Quino habitat is through preservation and enhancement of historically occupied Quino habitat on the Lonestar parcels. Proposed mitigation for impacts to Quino critical habitat would be through preservation of Quino critical habitat on the Lonestar parcels. The final mitigation for Quino critical habitat impacts would be negotiated during the Section 7 consultation with the USFWS. Caltrans anticipates the completion of a Biological Assessment in March 2011 and issuance of a Biological Opinion by November 2011.

Mitigation for impacts to other special status plant and animal species would be via preservation, creation, restoration, and enhancement of habitat and/or the translocation/planting of affected plant species. Proposed mitigation for impacts to the burrowing owl is through the preservation of non-native grassland on the Lonestar parcels (or equivalent mitigation parcels). To ensure suitable burrow opportunities are present, artificial burrows would be created at a 5:1 ratio for each burrow impacted. Impacts to burrowing owls during construction would be minimized by avoiding disturbance near burrows during the breeding season.

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List of Abbreviated Terms

BCC	Birds of Conservation Concern
BRCA	Biological Resource Core Area
BRT	Bus Rapid Transit
BSA	Biological Study Area
Caltrans	California Department of Transportation
CBP	Customs and Border Protection
CDFG	California Department of Fish and Game
CNDDDB	California Natural Diversity Data Base
CNPS	California Native Plant Society
County	County of San Diego
CVEF	Commercial Vehicle Enforcement Facility
CWA	Clean Water Act
DoD	U.S. Department of Defense
EDAW	EDAW, Inc.
EIR/EIS	Environmental Impact Report/Environmental Impact Statement
EO	Executive Order
EOMSP	East Otay Mesa Specific Plan
ESA	Endangered Species Act
FEIS/FEIR	Final Environmental Impact Statement/Final Environmental Impact Report
FHWA	Federal Highway Administration
ft	foot/feet
GPS	global positioning system
GSA	General Services Administration
HELIX	HELIX Environmental Planning, Inc.
LSAA	Lake or Streambed Alteration Agreement
MBTA	Migratory Bird Treaty Act
MHPA	Multi-Habitat Planning Area
MSCP	Multiple Species Conservation Program
NCCP	Natural Community Conservation Planning
NES	Natural Environment Study
NPPA	Native Plant Protection Act
NWP	Nationwide Permit
PEIR/PEIS	Program Environmental Impact Report/Phase I Environmental Impact Statement
POE	Port of Entry
Quino	Quino checkerspot butterfly
ROD	Record of Decision
R/W	Right-of-way
RWQCB	Regional Water Quality Control Board
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act – A Legacy for Users
SANDAG	San Diego Association of Governments
SR–	State Route
URS	URS Corporation
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
WUS	Waters of the U.S.
°F	degrees Fahrenheit

Chapter 1. INTRODUCTION

The California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA) are proposing to construct the State Route (SR-) 11 and Otay Mesa East Port of Entry (POE; i.e., the proposed project). The components of the proposed project include construction of the following facilities in San Diego County (Figures 1-1, 1-2, and 1-3): the new Otay Mesa East POE; a new highway, SR-11; and a Commercial Vehicle Enforcement Facility (CVEF).

1.1 Project History

The purpose of the project is: 1) to increase inspection processing capacities for commercial and personal vehicles and pedestrians in the San Diego/Tijuana region; 2) to reduce northbound vehicle and pedestrian queues and wait times to cross the border at other POEs in the region; 3) to accommodate projected increases in international trade and personal cross-border travel in the region in a safe and secure manner; 4) to contribute to reductions in congestion at existing POEs and along regional transportation infrastructure; and 5) to accommodate commercial goods movement and cross-border travel to and from the Otay Mesa East POE.

The need for SR-11 and the CVEF is linked to the need for the new Otay Mesa East POE. There is no need for SR-11 or the CVEF without the POE. With implementation of the POE, however, SR-11 becomes a critical facility to connect the POE to the regional highway system. Similarly, with construction of the proposed POE, access to an existing or new CVEF becomes necessary for the California Highway Patrol to fulfill its responsibilities to conduct safety inspections on incoming trucks. The new POE is needed because the capacities of the existing POEs in the region are currently being exceeded.

A Final Program Environmental Impact Report/Phase I Environmental Impact Statement (PEIR/PEIS) was published in August 2008 for the SR-11 and Otay Mesa East POE. The purpose of the document was to identify the preferred location for the project and to disclose the potential environmental effects resulting from implementation of that alternative. Two alternative locations were identified in the Final PEIR/PEIS: the Western Alternative and the Central Alternative. An Eastern Alternative was also considered but was withdrawn before preparation of the Draft PEIR/PEIS because it would have had much greater impacts to biological resources than either the Western or Central alternatives. Based on the results of the analysis in the Final PEIR/PEIS, the FHWA selected the Western Alternative as the preferred location for SR-11 and the Otay Mesa East POE, as stated in its Record of Decision (ROD; FHWA 2008). The FHWA determined that the Western Alternative would require fewer acres of new right-of-way (R/W) and would affect fewer special status biological resources than the Central Alternative.

It is important to note that the approved SR-905 and SR-125 projects overlap with the proposed project. The areas currently within Caltrans or other transportation agency ownership for construction of SR-905 and SR-125, as well as additional areas that have been previously cleared for impact under the approved SR-905 project, are shown on Figure 1-4.

1.2 Project Description

This Tier II Natural Environment Study (NES) evaluates three alternative designs for the implementation of the Western Alternative that was selected by the FHWA in 2008. These

design alternatives are referred to as the Two Interchange, One Interchange, and No Interchange alternatives. Several design and operational variations for each alternative are under consideration, as well as a No Build Alternative. These alternatives and variations are analyzed in this NES.

The alternatives to be addressed in the Tier II Draft Environmental Impact Report/Environmental Impact Statement (EIR/EIS) for the proposed project were developed by a multi-disciplinary team to achieve the project purpose and need while avoiding or minimizing environmental impacts. The Two Interchange Alternative, One Interchange Alternative, and No Interchange Alternative (Figure 1-4), with several design and operational variations, as well as a No Build Alternative, are under evaluation in the EIR/EIS.

SR-11 would be constructed and operated as a toll facility under all of the build alternatives, with the San Diego Association of Governments (SANDAG) as the toll authority under State legislation (SB 1486). The proposed toll system is currently anticipated to include toll collection in both directions and the use of “smart technology” such as FasTrak, although additional toll-related options are still under evaluation. The proposed toll system would also include the use of variable congestion pricing for both commercial and passenger vehicles. This system is intended to provide a financial incentive to encourage accessing the POE during non-peak hours, thereby reducing associated congestion.

Transportation Systems Management/Transportation Demand Management (TSM/TDM) measures being evaluated for the project include: (1) possible use of ramp metering at SR-11 interchange(s); (2) implementation of intelligent transportation systems strategies such as closed-circuit television cameras, traffic loop monitoring stations and transportation management center connections; (3) provision of multi-modal facilities and services for POE uses such as bicycle, pedestrian and bus facilities (e.g., dedicated lanes and staging areas), connectivity potential for Bus Rapid Transit (BRT) service, and inclusion of space for a potential future transit center site; (4) implementation of variable congestion pricing; (5) provision of dedicated commercial and passenger traffic lanes; and (6) use of extended POE operation hours.

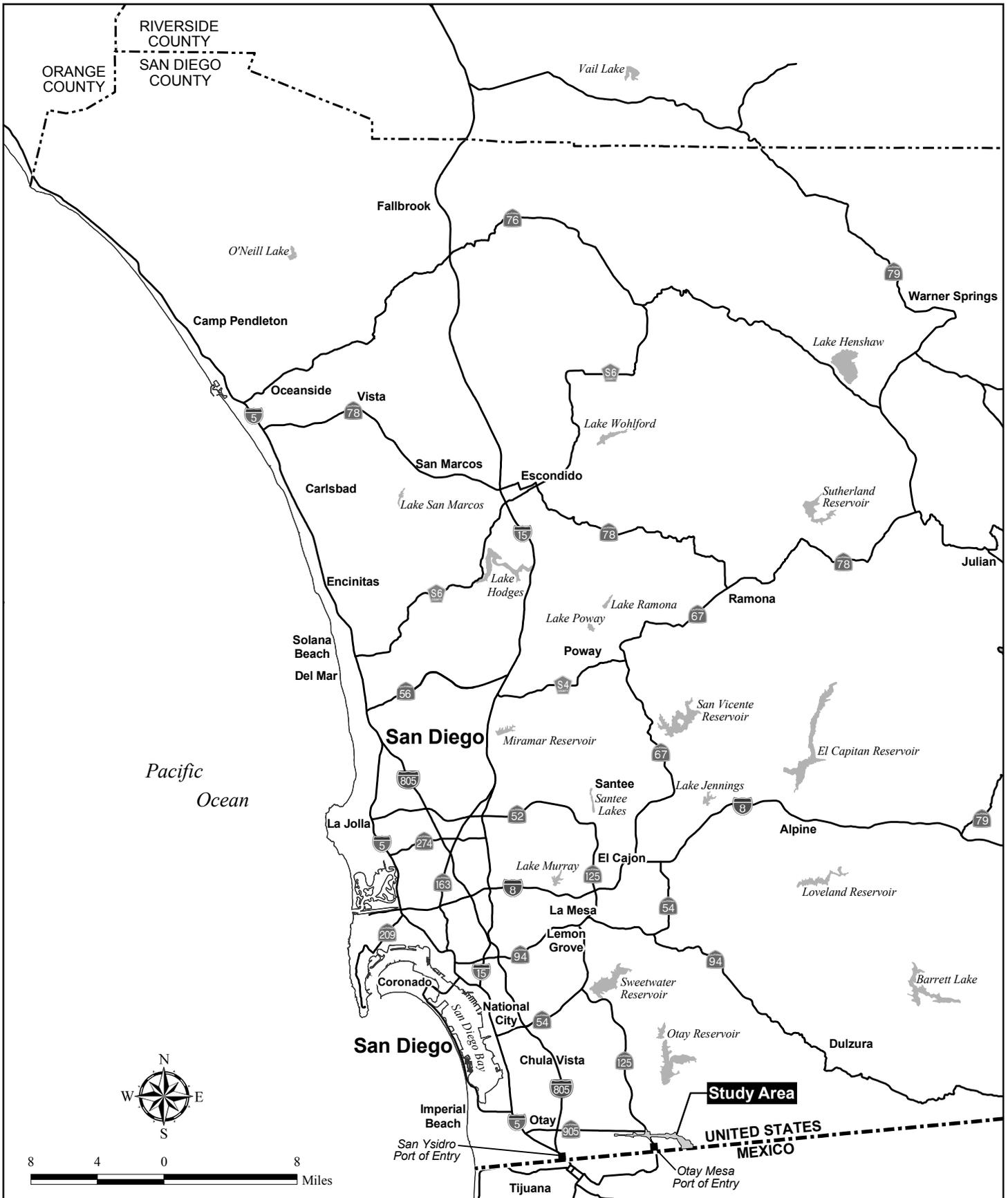
The project alternatives are described below, along with several variations of the build alternatives related to interchange/median design and operation of SR-11 as a highway rather than a toll highway. Figure 1-4 provides a comparative overview of the three project build alternatives.

Two Interchange Alternative

SR-11

Under the Two Interchange Alternative, SR-11 would be constructed as a four-lane toll highway. Traffic studies have indicated that a four-lane facility would be adequate to accommodate projected traffic through at least 2035. The proposed design would include two standard-width main lanes (12 ft wide) and shoulders (10 ft wide) in each direction, along with standard sight distances. Auxiliary lanes and connectors would also be included near the interchanges.

From west to east, the proposed SR-11 median in the vicinity of Sanyo Avenue, would narrow from an estimated 26 ft wide west of Sanyo Avenue to a width of 22 ft for a distance of approximately 1,600 ft to minimize impacts to nearby buildings, before widening over a distance of approximately 630 ft to the 62-ft median width for the remaining length of SR-11 (Figure 1-5).

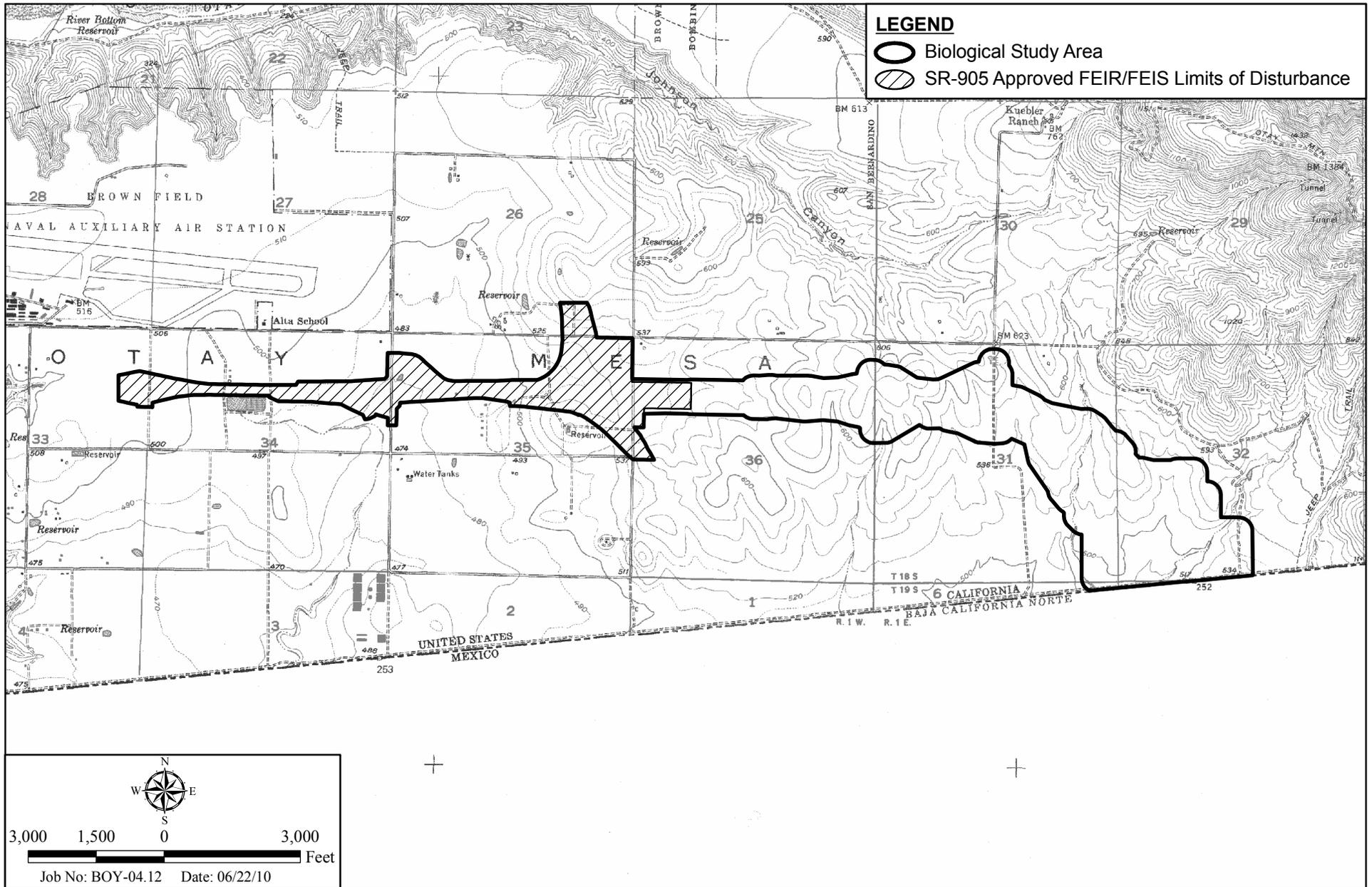


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Regional Location Map

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II NATURAL ENVIRONMENT STUDY

Figure 1-1

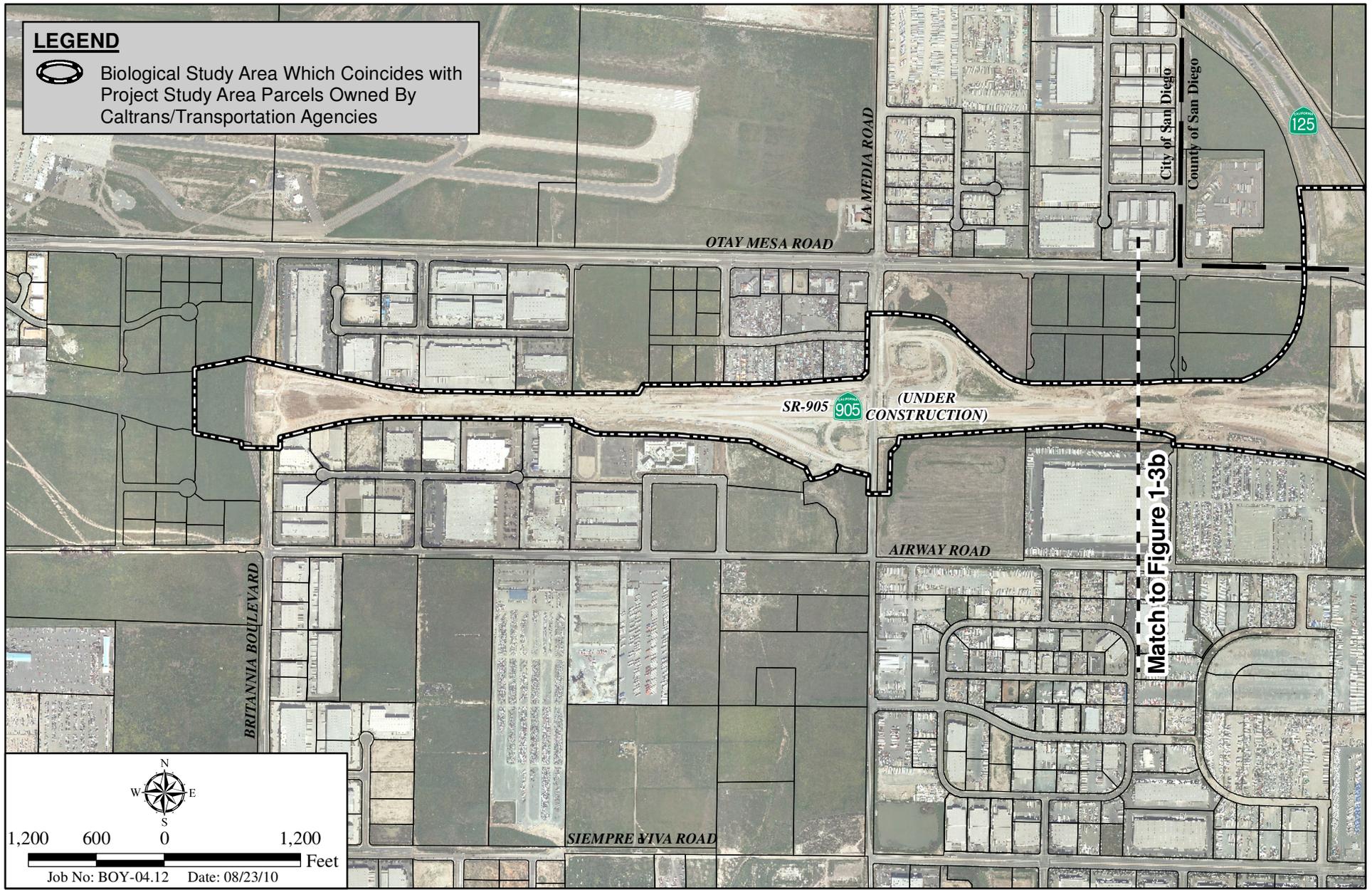


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Project Location Map

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II NATURAL ENVIRONMENT STUDY

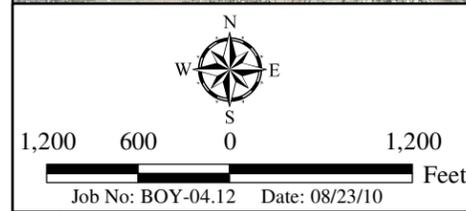
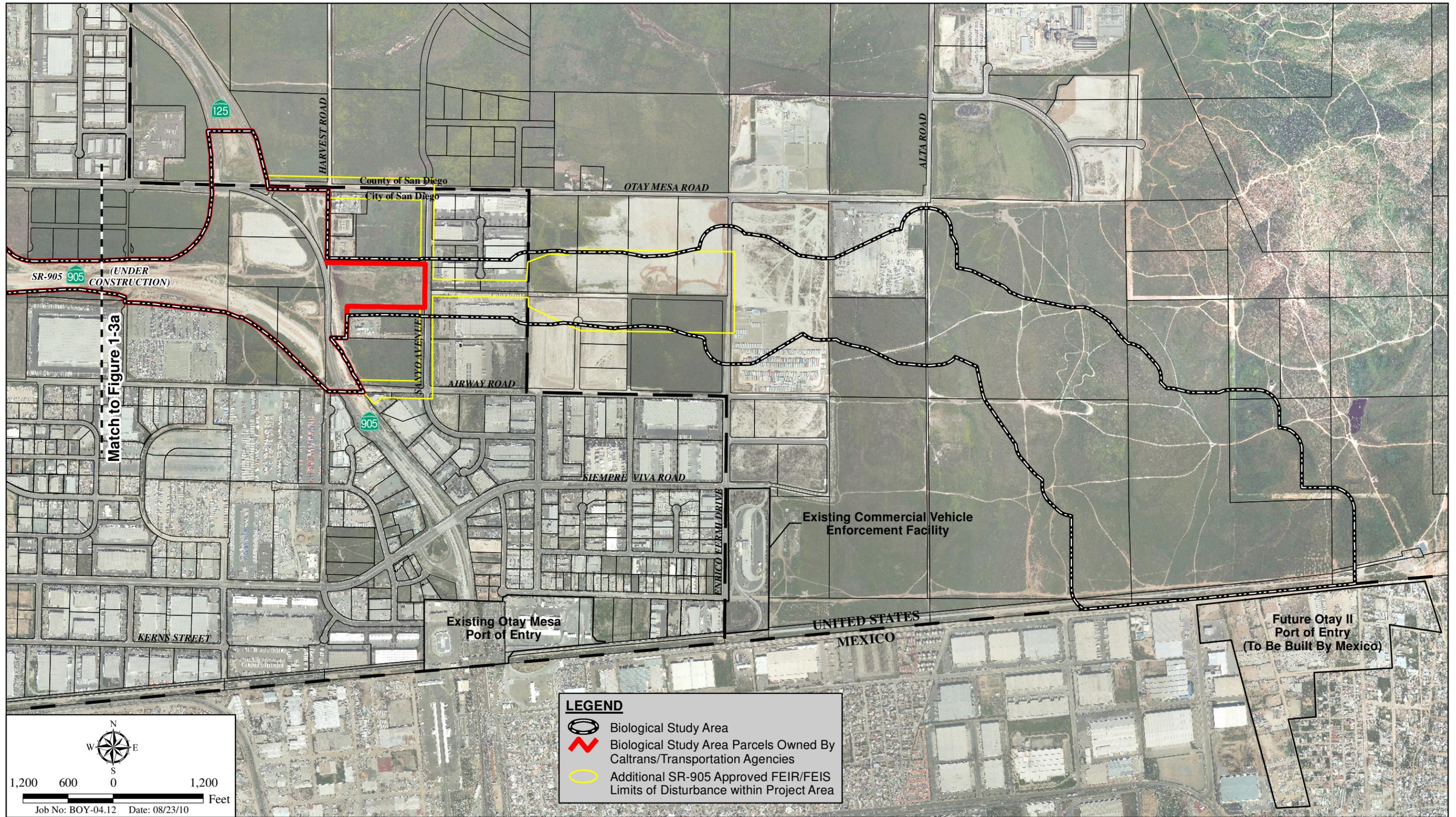
Figure 1-2



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Aerial Photograph

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II NATURAL ENVIRONMENT STUDY



LEGEND

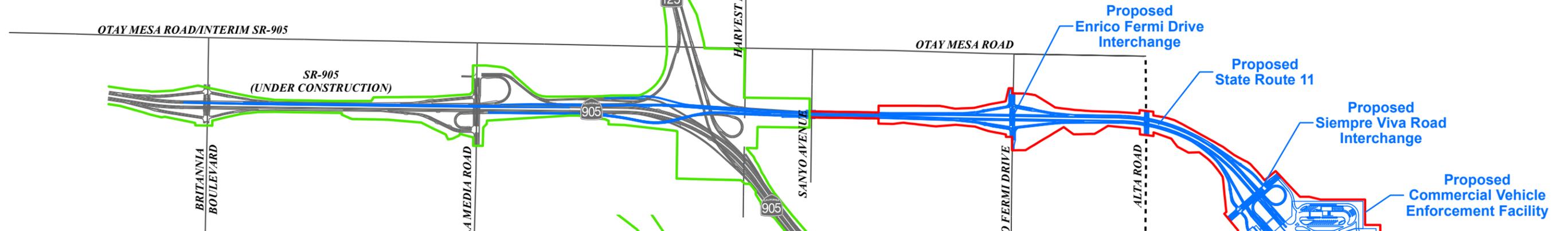
-  Biological Study Area
-  Biological Study Area Parcels Owned By Caltrans/Transportation Agencies
-  Additional SR-905 Approved FEIR/FEIS Limits of Disturbance within Project Area

Aerial Photograph

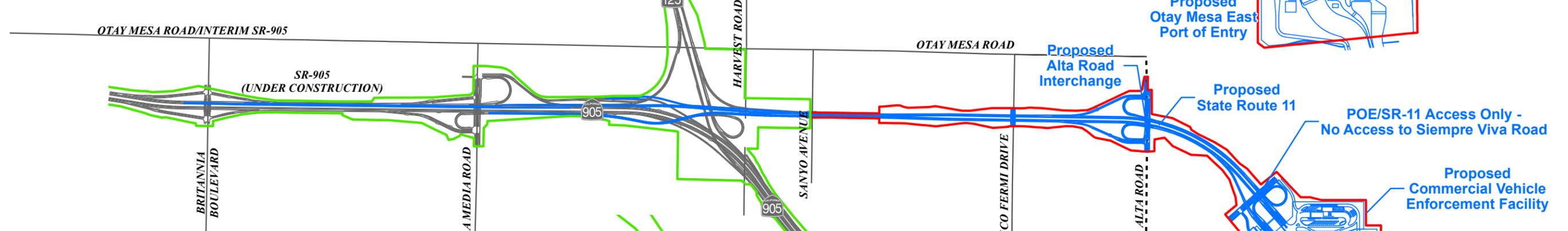
STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II NATURAL ENVIRONMENT STUDY

Figure 1-3b

Two Interchange Alternative



One Interchange Alternative



No Interchange Alternative



LEGEND

- Proposed Project Features
- Proposed Right of Way
- Project Study Area Parcels Owned By Caltrans/Transportation Agencies
- Future County Circulation Element Roads to be Built by Others (Would Require Revisions by the County to Accomodate the Proposed Project)

2,000 1,000 0 2,000 Feet

Job No: BOY-04.12 Date: 08/23/10

Comparative Overview of the Project Build Alternatives

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II NATURAL ENVIRONMENT STUDY

Within the Sanyo Avenue area, the Two Interchange Alternative would include the 22-ft median, two through lanes in each direction, an auxiliary lane in each direction associated with the Enrico Fermi Drive interchange, shoulders, and related grading. Concrete barriers (three ft tall) would extend along each side of the roadway in this area, and an additional three-ft-tall concrete barrier would extend along the median.

Proposed SR-11 would be located midway between Otay Mesa and Airway roads for most of its length, and would cross four local surface streets: Sanyo Avenue, Enrico Fermi Drive, Alta Road, and Siempre Viva Road. It would extend east from the vicinity of Harvest Road (at the future SR-125/SR-905 Interchange) for approximately 1.5 miles, before curving to the southeast near Alta Road and continuing for approximately 0.6 mile to connect with the proposed POE/CVEF site.

Proposed limits of grading and R/W are expected to be up to 500 ft wide, with the exception of the interchange locations, which would require additional space. These limits would include all required cut/fill slopes and project-related drainage facilities, lighting, fencing, utilities and landscaping and would be sufficient to accommodate all required construction staging and storage for the proposed project. The proposed grading limits include several easements that are outside of the proposed R/W. Permanent and temporary easements are associated with the relocation of a gas pipeline around the east side of the proposed POE. A 0.2-acre permanent easement is proposed west of the Siempre Viva Boulevard Interchange for proposed off-site drainage enhancements. In the Sanyo Avenue area, the project would require permanent easements across existing developed properties, adjacent to proposed SR-11.

This alternative would include an undercrossing structure at Sanyo Avenue; an overcrossing structure at Alta Road; and interchanges with local roadways at Siempre Viva Road (half interchange) and Enrico Fermi Drive.¹ To link SR-11 to SR-905, connectors would be provided and certain modifications to the approved SR-905 design would be required. These interchanges and connections are described below.

SR-905 Modifications to Accommodate SR-11 Connections

SR-905 was originally approved (and is now under construction between SR-125 and Britannia Boulevard) as a six-lane highway (three lanes in each direction), with a median wide enough to accommodate four additional lanes, two of which could function as HOV lanes should future demand justify their construction. The eastern portion of approved SR-905 includes one- to two-lane ramps from SR-905, just east of the SR-905/SR-125 Interchange, to Enrico Fermi Drive, along the approximate alignment of what are now proposed to be SR-11 and SR-11/SR-905 connectors. With implementation of SR-11, certain modifications to the approved SR-905 design would be required, and are included as part of the proposed project (refer to Figure 1-6). These modifications are described below for the Two Interchange Alternative, but would be the same under the One and No Interchange Alternatives.

- The previously approved ramps from SR-905 to Enrico Fermi Drive would be replaced by the western portion of SR-11 (east of Harvest Road), as well as two-lane connectors in each

¹ The Caltrans Highway Design Manual defines an undercrossing as a structure designed to allow a local roadway to pass under a highway, while an overcrossing is defined as a structure designed to allow a local roadway to pass over a highway. An interchange is defined as a system of interconnecting roadways in conjunction with one or more grade separations providing for the interchange of traffic between two or more roadways on different levels.

direction (west of Harvest Road) for the entire distance between SR-905 and SR-11. The westbound connector would be approximately within the same alignment as the previously approved on-ramp, while the eastbound connector would dip to the south compared to the previously approved off-ramp, within previously approved R/W.

- On the eastbound side of SR-905, an additional auxiliary lane would be extended between La Media Road and the SR-11 connector, requiring a slight widening in this area;
- To accommodate weaving movements on westbound SR-905, the SR-11 merge with the SR-905 travel lanes would taper to match SR-905 in the vicinity of the Britannia Boulevard Interchange. This merge occurred at the La Media Road Interchange in the previously-approved design for SR-905.
- On the westbound side of SR-905, the proposed project would construct a ramp from SR-11 to tie into the planned SR-905 and SR-125 off-ramps to La Media Road.

The SR-905 modifications to accommodate the proposed SR-11 connections would be entirely within existing SR-905 R/W.

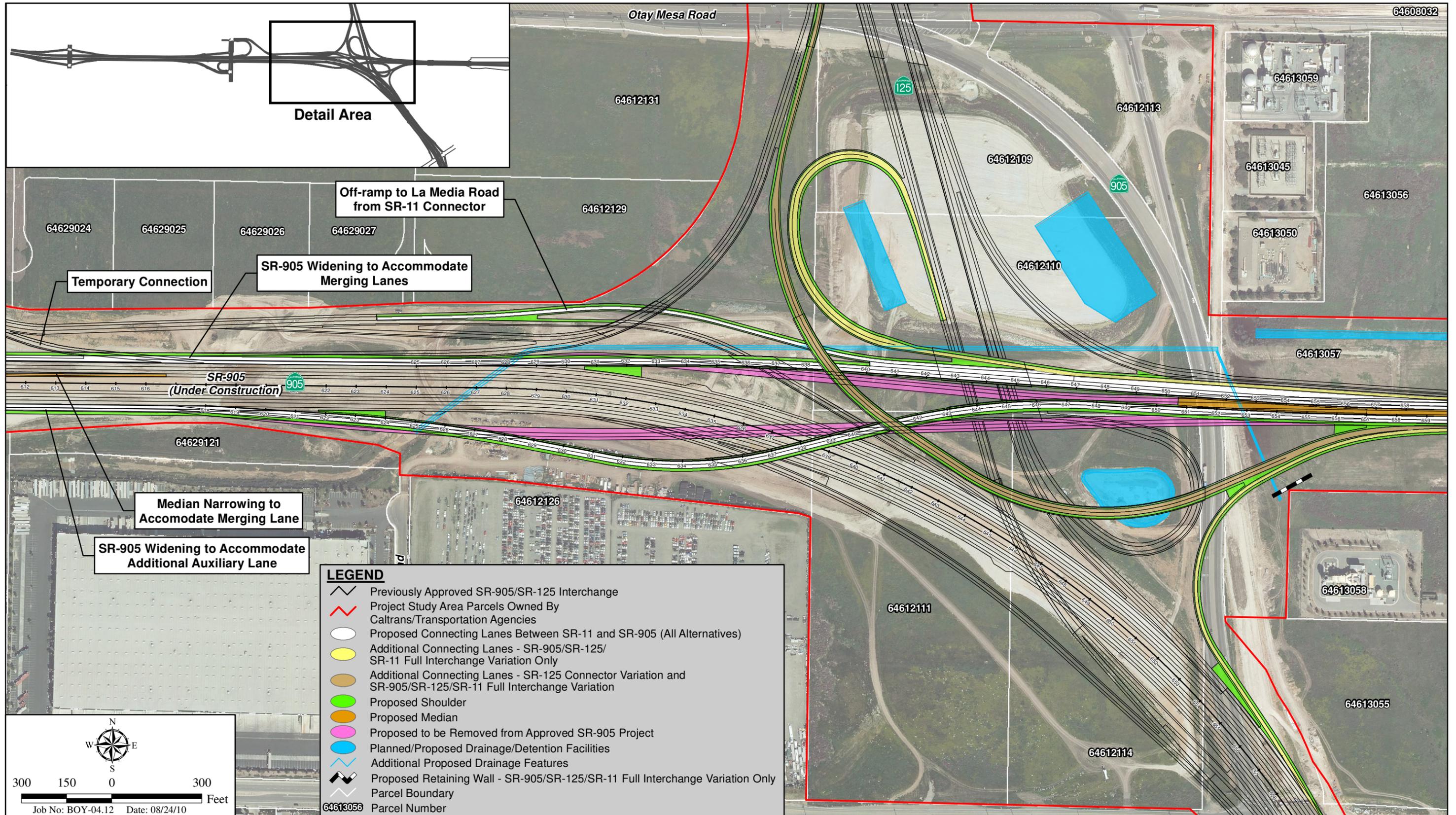
Enrico Fermi Drive and Siempre Viva Road Interchanges

Under this alternative, two interchanges would be constructed along SR-11, at Enrico Fermi Drive and Siempre Viva Road (Figure 1-4).

The proposed interchange at Enrico Fermi Drive would have on- and off-ramps to/from both eastbound and westbound SR-11 (and unmanned toll facilities along the westbound on-ramp and eastbound off-ramp). This interchange would be located approximately one mile east of the previously described SR-905/SR-125/SR-11 Interchange, and approximately one mile west of the proposed interchange at Siempre Viva Road.

The proposed Siempre Viva Road Interchange under this alternative would provide partial connectivity between SR-11, Siempre Viva Road and the POE (Figure 1-7). Specific features associated with this interchange design would include:

- Through traffic along Siempre Viva Road would pass over SR-11;
- A diamond off-ramp from eastbound SR-11 to Siempre Viva Road, to accommodate both passenger and commercial traffic not destined for the POE;
- Access from the Siempre Viva Road eastbound off-ramp junction to the toll administration facilities and potential future transit center;
- A westbound loop on-ramp to SR-11 for passenger-only vehicles exiting the POE;
- A direct connection from the POE to westbound SR-11 for commercial only vehicles;
- A diamond on-ramp for passenger and commercial vehicles to access westbound SR-11 from Siempre Viva Road; and



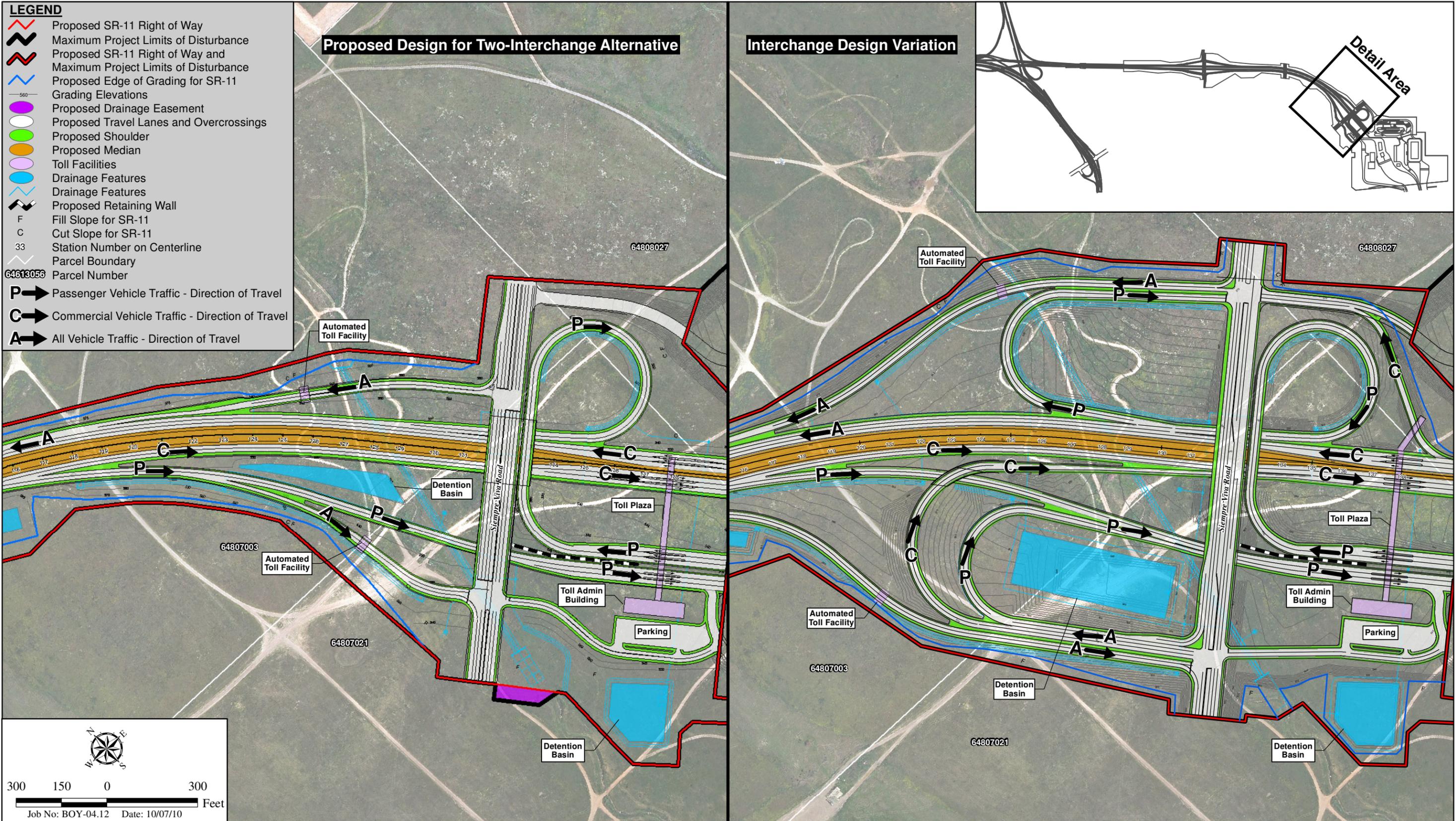
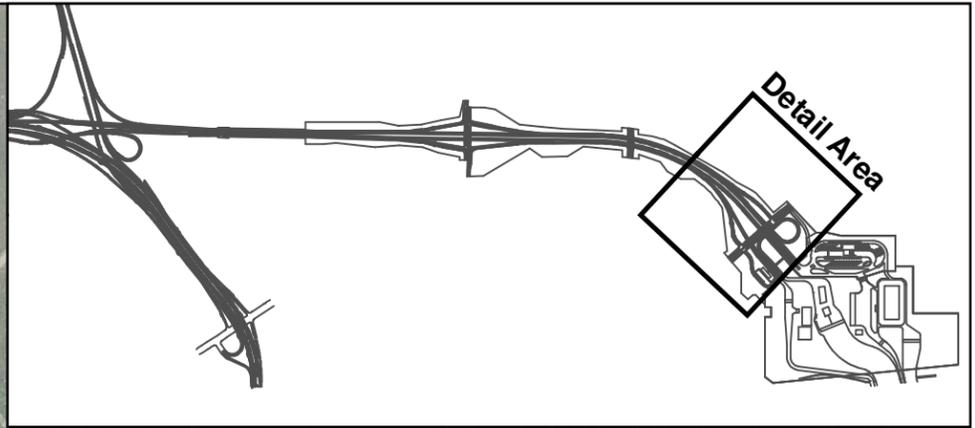
SR-905/SR-125/SR-11 Interchange and Variations (All Alternatives)

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II NATURAL ENVIRONMENT STUDY

- LEGEND**
- Proposed SR-11 Right of Way
 - Maximum Project Limits of Disturbance
 - Proposed SR-11 Right of Way and Maximum Project Limits of Disturbance
 - Proposed Edge of Grading for SR-11
 - Grading Elevations
 - Proposed Drainage Easement
 - Proposed Travel Lanes and Overcrossings
 - Proposed Shoulder
 - Proposed Median
 - Toll Facilities
 - Drainage Features
 - Drainage Features
 - Proposed Retaining Wall
 - Fill Slope for SR-11
 - Cut Slope for SR-11
 - Station Number on Centerline
 - Parcel Boundary
 - Parcel Number
 - Passenger Vehicle Traffic - Direction of Travel
 - Commercial Vehicle Traffic - Direction of Travel
 - All Vehicle Traffic - Direction of Travel

Proposed Design for Two-Interchange Alternative

Interchange Design Variation



Siempre Viva Road Full Interchange Variation

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II NATURAL ENVIRONMENT STUDY

Figure 1-7

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- A retaining wall approximately 415 feet long and up to 20 feet high would run between the eastbound and westbound passenger lanes.

Otay Mesa East POE

The proposed POE would accommodate northbound and southbound commercial and passenger traffic, as well as pedestrians and bicycles. The POE site would be accessed from the north by SR-11. From the south, entry would be through the proposed Otay II POE on the Mexican side of the border (Figure 1-8). Southbound traffic leaving the proposed Otay II POE in Mexico would enter the non-tolled segment of the Tijuana-Tecate Toll Road. This traffic would also have access to the Tijuana-Rosarito corridor prior to reaching the first toll booth, thus providing binational regional mobility through the new POE (Instituto Municipal de Planeación 2005).

The Tier II POE shape and layout have been refined since the Phase I PEIR/PEIS during conceptual design of the project. The conceptual POE design is subject to revision pending the results of the Program Development Study (PDS) underway pursuant to GSA and CBP protocol. As shown on Figure 1-8, the conceptual Tier II POE site includes an irregularly-shaped polygon of approximately 106.3 acres north of the international border and across from the associated Otay II POE site in Mexico. Between the two POEs is a 150-ft wide strip of federal land patrolled by the U.S. Border Patrol. Approximately 7.4 acres within this strip of land would be impacted by the proposed project to provide northbound and southbound connections between the two POEs, as well as drainage outlet structures from the Otay Mesa East POE. In addition, an existing 24-inch natural gas main within the POE site (and the CVEF site described below) would be relocated to the east adjacent to the POE and CVEF sites.

Temporary and permanent easements are proposed outside of the proposed project R/W. These easements would be necessary for the relocation of a natural gas pipeline along the northeastern boundary of the proposed POE/CVEF, as well as for modifying and maintaining a portion of an existing drainage along the western boundary of the Siempre Viva Interchange to minimize the potential for scour and associated erosion following project implementation. Impacts associated with these easements would be considered permanent.

Design and operational assumptions have been made for analysis purposes, based on current staffing at existing POEs in the region and proposed design/operations at the Otay Mesa East POE. The proposed POE is assumed to employ approximately 475 people. Hours of operation for processing passenger vehicles are anticipated to be 24 hours per day and 7 days per week, while hours of operation for processing commercial vehicles are anticipated at this time to be 6 A.M. to 10 P.M. on weekdays and 8 A.M. to 4 P.M. on weekends. Utilities required for operation of the POE are available in the immediate site vicinity, with connections to be provided during proposed construction. Specific anticipated utility needs include water, sewer, electricity, natural gas, solid waste disposal, and communication services.

The proposed Otay Mesa East POE would accommodate all of the federal agency and security functions currently anticipated to be necessary for the long-term effective operation of an international POE, including the requirements of the following proposed POE tenant agencies: General Services Administration (GSA), Customs and Border Protection (CBP), the U.S. Food and Drug Administration, the U.S. Department of Agriculture, the U.S. Fish and Wildlife Service (USFWS), and the U.S. Immigration and Customs Enforcement – Investigations Office. Due to concerns regarding potential acts of terrorism, the POE would be designed to conform with the following directives: 1) The October 19, 1995 Executive Order (EO) 12977 and addenda, which

address the quality and effectiveness of security and protection measures for non-military federal facilities; 2) the Land Port of Entry Design Guide (CBP et al. 2006) and the Security and Information Technology Supplemental Guide (CBP et al. 2007), both developed by CBP, GSA and the Interagency Security Committee; and 3) the U.S. Department of Defense (DoD) Unified Facilities Criteria Manual (UFC 4-010-01), entitled *DoD Minimum Antiterrorism Standards for Buildings* (DoD 2003). Sufficient space has been provided within the proposed POE site to accommodate future southbound inspections, and conceptual facilities are identified (Figure 1-8). Detailed design for such facilities is underway as part of a Program Development Study pursuant to GSA and CBP protocol.

Following implementation of the proposed project, it is anticipated that the existing Otay Mesa POE would remain open to all commercial, passenger, and pedestrian traffic, while the existing POE at San Ysidro would continue to accommodate only passenger and pedestrian traffic. The GSA Feasibility Study conducted as part of the Otay Mesa East POE Phase I analysis (GSA 2008) concluded that this would be the most efficient operational arrangement to accommodate projected traffic in the San Diego-Tijuana region.

Transit Center Site

The overall POE footprint includes approximately two acres that would accommodate a potential future transit center adjacent to the POE. The intent of reserving space for a potential future transit center is to ensure that opportunities to implement transit service to the POE, such as Bus Rapid Transit, would not be precluded by future development in the project site vicinity. It is expected that the San Diego Association of Governments (SANDAG) would locate the future transit center in the vicinity of the western POE boundary.

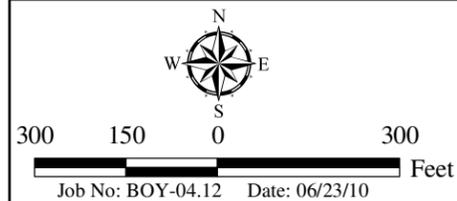
Commercial Vehicle Enforcement Facility

During the Tier II scoping process, a CVEF alternatives analysis was undertaken, which determined that construction and operation of a new CVEF adjacent to the proposed Otay Mesa East POE would have considerable security, operational and environmental advantages over providing access from the new POE to the existing CVEF (Caltrans/AECOM 2009). The proposed site for the new CVEF would include approximately 23.3 acres and would be located east of SR-11 along the northern POE boundary (Figure 1-8). After receiving clearance to enter the U.S. at the POE, northbound commercial vehicles would be routed into the CVEF facility for a safety inspection by the California Highway Patrol prior to being released onto the regional roadway system. The CVEF design would be similar to the CVEF at the existing Otay Mesa POE, with anticipated facilities to include an approximately 8,000-square ft main building. It is expected that hours of operation for the CVEF would be compatible with the proposed POE's schedule for processing commercial vehicles (i.e., 6 A.M. to 10 P.M.). Following project implementation, it is expected that the existing Otay Mesa CVEF would remain open to serve commercial traffic crossing the border at the Otay Mesa POE.

One Interchange Alternative

Under the One Interchange Alternative, proposed SR-11 would be constructed with a single interchange at Alta Road, approximately 1.4 miles east of the SR-905/SR-125/SR-11 Interchange (Figure 1-4). SR-11 would have an undercrossing at Sanyo Avenue and overcrossings at Enrico Fermi Drive and Siempre Viva Road.

Facility Number	Description
Northbound (Inbound/Import) Commercial Facilities	
1	Commercial Primary Inspection Booth/Canopies
2	Commercial VACIS Lanes (Building)
3	Commercial Bulk Storage Inspection Bins
4	Bird Quarantine Building
5	Commercial Inspection Building
6	Commercial Inspection Docks
Southbound (Outbound/Export) Commercial Facilities	
7	Commercial Primary Inspection Booth/Canopies
8	Commercial Inspection Building/Docks
9	Commercial Exit Lanes/Booth/Canopies
10	Seizure Vault
Northbound (Inbound) Non-commercial Facilities	
11	Non-commercial Primary Inspection Booth/Canopies
12	Non-commercial Primary Headhouse
13	Non-commercial Secondary Inspection Lanes/Booths/Canopy
Southbound (Outbound) Non-commercial Facilities	
14	Non-commercial Primary Inspection Canopy
15	Non-commercial and Commercial Inspection Building
Other Non-commercial Facilities	
16	Main Building
17	Bus Offload Spaces (10 by 60 feet each, Non-building)
18	Bus Plaza Canopy
19	Bus Inspection Space (12 by 60 feet, Non-building)
Parking Facilities	
20	General Parking Lot (Non-building)
21	Commercial Truck Impound Lot (1,750 sf/space, Non-building)
CVEF Facilities	
22	Administration Building
23	Inspection Bays
24	Smog Inspection
25	Weight Scales
	Northbound Travel
	Southbound Travel
	Passenger Vehicle Traffic
	Commercial Vehicle Traffic
	Existing 24-inch Fuel Line
	Proposed 24-inch Fuel Line Relocation within 20-foot Easement
	Grading Elevations
	Drainage Features
	Drainage Features
	Storm Drain With Inlets (■) and Outlets (□)
	Proposed SR-11 Right of Way
	Additional Disturbance Limits within U.S. Border Patrol Easement
	Parcel Boundary
	CVEF Boundary
	POE Boundary



Job No: BOY-04.12 Date: 06/23/10

Source: AECOM, Inc.

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Conceptual Otay Mesa East POE and CVEF Layout

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II NATURAL ENVIRONMENT STUDY

Figure 1-8

In contrast to the Two Interchange Alternative, SR-11 at Siempre Viva Road would be constructed as an overcrossing, with no access to or from SR-11. Despite this difference, several design elements at the SR-11/Siempre Viva Road overcrossing would be similar to the design of SR-11/Siempre Viva Road Interchange under the Two Interchange Alternative (Figure 1-4). Ramps would still be provided in this location to connect the POE and SR-11.

The One Interchange Alternative would have a slightly smaller footprint between Sanyo Avenue and Enrico Fermi Drive than would the Two Interchange Alternative, due to the elimination of the Enrico Fermi Drive Interchange and its associated auxiliary lanes (Figure 1-9). The designs of the SR-905/SR-125/SR-11 Interchange, connectors to SR-905, associated modifications to SR-905, the Otay Mesa East POE (including the potential future transit center site), and the CVEF would be the same with this alternative as described above for the Two Interchange Alternative.

No Interchange Alternative

Under the No Interchange Alternative, no interchanges would be constructed along proposed SR-11. An undercrossing structure would be provided at Sanyo Avenue, and overcrossings would be built at Enrico Fermi Drive and Alta Road (Figure 1-4). In addition, SR-11 at Siempre Viva Road would be constructed as an overcrossing, with the same design as described above for the One Interchange Alternative. As in the case of the One Interchange Alternative, the No Interchange Alternative would have a slightly smaller footprint between Sanyo Avenue and Enrico Fermi Drive than would the Two Interchange Alternative, due to the elimination of the Enrico Fermi Drive Interchange and its associated auxiliary lanes (Figure 1-9). The designs of the SR-905/SR-125/SR-11 Interchange, connectors to SR-905, associated modifications to SR-905, the Otay Mesa East POE (including the potential future transit center site), and the CVEF site would be the same with this alternative as with the previous two build alternatives.

Variations on the Build Alternatives

A number of design or operational variations are being evaluated for one or more of the described build alternatives, as outlined below.

No Toll Variation

The No Toll Variation could apply to any of the three build alternatives and would involve SR-11 operating as a highway instead of a toll highway. The principal design difference under this variation would be the lack of toll-related structures such as toll administration and FasTrak facilities.

46-foot Median Variation

With this variation, the SR-11 median would not narrow to 22 ft in the vicinity of Sanyo Avenue but would narrow from a 62-ft width to a 46-ft width through this area, as depicted on Figures 1-10 and 1-11. This variation could apply to any of the three build alternatives.

SR-905/SR-125/SR-11 Interchange Design Variations

Two variations are being considered for the SR-905/SR-125/SR-11 Interchange, referred to as the SR-125 Connector Variation and the Full Interchange Variation. These variations could apply to any of the three build alternatives.

SR-125 Connector Variation

Under the SR-125 Connector Variation, the southbound SR-125 to eastbound SR-11 connector would be added to the interchange (Figure 1-6). A local connector ramp from Enrico Fermi Drive to northbound SR-125 was approved under the SR-905 project; all of the proposed project build alternatives assume a similar direct connector from westbound SR-11 to northbound SR-125. The addition of the complementary southbound SR-125 to eastbound SR-11 connector under this variation would complete the direct link between the two highways.

SR-905/SR-125/SR-11 Full Interchange Variation

Under the Full Interchange Variation, in addition to the SR-125 connector to be included under the SR-125 Connector Variation described above, the following connectors would also be added to the interchange to complete the connections between SR-11 and SR-905 (Figure 1-6), providing for full movement in all directions:

- Westbound SR-11 to eastbound SR-905; and
- Westbound SR-905 to eastbound SR-11

The addition of these connectors would complete the planned SR-125/SR-905/SR-11 Interchange to provide full connectivity among the three highways.

Siempre Viva Road Full Interchange Variation

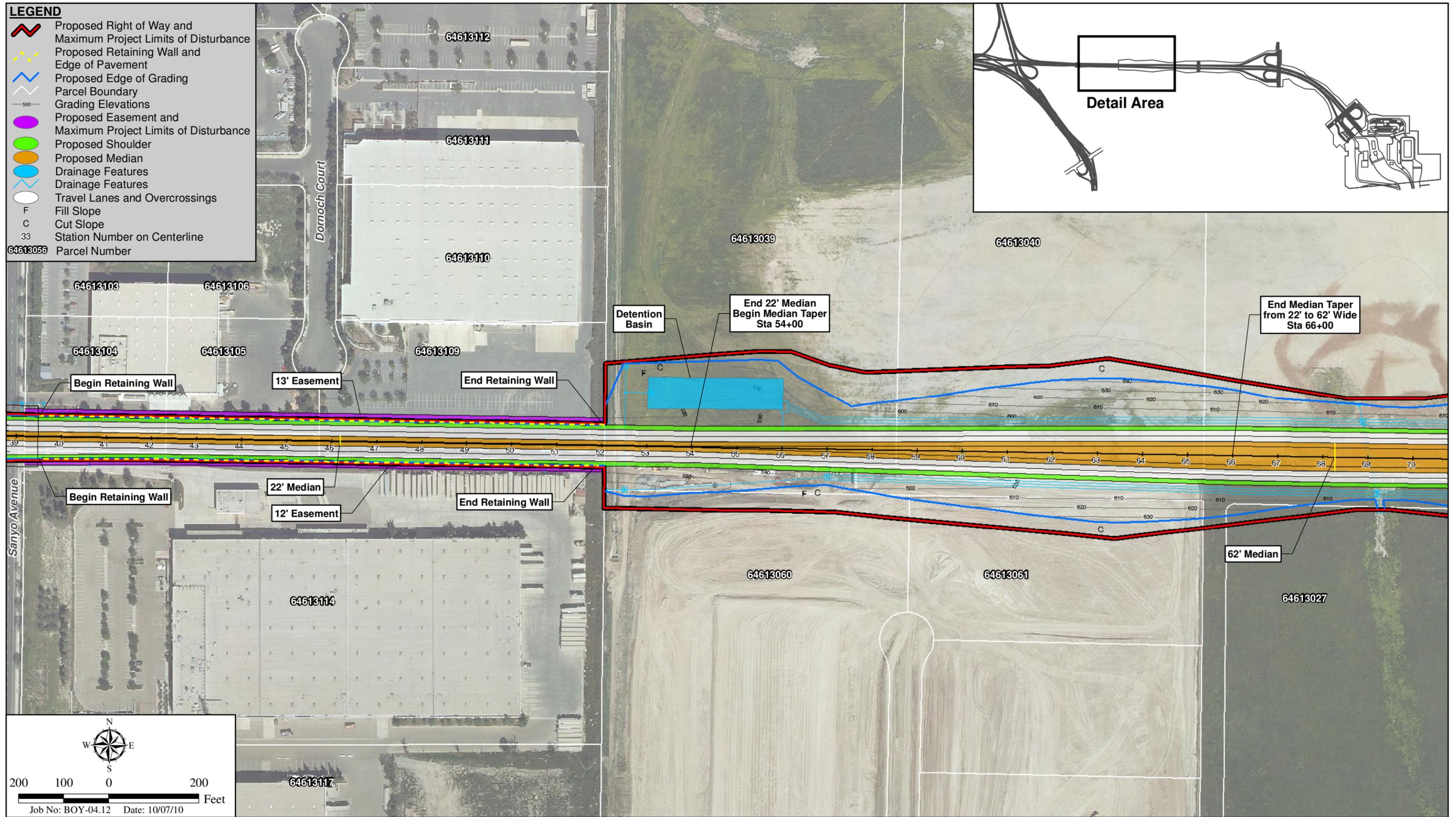
This variation would apply only to the Two Interchange Alternative, and would incorporate a full interchange at SR-11/Siempre Viva Road. The full interchange design under this variation would include a number of features that are the same as (or similar to) those described for the half interchange, as well as additional facilities to accommodate the full range of vehicle movements. Specific features associated with this variation are summarized below and shown on Figure 1-7, in comparison with the proposed design of this interchange for the Two Interchange Alternative. This variation would include elements described below.

- Two separate loop ramps (one for commercial-only traffic and one for passenger-only traffic) to provide access from Siempre Viva Road to the southbound lanes within the POE.
- A loop ramp for northbound passenger-only traffic from the POE to Siempre Viva Road.
- Direct access for commercial-only traffic from the CVEF to Siempre Viva Road.

The off-site drainage easement associated with the baseline half-interchange design would not be required for the full interchange design, because the portion of the drainage that was proposed to be modified to prevent scour would be fully impacted by the full interchange.

No Build Alternative

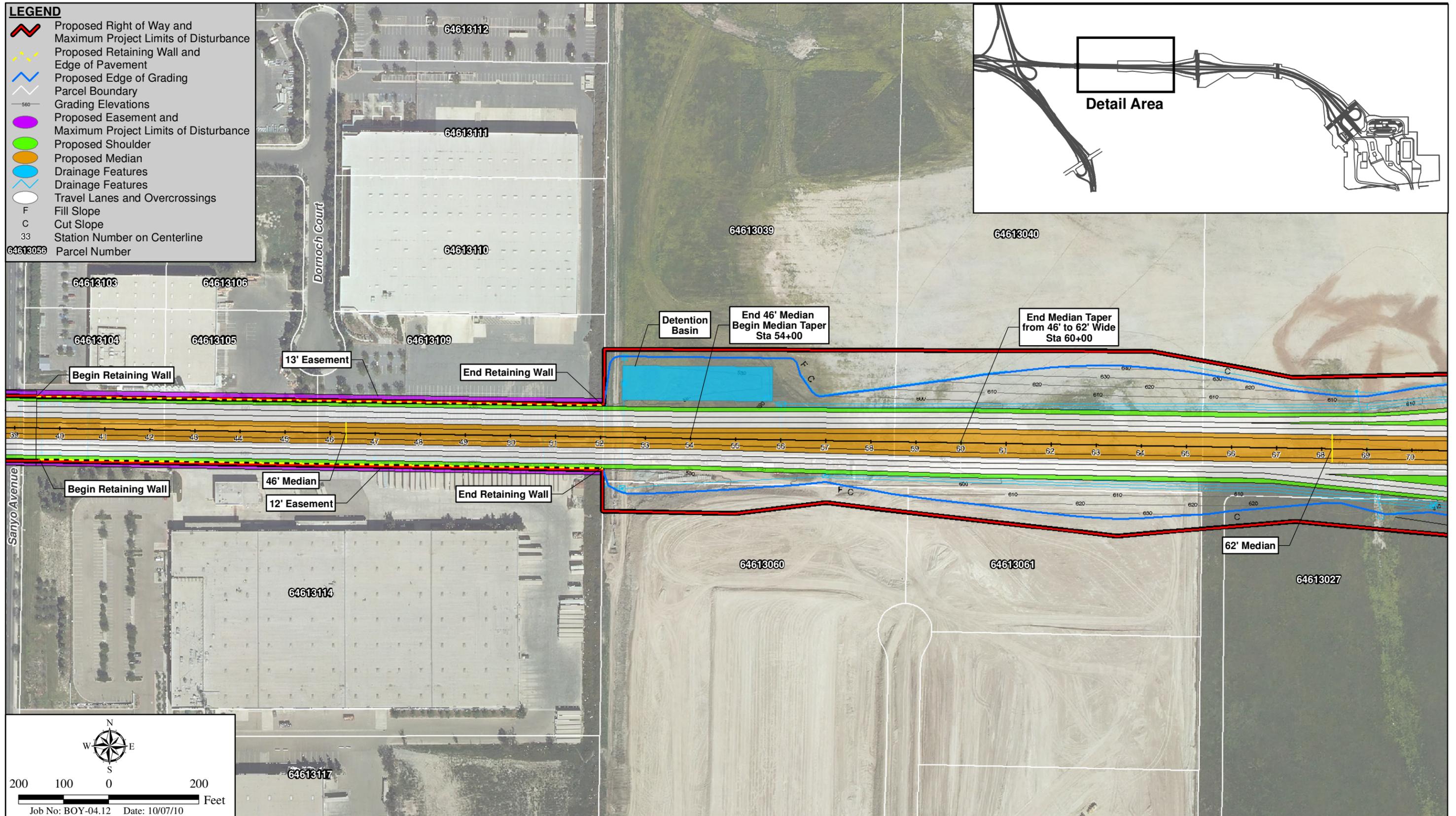
Under the No Build Alternative, none of the project components described under the build alternatives would be constructed, including SR-11 (and associated interchanges, under/overcrossings and related facilities), and the Otay Mesa East POE and CVEF (including the potential future transit center site). The existing Otay Mesa POE and associated CVEF, as well as the existing San Ysidro POE, would remain open and operational.



Portion of One and No Interchange Alternative with 22-Foot Median

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II NATURAL ENVIRONMENT STUDY

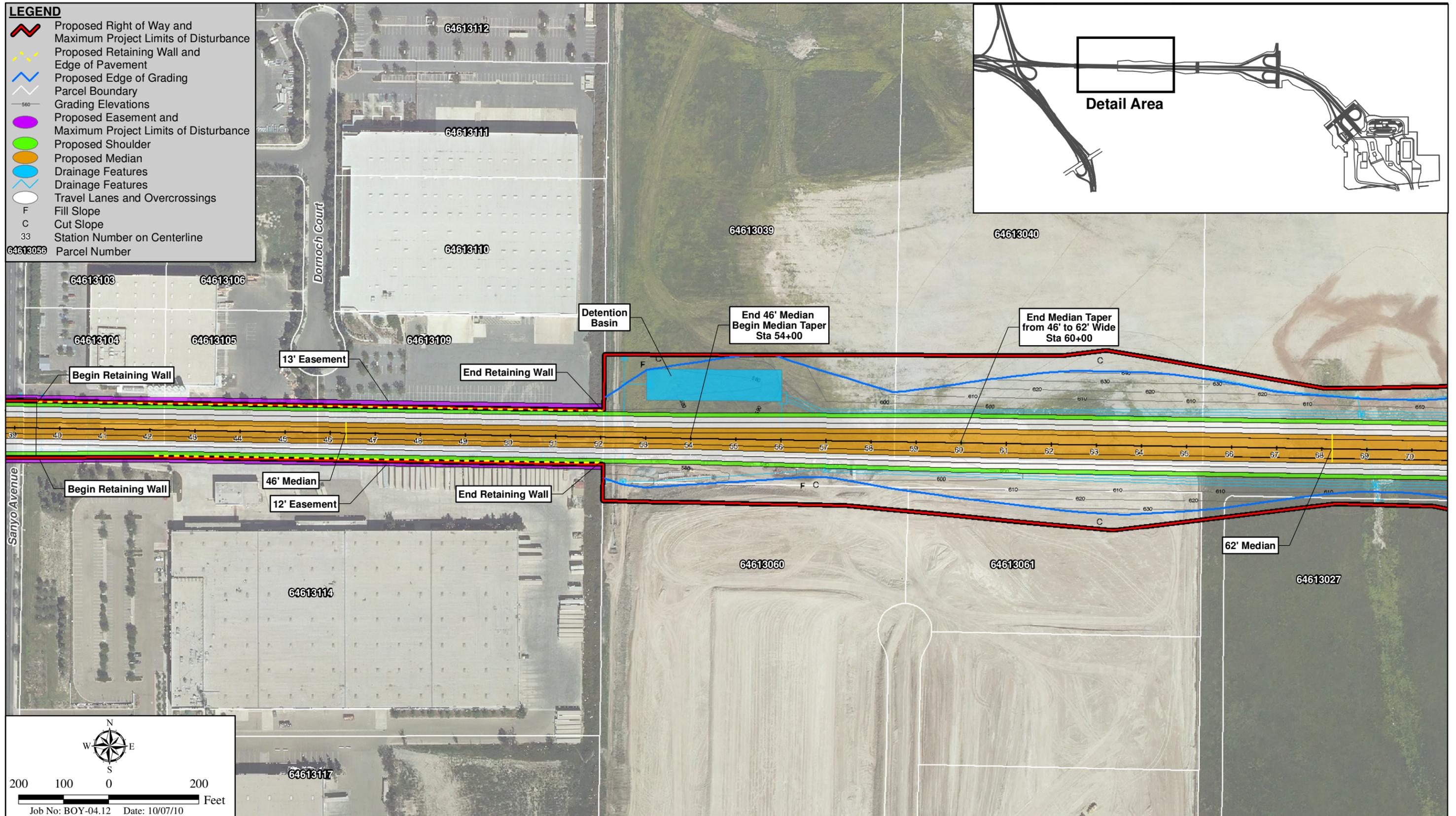
Figure 1-9



Two Interchange Alternative Variation with 46-Foot Median

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II NATURAL ENVIRONMENT STUDY

Figure 1-10



One and No Interchange Alternative Variation with 46-Foot Median

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II NATURAL ENVIRONMENT STUDY

Chapter 2. Study Methods

2.1 Regulatory Requirements

Federal Permitting

Impacts to Waters of the U.S. (WUS) are regulated by the U.S. Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act (CWA; 33 USC 401 et seq.; 33 USC 1344; USC 1413; and DoD, U.S. Department of the Army, USACE 33 CFR Part 323). A federal CWA Section 404 Permit would be required for the proposed project to place fill in WUS. Impacts equal to or less than 0.5 acre of WUS are generally processed with a Nationwide Permit (NWP), and impacts to greater than 0.5 acre of WUS are processed with an Individual Permit. Depending on the thresholds specified by the type of permit required (e.g., NWP 14 for linear transportation projects or NWP 39 for institutional or commercial developments), the USACE may also require an Individual Permit for projects impacting greater than 300 linear ft of drainage, irrespective of the acreage affected, or it may issue a waiver for such impacts.

A CWA Section 401 Water Quality Certification administered by the State Water Resources Control Board must be issued prior to any 404 Permit. All areas considered USACE jurisdictional would be covered under the 401 Certification. If the USACE determines that the vernal pool within the Biological Study Area (BSA) for the proposed project has a hydrologic connection to other WUS, regulation of this area would result in additional USACE wetlands acreage in the BSA. Vernal pools that are determined not to have a hydrologic connection to other WUS may still be regulated by the California Regional Water Quality Control Board (RWQCB) through the 401 Certification process. If a 401 Certification is not required, the RWQCB may elect to regulate Waters of the state under the Porter-Cologne Act.

For impacts to federally listed species, Section 7 consultation with the USFWS would be necessary under the federal Endangered Species Act (ESA).

State Permitting

The California Department of Fish and Game (CDFG) regulates alterations or impacts to streambeds or lakes under California Fish and Game Code 1602. The CDFG requires a Lake or Streambed Alteration Agreement (LSAA) for projects that will divert or obstruct the natural flow of water; change the bed, channel, or bank of any stream; or use any material from a streambed. The LSAA is a contract between the applicant and CDFG stating what activities can occur in the riparian zone and stream course (California Association of Resource Conservation Districts 2002).

For any impacts to state listed species, a permit for incidental take may be required from the CDFG under Sections 2081(b) and (c) of the California ESA.

County of San Diego Multiple Species Conservation Program Subarea Plan

The County of San Diego (County) Multiple Species Conservation Program (MSCP) Subarea Plan (County 1997) is a comprehensive, long-term habitat conservation plan that addresses the needs of multiple species by identifying key areas for preservation as open space in order to link

core biological areas into a regional wildlife preserve. The BSA (defined below) includes three different designations for proposed development in the County: Take Authorized, which is where the taking of MSCP-covered species incidental to lawful land uses is authorized by the County; Minor Amendment Area where habitat can be partially or completely eliminated (with appropriate mitigation) without significantly affecting the overall goal of the County's MSCP Subarea Plan (County 1997); and Minor Amendment Area Subject to Special Considerations that are subject to certain requirements of the County's East Otay Mesa Specific Plan (EOMSP; County 2002), including the preparation and County approval of a Resource Conservation Plan prior to any development that includes clearing or grading (Figure 2-1).

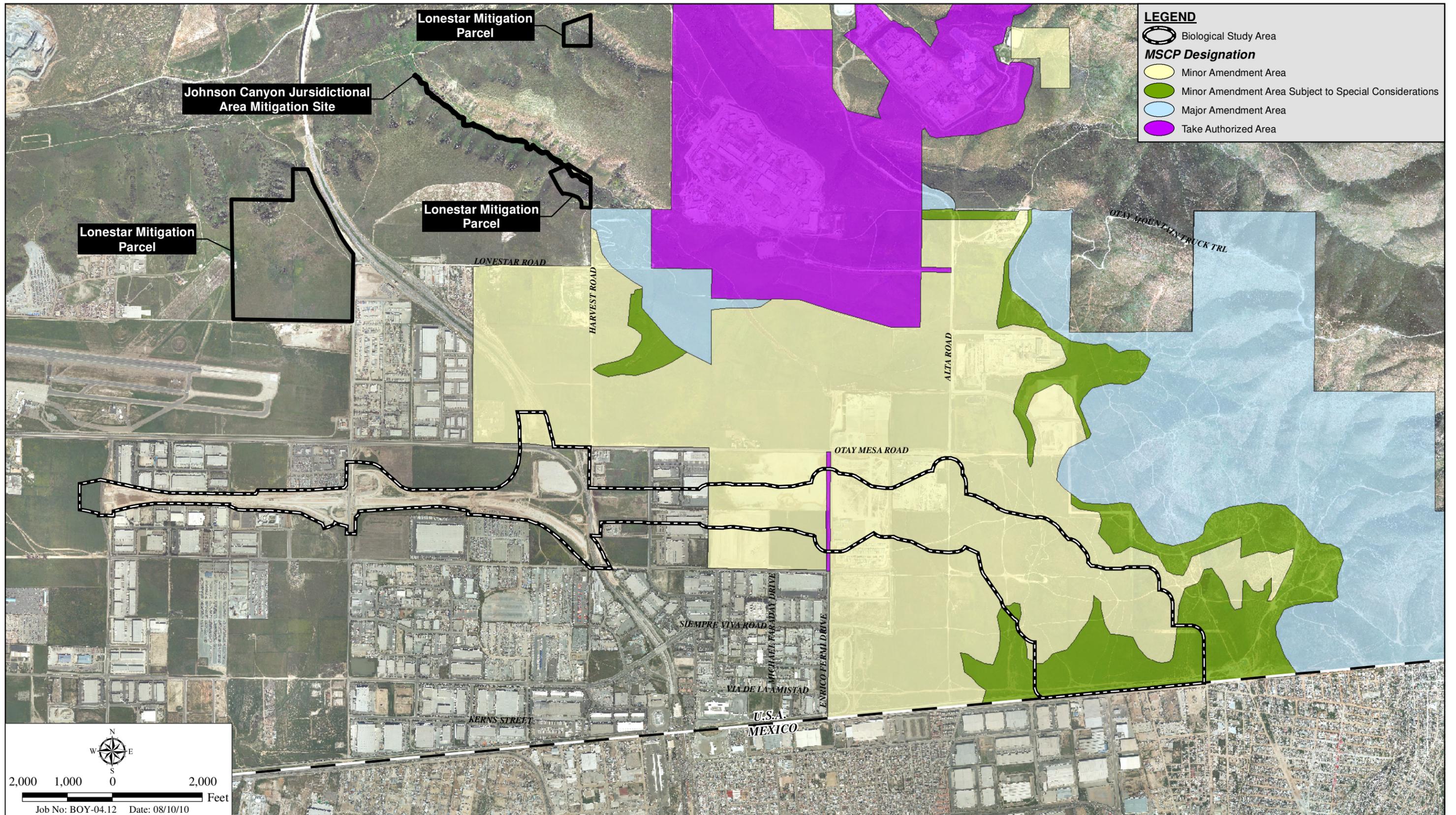
2.2 Studies Required

Studies required for the proposed project include general botanical/wildlife, vegetation mapping, jurisdictional delineation, and basin/vernal pool mapping (and watershed mapping), as well as studies for special status plant species, San Diego and Riverside fairy shrimp (*Branchinecta sandiegonensis* and *Streptocephalus woottoni*), Quino checkerspot butterfly (*Euphydryas editha quino*; Quino), coastal California gnatcatcher (*Polioptila californica californica*), burrowing owl (*Athene cunicularia*), and wildlife corridors.

The studies that were conducted were determined based on knowledge of species occurrences in the survey area from previous surveys and a habitat-based analysis. Additionally, a mandatory species list letter was requested from the USFWS at the direction of Caltrans in 2006 (Appendix A). In October 2008, Caltrans sent a request for an updated species list for Tier II. USFWS replied on November 7, 2008 that the October 6, 2006 letter should continue to be used for the project. On October 20, 2010, the USFWS reiterated that the list is still valid.

Previous biological resource surveys have also been conducted for the proposed project and for other projects that are entirely or partly within the BSA, as well as for the EOMSP Area (County 2002). Some parcels in the BSA were not surveyed because they were already developed, or access to them was denied by the property owners. Biological resource mapping for those parcels was obtained by viewing the land from the property lines, from previous surveys, or from review of aerial photography.

Surveys occurred from 2000 through 2009 (EDAW, Inc. [EDAW] 2001a, 2001b; HELIX Environmental Planning, Inc. [HELIX] 2002, 2004, 2006a through 2006g, 2007, 2008, 2009a through 2009g; URS Corporation [URS] 2005). A compilation of all data collected from these surveys is included on the figures in this NES. The compiled data was adjusted to eliminate multiple observations (from different years) of the same special status species from the same locations so as not to over-report their presence. Table 1 lists the types of surveys completed and the years in which they were conducted. The methods for surveys conducted in 2006 and 2008/2009 (i.e., from fall 2008 through summer 2009) are described following Table 1. Additional information for the surveys conducted from 2006 through 2009 is included in Appendix B. Surveys in 2008/2009 were not conducted within the SR-905 approved FEIR/FEIS limits of disturbance because this area is developed or developing, and/or the impacts have already been permitted by the resource agencies. No resource mapping or impact analysis was required within these approved disturbance limits. Much of the BSA within these limits is currently undergoing grading for the SR-905 project.



MSCP Designations and Proposed Mitigation Parcels

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II NATURAL ENVIRONMENT STUDY

Figure 2-1

Type of Survey	2000	2001	2004	2005	2006	2008	2009
General botanical/wildlife	X	X		X	X	X	X
Map vegetation	X		X	X		X	X
Update mapped vegetation					X	X	
Jurisdictional delineation	X			X	X		X
Basin/vernal pool mapping		X		X	X	X	X
Watershed mapping				X	X		X
Special status plants	X			X	X		X
Wet season fairy shrimp		X	X	X	X	X	X
Dry season fairy shrimp	X	X		X	X	X	X
Quino checkerspot butterfly		X		X	X		X
Coastal California gnatcatcher		X		X	X		X
Burrowing owl	X	X	X	X	X		X
Wildlife Corridor							X

2.2.1 General Botanical/Wildlife

Biologists identified and recorded the names of plants and animals observed or detected during each survey. Appendices C and D include lists of the plant and animal species observed in 2005 (by HELIX and URS) and in 2006 and 2008/2009 (by HELIX). Any federally listed or state listed or other special status species observed or detected were mapped on a 1 inch: 200 ft-scale aerial photograph of the survey area, or was mapped using global positioning system (GPS) technology.

2.2.2 Map Vegetation/Update Mapped Vegetation

In 2006, HELIX biologists conducted a field review of vegetation data that had been collected from previous work in the survey area and updated the vegetation community boundaries, as necessary. Areas that had been cleared were re-mapped as disturbed habitat. In 2008, HELIX biologists conducted another field review of vegetation previously mapped in the survey area and updated the vegetation boundaries, as necessary. On parcels where permission to enter was not granted (see Section 2.5), the vegetation was mapped from the parcel boundaries with the aid of binoculars and recent aerial photography. In 2009, HELIX mapped the vegetation between the two U.S.-Mexico international border fences. Since there was no direct access to the land between the fences, the area was viewed through the perforations in the northern fence (Appendix B).

2.2.3 Jurisdictional Delineation

A jurisdictional delineation was conducted in 2000 for the SR-11 project (HELIX 2002); portions of the 2000 jurisdictional delineation were updated during delineations conducted in February and March 2006 for the Otay Business Park and Otay Crossings Commerce Center projects (HELIX 2006a, 2006b). The delineation for the remaining areas was updated in 2006 (Appendix B; HELIX 2007). Then, prior to beginning fieldwork in 2009, aerial photographs and topographic maps (1 inch: 200 ft-scale), USGS maps, local soil survey data, and previous wetland delineations were reviewed to determine the locations of potential jurisdictional areas (i.e., areas with depressions, drainage channels, or wetland vegetation). Those areas were evaluated or re-evaluated for the presence of WUS, including jurisdictional wetlands (HELIX 2009a). Portions of the survey area west of Sanyo Avenue were previously delineated for SR-905 (HELIX 2004) and were not included in the SR-11 delineation because impacts for these jurisdictional areas have already been permitted (USACE Permit Number 952015100-TCD, CDFG LSAA Number 1600-2004-0513-R5, and RWQCB Certification Number 04C-132).

Because access to certain parcels was not granted by the owners at the time of the 2009 jurisdictional delineation, data reported for these areas was used from the 2006 jurisdictional delineation. No further updates have occurred, and the data collected is still within the required five-year time frame. The USACE has indicated that it will accept the jurisdictional delineation.

USACE wetland boundaries were determined using the three criteria established for wetland delineations (vegetation, hydrology, and soils), as described within the Wetlands Delineation Manual (Environmental Laboratory 1987) and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (USACE 2008).

Wetland affiliations of plant species follow the USFWS' National List of Plant Species that Occur in Wetlands: California (Reed 1988). Soils information was taken from Bowman (1973) and the U.S. Department of Agriculture Soil Conservation Service (1992). Soil samples were evaluated for hydric soil indicators. Soil chromas were identified according to Munsell's Soil Color Charts (Kollmorgen Instruments Corporation 1994).

CDFG jurisdictional boundaries were determined based on the presence of riparian vegetation or regular surface flow. Jurisdictional limits for CDFG streambeds were defined by the top of bank. Vegetated CDFG habitats were mapped at the limits of jurisdictional vegetation.

2.2.4 Vernal Pool/Basin Mapping

Vernal pool surveys were conducted on various parcels within the BSA in 2001 and 2005 through 2009 (Table 1). Most of the water holding basins and vernal pools were identified and mapped in those years. Mapping in 2001 and 2005 was updated with observations in the spring of 2006 (Appendix B). Basins were identified as locations that are likely to hold water because of topographical depressions with an impermeable soil layer. Basins were defined as vernal pools when at least one vernal pool plant indicator species was present (USACE 1997). The BSA was inspected in the spring of 2006 and in 2008/2009 as part of the wet season fairy shrimp surveys (HELIX 2006c, 2009b; Appendix B). During these surveys, the BSA was monitored for new basins, for new occurrences of vernal pool indicator plant species, and for any changes in pool or basin boundaries. Vernal pools and other basins were mapped with a sub-meter accuracy, handheld GPS receiver.

2.2.5 Vernal Pool/Basins with Fairy Shrimp Watershed Mapping

In 2006, watersheds were mapped for all vernal pools and basins with fairy shrimp in the BSA. In 2009, additional watersheds were mapped for all basins with newly located fairy shrimp or vernal pool plant indicator species. In addition, all previous watershed mapping was checked, and the directions that water flows for all vernal pools and basins with fairy shrimp were determined (Appendix B). The watershed mapping was conducted with a sub-meter accuracy, handheld GPS receiver. Prior to visiting the BSA, general vernal pool watershed areas were delineated on 1 inch: 100 ft topographic maps with two-ft contours. This mapping was revised in the field to reflect the visually estimated microtopography surrounding each pool/basin in the BSA. The area surrounding each vernal pool or pool complex was surveyed to identify topographic features not evident on the 1 inch: 100 ft topographic maps. In this way, high points were identified, and the watershed areas were delineated based on the direction of water flow. Watersheds were mapped as the uplands around the pools/basins that would directly drain into the pools/basins, but did not include the upstream watershed when the pool/basin exists in a drainage. In dense complexes of vernal pools or basins with fairy shrimp, the watershed was delineated around all of the pools/basins in the complex. The overflow location of each watershed was mapped in the field and represents the lowest point in the watershed where runoff from the system would occur during storm events.

2.2.6 Special Status Plants

Special status plant species surveys were performed in 2006 and 2009 by HELIX during the flowering periods of special status plants with potential to occur in the BSA (Appendix B). Prior to these surveys, HELIX consulted previous mapping of special status resources in the BSA and developed a list of federally and/or state listed or proposed species (threatened or endangered) as well as special status, but non-listed species that have potential to occur by conducting database searches (including the California Natural Diversity Database [CNDDB] and California Native Plant Society [CNPS]). Surveys were performed by walking transects to look for new locations of special status plant species, to verify locations of previously mapped species, or to note where previously mapped species could no longer be found. Populations of special status plant species found were mapped using a sub-meter accuracy, handheld GPS receiver, and the number of plants within each population was estimated. In 2009, an off-site reference population of Otay tarplant (*Deinandra conjugens*) was inspected to see if the species was in evidence and how vigorous the population was to compare with any observations in the BSA.

2.2.7 Wet Season Fairy Shrimp

Wet season fairy shrimp surveys were conducted in 2006 and 2008/2009 according to USFWS protocol (USFWS 1996) to determine presence/absence of San Diego fairy shrimp and Riverside fairy shrimp (HELIX 2006c, 2009b; Appendix B). Basins that held water were sampled at regular two-week intervals. A total of six site visits were made in 2006, and seven were made in 2008/2009, during which all basins holding water were sampled.

Samples were taken using fine mesh aquarium nets. When possible, fairy shrimp were identified in the field and immediately returned to their basin of origin. In some instances, fairy shrimp were collected, and species were identified using a dissecting scope. Basin depth, area, water temperature, air temperature, habitat condition, and species present were noted and recorded on a USFWS data sheet. Protocol survey reports were prepared for the USFWS following each survey (HELIX 2006c, 2009b).

2.2.8 Dry Season Fairy Shrimp

In 2006 and 2008/2009, dry season surveys were conducted according to USFWS Listed Vernal Pool Branchiopods Protocol (USFWS 1996). Soil collection to determine the presence/absence of San Diego and Riverside fairy shrimp was conducted in 2006 and 2008 (HELIX 2006d, 2009c; Appendix B). During dry sampling of each basin, approximate depth, area, and habitat condition were noted and recorded on a USFWS data sheet. The soil samples were properly stored, then sieved and examined. Protocol survey reports were prepared for the USFWS following each survey (HELIX 2006d, 2009c).

Following the collection of soil in 2008, several new basins were identified in the survey area during the 2008/2009 wet season. These additional basins were sampled during the 2009 wet season survey, along with the previously known basins. Dry soil samples were collected for the new basins in June 2009 (Appendix B) and sieved and examined in July 2009. A protocol survey report was prepared for the USFWS following the survey (HELIX 2009d).

2.2.9 Quino Checkerspot Butterfly

A Quino habitat assessment was conducted to identify potential habitat for the Quino and the areas to survey for the species. The assessment was conducted using current and previous vegetation mapping and knowledge of the survey area, as well as other special status resource mapping conducted by other biologists. Based on this assessment as well as the current USFWS Protocol (USFWS 2002a) and Survey Recommendations (USFWS 2002b) for the Quino, only developed areas, closed canopy riparian vegetation, and those areas to which access was denied by the property owners (see Section 2.5) were excluded from the surveys in 2006 (HELIX 2006e) and 2009 (HELIX 2009e).

The surveys were conducted by walking approximately parallel transects through potential Quino habitat and identifying butterflies with the aid of binoculars. Larval host plants (i.e., dwarf plantain [*Plantago erecta*] and purple owl's clover [*Castilleja exserta*]) were mapped, and lists of nectar resources were made in field notes and on survey forms. Lists of all butterfly species observed during each site visit were also made. Protocol survey reports were prepared for the USFWS following each survey (HELIX 2006e, 2009e). Information for the Quino surveys is provided in Appendix B.

2.2.10 Coastal California Gnatcatcher

Three site visits were made to survey for the coastal California gnatcatcher per USFWS protocol (USFWS 1997) in 2006 (HELIX 2006f; Appendix B). Another USFWS Protocol survey for the gnatcatcher was conducted in 2009 (HELIX 2009f; Appendix B). The surveys were conducted by walking through vegetation or on adjacent paths, and birds were viewed with the aid of binoculars, where necessary. Taped gnatcatcher vocalizations were played for approximately 10 seconds at approximate five-minute intervals in an attempt to elicit a response from any non-vocal gnatcatcher. Not all potential gnatcatcher habitat could be directly accessed in 2009 because permission from one property owner was not granted (see Section 2.5). These areas were surveyed from the property line with the use of binoculars and the taped vocalizations played at the potential habitat. Protocol survey reports were prepared for the USFWS following each survey (HELIX 2006f, 2009f).

2.2.11 Burrowing Owl

Burrowing owl surveys were previously conducted for the EOMSP by EDAW in 2001 (EDAW 2001b), for the Otay Business Park project in 2004 (HELIX 2006a), for the Otay Crossings project in 2005 (HELIX 2006b), for the SR-11 Highway Project by URS in 2005 (URS 2005) and for the proposed project in 2006 (HELIX 2006g; Appendix B). Additionally, burrowing owl observations were made during the 2006 and 2009 Quino surveys and special status plant species surveys for the proposed project (HELIX 2006e, 2009e).

Since a large amount of owl data already existed for the project area, the 2009 burrowing owl survey (HELIX 2009g; Appendix B) included locating all previously observed owls or owl burrows to determine their current status (e.g., family group, active burrow, or individual owl) and then searching for and documenting any additional owls or burrows that were not recorded in the past. The 2009 burrowing owl survey consisted of four site visits on separate days according to survey methods in the Burrowing Owl Survey Protocol and Mitigation Guidelines (California Burrowing Owl Consortium 1993).

Burrowing owl habitat was examined with the aid of binoculars while walking approximate parallel transects through the habitat. Potential owl habitat was surveyed for burrowing owls and potential burrows or perches that could be used by the birds. Burrowing owls are known to occupy California ground squirrel (*Spermophilus beecheyi*) burrows; therefore, particular attention was paid to any areas along fence lines or other locations where squirrel activity has been observed, was observed, or was likely to occur. Dirt piles and drainages, as well as other man-made structures, were also carefully examined as these sites can often provide cavities that could support the species. The determination of owl presence was made by direct observation of the animal or by owl sign such as, but not necessarily limited to, excavated soil, whitewash (excrement), castings (pellets), and/or feathers. The results of the burrowing owl surveys were reported to CDFG (HELIX 2009g).

2.2.12 Wildlife Corridor Study

Wildlife corridors were identified based on knowledge of the region gathered during field work for the proposed project and other projects in the City of San Diego (City), County of San Diego (County), and City of Chula Vista in the vicinity of the proposed project. Additionally, topographic maps; regional vegetation maps and MSCP maps showing preserve areas, habitat linkages and Biological Resource Core Areas (BRCAs) were reviewed to identify areas where wildlife movement may be concentrated due to natural (e.g., a canyon) or artificial (e.g., development) constraints. No animal tracking or trapping was conducted. On April 20, 2009, HELIX biologists visited at least one location within each potential corridor to verify the information gathered to that point and to ascertain whether each potential corridor is a local corridor or a regional corridor (Appendix B).

2.3 Personnel and Survey Dates

All of the current surveys for the proposed project were conducted from March 23, 2006 to September 23, 2009. Refer to Appendix B for the personnel and dates for each survey. Prior surveys were conducted in 2000, 2001, 2004, and 2005 on land either completely within the BSA or partly within the BSA (EDAW 2001a, 2001b; HELIX 2002, 2006a through 2006g, 2009a through 2009g; URS 2005). Surveys requiring an individual to be in possession of a Section 10(a)(1)(A) Recovery Permit (under the federal ESA of 1973, as amended) were conducted

under HELIX's Permit Number TE 778195. These surveys included those for the fairy shrimp, Quino, and coastal California gnatcatcher.

2.4 Agency Coordination and Professional Contacts

In December 2008, the County Department of Public Works, the U.S. Environmental Protection Agency, and USFWS each sent a letter to Caltrans regarding their review of the Notice of Intent to prepare the Tier II EIR/EIS (Appendix A). Each had comments regarding biological resources, and those comments were taken into consideration in the determination of what studies to conduct for the proposed project and in the preparation of this NES.

On September 12, 2006, HELIX sent a letter to Kurt Roblek at the USFWS requesting information regarding candidate, proposed, or threatened or endangered species that have the potential to occur within the BSA for the proposed project. A response was received from Therese O'Rourke of the USFWS, dated October 6, 2006 (Appendix A). In October 2008, Caltrans sent a request for an updated species list for Tier II. Susan Wynn of USFWS replied on November 7, 2008 that the October 6, 2006 letter should continue to be used for the proposed project. On October 20, 2010, the USFWS indicated that the list is still valid.

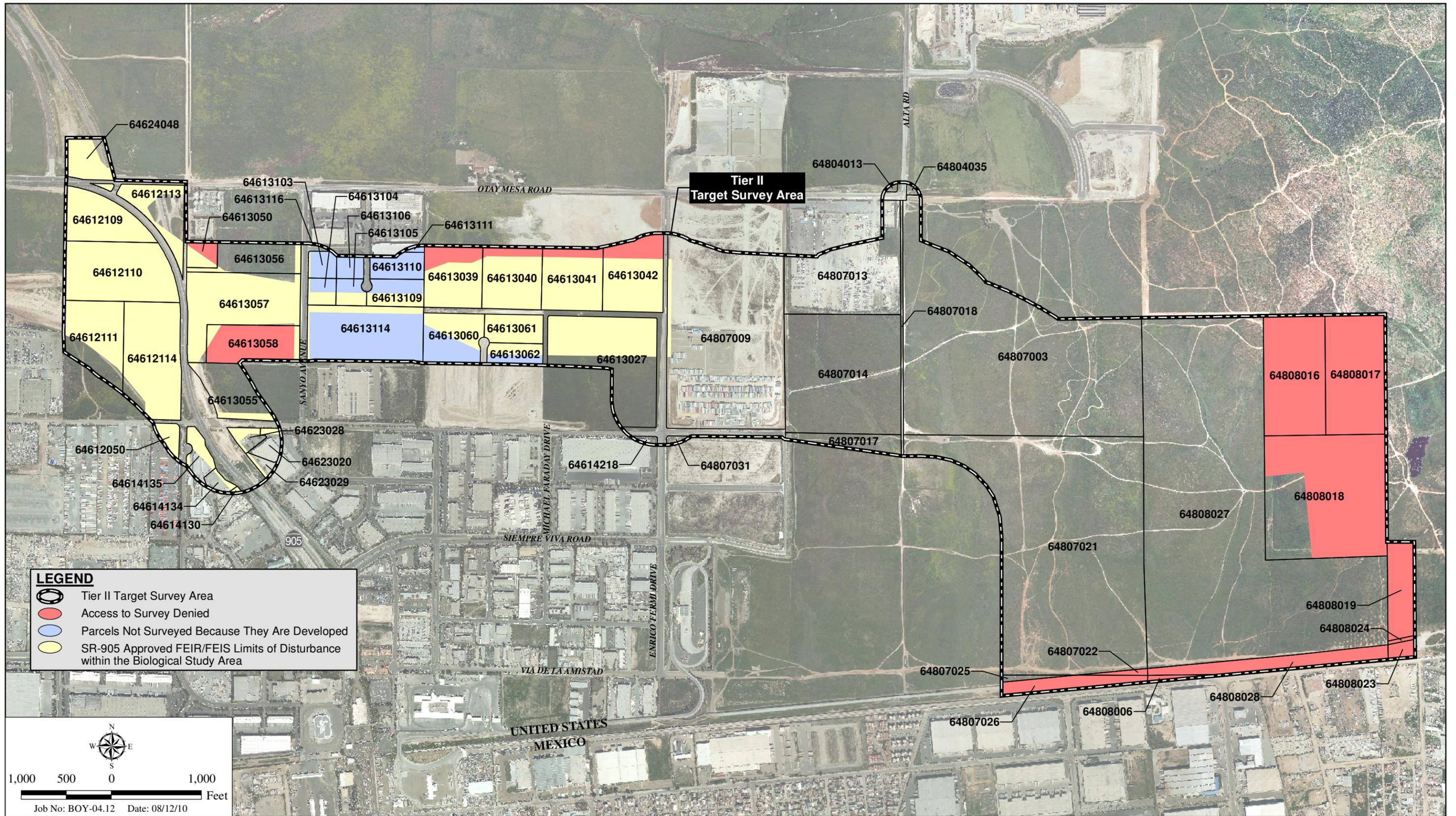
A focused survey report was sent to USFWS following the completion of each of the surveys for which such a report is required per USFWS protocol: San Diego and Riverside fairy shrimp, Quino, and coastal California gnatcatcher. The results of burrowing owl surveys were reported to CDFG.

Additional agency coordination has occurred during bi-monthly Interagency Working Group meetings at Caltrans District 11 offices. Meetings were initiated in May 2006 and have been attended by representatives of the various stakeholder agencies, including USFWS (Susan Wynn), CDFG (Pam Beare or Dave Mayer) and USACE (Mark Cohen).

In addition, these same representatives have been invited to join Project Development Team meetings on an approximately monthly basis, since 2006. Finally, these agencies have been Participating or Cooperating Agencies through the Safe, Accountable, Flexible, Efficient Transportation Equity Act – A Legacy for Users (SAFETEA-LU) during both Phase I and Tier II environmental processes.

2.5 Limitations That May Influence Results

The surveys followed standard protocols and were conducted at the appropriate times of year under appropriate weather conditions, when feasible. The surveys did not include trapping for reptiles or mammals. Because most of the survey time was spent in daylight, most nocturnal animals were not directly observed, and some other species may occur in such low numbers that they could have been missed. Additionally, access was denied to certain parcels, so biological surveys could not be conducted on them (Figure 2-2). For these reasons, other means such as database searches, habitat requirements, previous survey information (from when access was permitted), review of aerial photography, and knowledge of species distribution were used to determine the potential occurrence of habitats and special status species in the BSA.



2008/2009 Survey Areas

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II NATURAL ENVIRONMENT STUDY

Figure 2-2

Chapter 3. Results: Environmental Setting

3.1 Description of the Existing Biological and Physical Conditions

3.1.1 Biological Study Area

The BSA encompasses an area that accommodates the estimated construction limits of all the project alternatives/variations with a buffer of 300 ft (Figures 1-2 and 1-3), except along the U.S.-Mexico international border where the border itself is the edge of the BSA. The majority of the land in the BSA is privately held, and permission to enter was required from those property owners. Permission to enter some areas was not granted so those areas were not surveyed (Figure 2-1).

The BSA is generally bounded by Otay Mesa Road to the north, the U.S.-Mexico international border to the south, Otay Mountain foothills to the east, and the future SR-11/SR-905 Interchange and SR-905 up to Britannia Boulevard to the west. The majority of the eastern portion of the BSA is undeveloped, while many of the western parcels are developed or in the process of being developed. Land use to the south in Tijuana, Mexico and to the west is commercial/industrial. The properties to the north and east are largely undeveloped. Historical land use on the undeveloped parcels appears to be agricultural. Presently, the eastern portion of the BSA (primarily east of Alta Road) is subject to frequent U.S. Border Patrol and military training activities, illegal off-road vehicle activity, and various surveying/maintenance activities by contractors and utility personnel (e.g., border fence repair contractors, San Diego Gas and Electric personnel, and Otay Water District personnel).

The western BSA area includes portions of the existing R/W for SR-905 and SR-125, as well as land within the approved SR-905 Final Environmental Impact Statement/Final Environmental Impact Report (FEIS/FEIR) limits of disturbance, for which permits have already been issued (Figures 1-2, 1-3, and 1-4). Some of these areas are currently being graded and the entire area is considered to be developing with the SR-905 project, and no biological resources are mapped or considered to be impacted within the existing highway R/W and approved limits of disturbance for this area of the proposed project.

3.1.1.1 Topography

The BSA consists of gently undulating hills and mesas, and includes several drainages that convey water south into Mexico. Elevations in the BSA range from approximately 490 ft above mean sea level near the southern boundary of the BSA to approximately 640 ft above mean sea level along the northeastern boundary of the BSA.

3.1.1.2 Soils

Eight soil types are mapped in the BSA: Diablo clay, 2-9 percent slopes (DaC); Diablo clay, 9-15 percent slopes (DaD); Huerhuero loam, 2-9 percent slopes (HrC); Huerhuero loam, 5-9 percent slopes, eroded (HrC2); Huerhuero loam, 9-15 percent slopes (HrD); Huerhuero loam, 9-15 percent slopes, eroded (HrD2); Salinas clay, 0-2 percent slopes (ScA); and San Miguel-Exchequer rocky silt loams, 9-70 percent slopes [SnG; (Bowman 1973)]. The Diablo series consists of upland soils that are well-drained, moderately deep to deep clays derived

from soft, calcareous sandstone and shale. The Huerhuero series consists of moderately well-drained loams that have a clay subsoil. These soils developed in sandy marine sediments. The Salinas series consists of well-drained and moderately well-drained clay loams that formed in sediments washed from Diablo, Linne, Las Flores, Huerhuero, and Olivenhain soils. The San Miguel series consists of well-drained, shallow to moderately deep silt loams that have a clay subsoil and are derived from metavolcanic rock (Bowman 1973).

3.1.2 Biological Conditions in the BSA

This section describes the natural communities, vegetation communities, plant and animal species, wildlife corridors, aquatic resources, and invasive species present in the BSA outside the existing SR-905/SR-125 R/W and additional SR-905 approved FEIS/FEIR limits of disturbance.

3.1.2.1 Natural Communities

Three natural community types occur in the BSA: wetland, shrubland, and grassland.

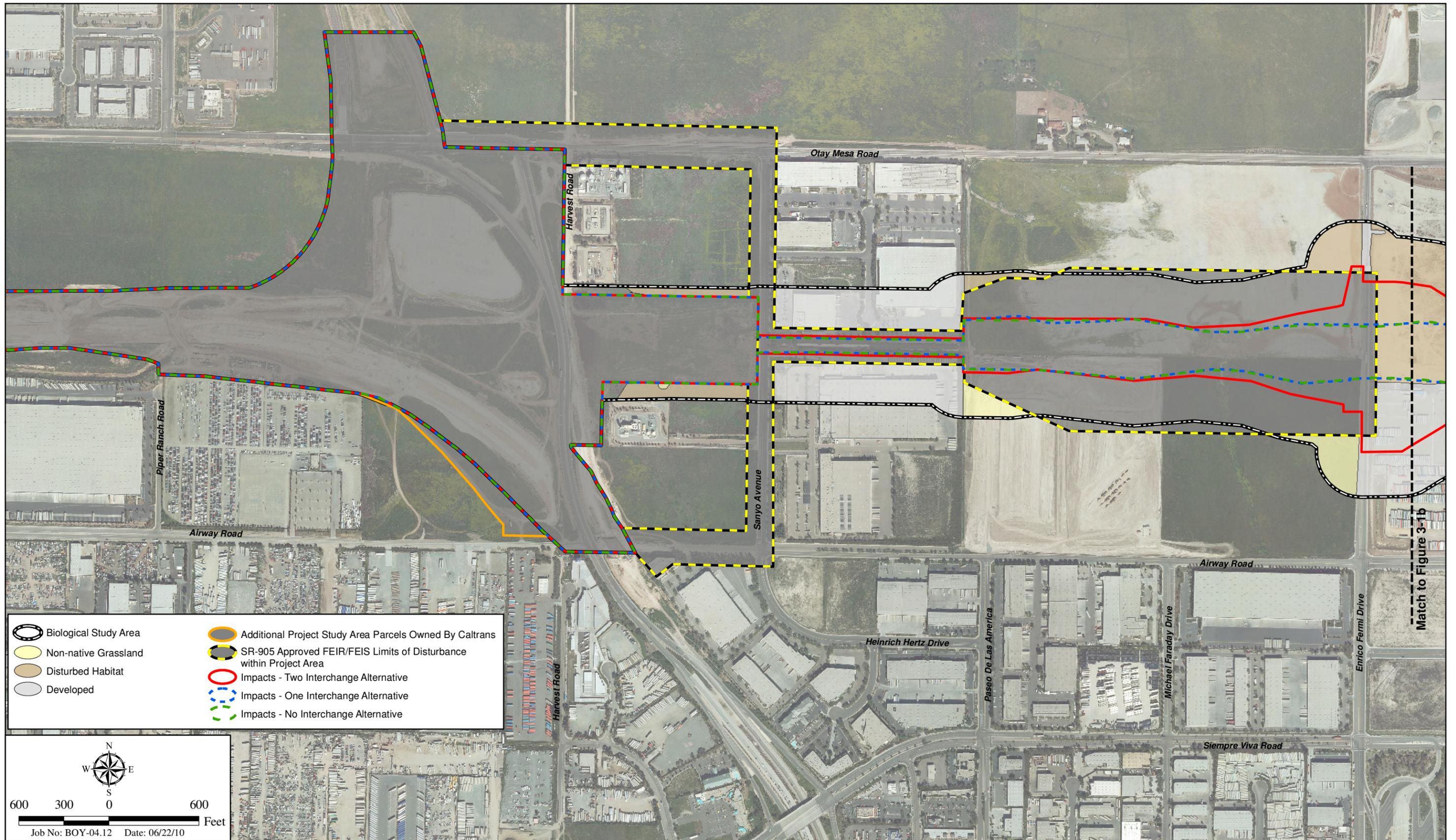
Generally, wetlands are lands where saturation with water is the dominant factor determining the nature of soil development and the types of plant and animal communities living in the soil and on its surface (Cowardin 1979). Examples of wetlands in the BSA include mule fat scrub-disturbed, freshwater marsh, and disturbed wetland.

Shrubland is a natural community dominated by woody shrubs. A shrub is a perennial, woody plant that branches at ground level to form several stems. Shrublands form in several different biomes, and may be either a permanent habitat type that is stable over time, or a transitional one, caused when another habitat type is disturbed by natural or human causes, such as fire. Diegan coastal sage scrub is the shrubland found in the BSA.

Grassland is land where grass or grass-like vegetation grows and is the dominant form of plant life. Grassland in the BSA consists primarily of non-native grassland.

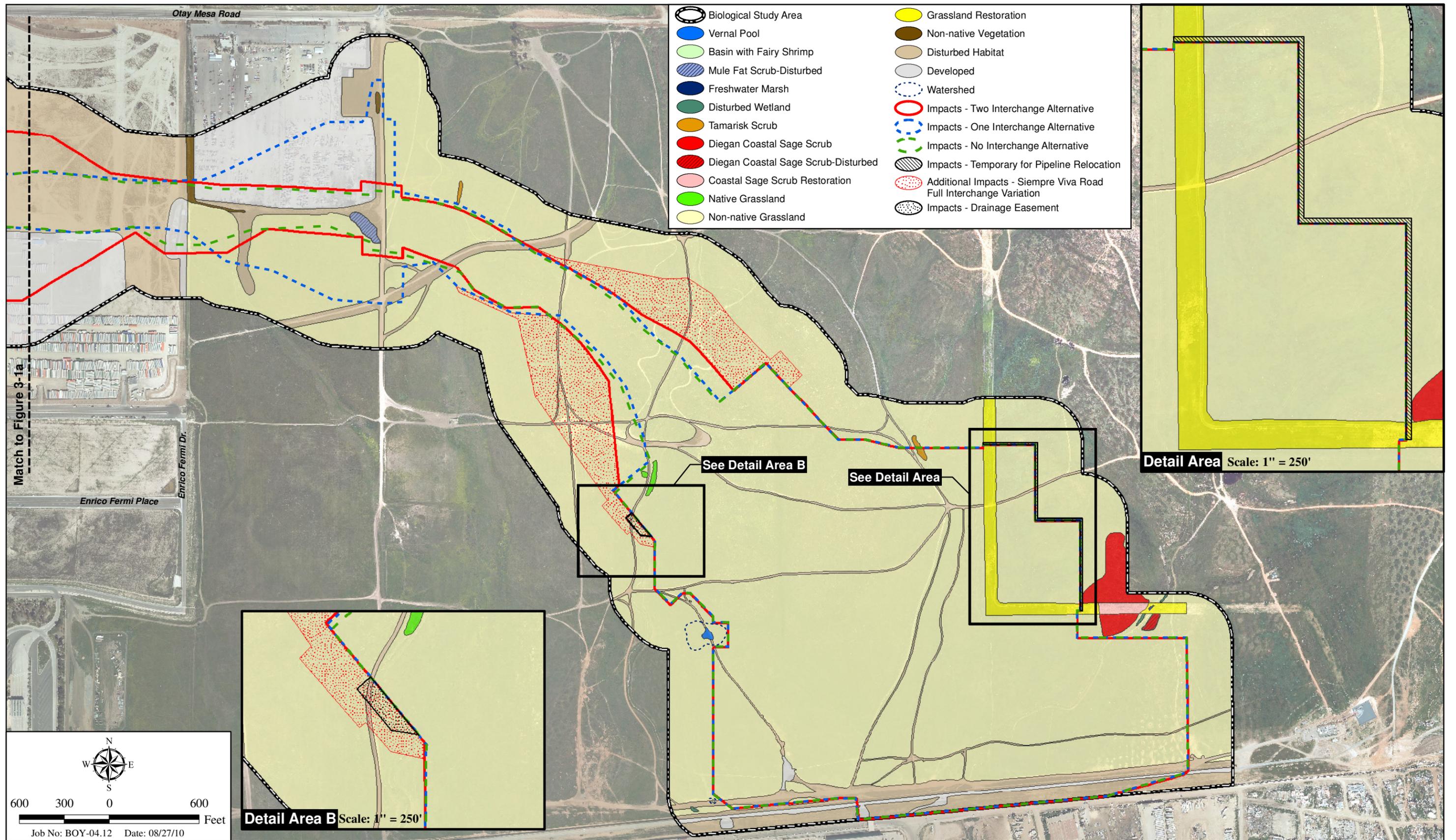
3.1.2.2 Vegetation Communities

Sixteen vegetation communities occur in the BSA, as listed in Table 2 and described below (Figures 3-1a and 3-1b). Twelve of these vegetation communities (indicated by an asterisk in Table 2) are considered regional habitats of concern. For example, the BSA provides a large expanse of grassland habitats that offer foraging and/or nesting habitat for special status birds of prey such as the burrowing owl, northern harrier (*Circus cyaneus*) and white-tailed kite (*Elanus leucurus*). The BSA is also one of the last remaining areas in the County where a breeding burrowing owl population still occurs (Unitt 2004). The BSA also supports Diegan coastal sage scrub, a habitat that can support a number of threatened, endangered, and rare vascular plants as well as several bird and reptile species that are federally listed or are candidates for federal listing. Finally, the BSA supports other sensitive vegetation communities/habitats of concern including basins with federally listed fairy shrimp and wetlands.



Vegetation/Impacts Map

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II NATURAL ENVIRONMENT STUDY



Vegetation/Impacts Map

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II NATURAL ENVIRONMENT STUDY

Figure 3-1b

Vernal Pool*	Coastal Sage Scrub Restoration*
Basin with Fairy Shrimp*	Native Grassland*
Freshwater Marsh*	Non-native Grassland*
Mule Fat Scrub-Disturbed*	Non-native Grassland-Disturbed*
Disturbed Wetland*	Grassland Restoration*
Tamarisk Scrub	Non-native Vegetation
Diegan Coastal Sage Scrub*	Disturbed Habitat
Diegan Coastal Sage Scrub-Disturbed*	Developed

*A regional habitat of concern.

Vernal Pool

Vernal pools are temporary wetland habitats formed under specific edaphic, topographic, and climatic conditions. The edaphic conditions include a subsurface hardpan, or claypan, characterized by very slow permeability that inhibits the downward percolation of water. The landscape conditions usually consist of relatively level areas (e.g., mesas) with low hummocks (mima mounds) and shallow basins (vernal pools). The climate consists of cool, wet winters and hot, dry summers. Under these conditions, water ponds in the depressions during the rainy season, gradually evaporates over time, and is completely dry over the summer and fall. Vernal pools are also identified by having at least one indicator plant species (USACE 1997; Zedler 1987). Vernal pools also occur in dirt roads and other disturbed places that have the seasonal hydrology of vernal pools. These road pools often exist in historic vernal pool areas. They may, however, also occur in non-historic locations due to soil compaction, removal of native vegetation, etc. Bauder (1987) claimed that historical estimates of vernal pool habitat in the County consisted of 28,595 acres and that more than 97 percent of vernal pool habitat has been lost to urbanization and agricultural conversion since 1986. Remaining vernal pool habitat is mostly isolated, degraded, and/or fragmented. One vernal pool occurs in the eastern portion of the BSA (Figure 3-1b).

Basin with Fairy Shrimp

Although basins by themselves are not resources of concern, two basins in the eastern portion of the BSA support federally listed endangered San Diego or Riverside fairy shrimp. As a result, these two basins are mapped as a distinct resource and are considered a regional habitat of concern (Figure 3-1b).

Freshwater Marsh

Freshwater marsh is dominated by perennial emergent monocots that can reach a height between 12 and 15 ft. This vegetation type occurs along the coast, and in coastal valleys near river mouths and around the margins of lakes and springs. These areas are permanently flooded by freshwater yet lack a significant current (Holland 1986). Freshwater marsh occurs in the eastern portion of the BSA (3-1b). Species observed in the freshwater marsh include broad-leaved cattail (*Typha latifolia*), slender creeping spike-rush (*Eleocharis montevidensis*), and rabbitsfoot grass (*Polypogon monspeliensis*). Wetland habitats are naturally limited, and remaining acreages can provide important island habitats for migrant birds. Other important wetland habitat functions include: flood conveyance, flood storage, and sediment control;

providing surface water and insects for fish, amphibians, and birds; providing spawning grounds for aquatic fauna; providing habitat for rare and endangered species; and controlling water quality and erosion. Wetland habitat alteration in southern California has occurred because of filling, draining, vegetation clearing, diverting water, impounding water, increasing or decreasing nutrient levels, channelizing, increasing sediment loading, lowering of water tables, human recreational activities, gravel mining, proliferation of exotic species, grazing, and urban development (Bowler 1990).

Mule Fat Scrub-Disturbed

Mule fat scrub is a shrubby, riparian scrub community dominated by mule fat (*Baccharis salicifolia*) and interspersed with shrubby willows (*Salix* spp.). Mule fat scrub-disturbed in the BSA is considered “disturbed” because it also supports a high percentage of cover by non-native species including tamarisk (*Tamarix* sp.), scarlet pimpernel (*Anagallis arvensis*), mustard (*Brassica* sp.), bull thistle (*Cirsium vulgare*), bristly ox-tongue (*Picris echioides*), and prickly lettuce (*Lactuca serriola*). Mule fat scrub-disturbed occurs just south of the auto auction lot at Otay Mesa Road and Alta Road (Figure 3-1b). Riparian communities are naturally limited, as they are situated along stream courses and adjacent stream banks. They perform all of the important habitat functions of wetlands (described above for freshwater marsh), and they can provide corridors for wildlife movement. Riparian habitat alteration in southern California has occurred for the same reasons as those listed above for freshwater marsh.

Disturbed Wetland

This vegetation community is dominated by exotic wetland species that invade areas that have been previously disturbed or have undergone periodic disturbances. The composition of disturbed wetland is highly variable based on the hydrology, soils, and type and frequency of disturbance. Typical species observed in this community in the BSA include rabbitsfoot grass, curly dock (*Rumex crispus*), and Italian ryegrass (*Lolium multiflorum*). Disturbed wetland occurs along the U.S.-Mexico international border and in the eastern portion of the BSA (Figure 3-1b). Disturbed wetland is naturally limited, performs important wetland functions, and has been altered in southern California as described above for freshwater marsh.

Tamarisk Scrub

Tamarisk scrub is typically comprised of shrubs and/or small trees of exotic tamarisk species but also may support willows, salt bushes (*Atriplex* spp.), and coastal salt grass (*Distichlis spicata*). This vegetation community occurs along intermittent streams in areas where high evaporation rates increase the salinity level of the soil. Tamarisk is a phreatophyte, a plant that can obtain water from an underground water table that is too far below the surface for many other species to access. Because of its deep root system and high transpiration rates, tamarisk can substantially lower the water table to below the root zone of native species, thereby competitively excluding them. As a prolific seeder, it may rapidly displace native species within a drainage (Holland 1986). Tamarisk scrub occurs in two patches in the eastern portion of the BSA (Figure 3-1b).

Diegan Coastal Sage Scrub (including disturbed)

Coastal sage scrub is one of the two major shrub types that occur in California. This habitat type occupies xeric sites characterized by shallow soils. Sage scrub is dominated by low subshrubs, many of which are drought-deciduous, an adaptation that allows them to withstand

prolonged summer and fall drought periods (Holland 1986). Sage scrub species have relatively shallow root systems and open canopies, which allow for a substantial, seasonal, herbaceous plant component. Diegan coastal sage scrub in the BSA contains plant species such as California sagebrush (*Artemisia californica*), San Diego County viguiera (*Viguiera laciniata*), and California buckwheat (*Eriogonum fasciculatum*). The disturbed phase of this vegetation has a lower cover of shrubs; the shrub cover has been replaced with non-native grassland species. Diegan coastal sage scrub (including disturbed) occurs on gentle slopes in the eastern-most portion of the BSA (Figure 3-1b). Coastal sage scrub (including disturbed) supports a number of state and federally listed endangered, threatened, and rare vascular plants, as well as several bird and reptile species that are federally listed or are candidates for federal listing. This habitat has long been under development pressure, originally from agriculture and in more recent decades from urbanization and human population growth. At the time Natural Community Conservation Planning (NCCP) was instituted in 1991, the USFWS estimated that about 343,000 to 444,000 acres of coastal sage scrub remained in California, representing about 14 to 18 percent of its historic extent (Pollak 2001). A more recent source, California Wildlife Action Plan prepared by CDFG, also notes that as of the early 1990s, about 400,000 acres of coastal sage scrub remained, representing no more than 18 percent of its historic extent (CDFG 2007). According to Oberbauer (1991), the historical reduction of sage scrub in the County is approximately 72 percent. The primary mechanisms for the loss of sage scrub within California have been grazing and, more recently, urbanization.

Coastal Sage Scrub Restoration

One area in the eastern portion of the BSA is in the process of being restored to coastal sage scrub following installation of a natural gas pipeline (Figure 3-1b). The restoration includes a combination of container stock and hydroseeding. There is currently low cover of sage scrub species in this area. This community is a regional habitat of concern for the same reasons as described for Diegan coastal sage scrub (including disturbed) above.

Native Grassland

Native grassland is a community dominated by species such as purple needlegrass (*Nassella pulchra*) or coastal saltgrass. The majority of this community in California has been displaced by non-native grassland dominated by introduced, annual species; however, native grasslands persist in some areas as small, isolated islands. Native grassland occurs in two small areas adjacent to a drainage in the east-central portion of the BSA (Figure 3-1b). These patches are dominated by coastal saltgrass intermingled with non-native upland grasses and forbs such as oats (*Avena* sp.) and mustard. Native grasslands are one of the most heavily impacted plant communities in California. The conversion from native to non-native grassland occurred so rapidly after European colonization that there is debate among ecologists as to the original species composition and physiognomy of this community when it was in a pristine condition.

Non-native Grassland (including disturbed)

Non-native grassland is a dense to sparse cover of annual grasses often associated with numerous species of showy-flowered, native, annual forbs. This association occurs on gradual slopes with deep, fine-textured, usually clay soils. This vegetation community covers the majority of the eastern portion of the BSA and small areas of the western portion of the BSA (Figures 3-1a and 3-1b). Typical species present include oats, red brome (*Bromus madritensis* ssp. *rubens*), ripgut grass (*Bromus diandrus*), filaree (*Erodium* spp.), Italian ryegrass, and mustard. Non-native grassland is the dominant vegetation community within the BSA. The

disturbed phase of this community (Figure 3-1a) supports a substantial cover of non-native forbs such as mustard. Non-native grassland (including disturbed) provides important foraging and/or nesting habitat for many special status birds of prey such as the burrowing owl, white-tailed kite, and northern harrier.

Grassland Restoration

Two areas in the eastern part of the BSA are in the process of being restored to grassland following installation of a natural gas pipeline (Figure 3-1b). The areas support a dense cover of broad-leaved, exotic forbs that have been killed with herbicide. This strip of weeds passes through non-native grassland and is marked by signs that identify it as a restoration area. Grassland restoration also provides important foraging and/or nesting habitat for many special status birds of prey.

Non-native Vegetation

Non-native vegetation supports plants that are naturalized or are persisting after having been planted. Hottentot fig (*Carpobrotus edulis*) occurs along slopes surrounding the auto auction lot west of Alta Road and is the most common constituent of this community and within the BSA (Figure 3-1b). A small patch of non-native vegetation also occurs west of Sanyo Avenue in the western portion of the BSA (Figure 3-1a).

Disturbed Habitat

Disturbed habitat includes unvegetated or sparsely vegetated areas, or areas supporting a preponderance of non-native plant species, particularly where the soil has been heavily compacted or where agricultural lands have been abandoned. Within the BSA, disturbed habitat west of Alta Road consists of abandoned agricultural lands, while disturbed habitat east of Alta Road consists primarily of dirt roads used by the U.S. Border Patrol and off-highway vehicles (Figures 3-1a and 3-1b). Russian thistle (*Salsola tragus*) is a common species of vegetated disturbed habitat in the BSA.

Developed

Developed land occurs where permanent structures or pavement have been installed or where landscaping is clearly maintained. Within the BSA, developed land west of Alta Road consists of an auto auction business and other commercial and industrial developments, lots under construction, and portions of various roads, including Otay Mesa Road, Enrico Fermi Drive, and Airway Road. Developed areas east of Alta Road cover only minimal amounts of land and consist of a small shade structure constructed between two dirt roads and a road and riprap between the two U.S.-Mexico international border fences (Figures 3-1a and 3-1b).

3.1.2.3 Dominant Plant Species

The dominant plant species in each vegetation community are listed in the community descriptions provided above. Since non-native grassland is the dominant community in the BSA, the dominant plant species are oats, red brome, ripgut grass, Italian ryegrass, and mustard.

3.1.2.4 Common Animal Species

The BSA is dominated by non-native grassland. The animals most commonly observed in the BSA, therefore, are those usually found in a non-native grassland community, especially on Otay Mesa, and include, but are not limited to, western meadowlark (*Sturnella neglecta*), grasshopper sparrow (*Ammodramus savannarum*), burrowing owl, and Botta's pocket gopher (*Thomomys bottae*).

3.1.2.5 Habitat Connectivity, Linkages, and Wildlife Corridors

Habitat Connectivity and Linkages

A review of California Essential Habitat Connectivity Data (CDFG 2010) shows that there are no Interstate Connections, Essential Connectivity Areas, or Natural Landscape Blocks within the BSA.

The eastern portion of the BSA consists primarily of non-native grassland and patches of Diegan coastal sage scrub (Figure 3-1b). The central and western portions of the BSA consist primarily of disturbed habitat and developed land (Figure 3-1a). The central and western portions of the BSA are largely surrounded by other land that is disturbed and developed (Figures 3-1a and 3.1-1b).

The eastern portion of the BSA is directly connected to large blocks of conserved lands to the east. Those conserved lands continue north and west but with no direct connection to the BSA (Figure 3-2). Conserved lands include MSCP BRCAs, MSCP Subarea preserves (i.e., County Preserve, City of Chula Vista Preserve, and City of San Diego Multi-Habitat Planning Area [MHPA]), and/or Bureau of Land Management Wilderness. There are no habitat linkages identified by the County, City of San Diego, or City of Chula Vista MSCP Subarea Plans within or near the BSA (Figure 3-2).

The conserved lands east of the BSA include the San Ysidro Mountains, Otay Mountain, and even farther east, Marron Valley. While the BSA presently provides a connection to these conserved lands with habitat to the south and west of the BSA, the area south and west of the BSA is planned for mixed industrial uses under the East Otay Mesa Business Park Specific Plan (EOMBPSP; County 2010a), with several active development proposals currently pending in this area. Furthermore, the County circulation element includes the extensions of Siempre Viva Road and Airway Road through this area as major roads (County 2010a). This area south and west of the BSA currently supports approximately 227 acres of non-native grassland that support the burrowing owl and numerous other non-listed, special status plant and animal species. This area also supports 15 road or vernal pools with federally listed endangered San Diego and/or Riverside fairy shrimp. While the proposed project would break up the connection between the area south and west of the BSA and habitat to the east of the BSA, this would be a short-term, temporary impact until the pending developments in that area are implemented (assuming SR-11 and the Otay Mesa East POE are constructed first), replacing much of the habitat surrounding the proposed project.

Immediately north of the BSA lies Otay Mesa Road and then land that is undeveloped, but disturbed, and appears to have been historically farmed. It presently supports non-native, weedy vegetation or is cleared of vegetation. Some development also occurs to the north along Alta Road including, but not limited to, several detention facilities and a state prison. These

developed or disturbed areas and Otay Mesa Road separate the BSA from the conserved lands to the north (Figure 3-2).

The conserved lands that continue to the northwest of the BSA include Otay Valley Regional Park and the Otay River Valley (and its tributaries Johnson Canyon and O'Neal Canyon). Continuing south from the Otay River Valley, west of the BSA, conserved lands continue west and then south to the U.S.-Mexico international border and include areas such as Dennery Canyon, Moody Canyon, and Spring Canyon (Figure 3-2).

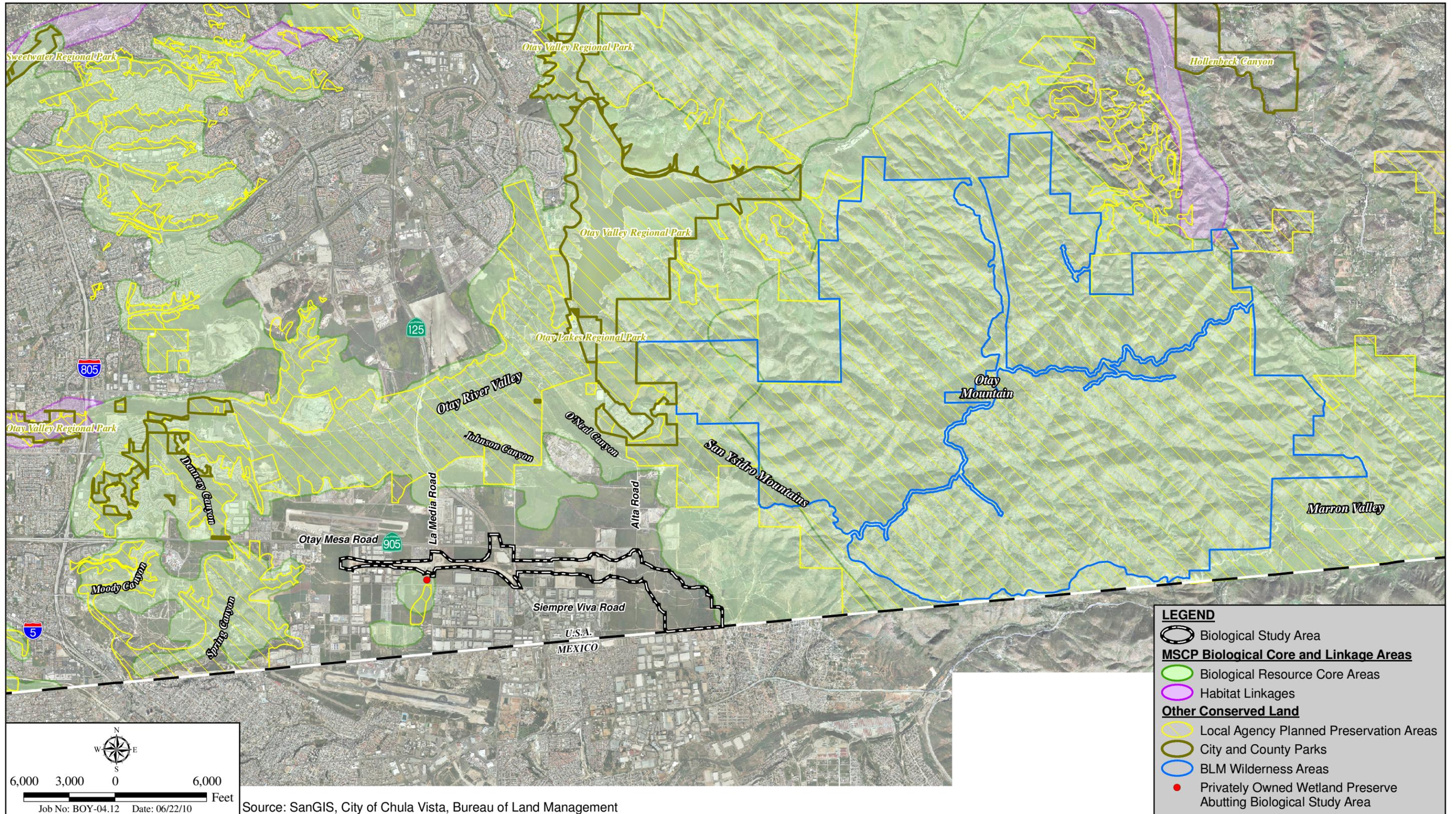
There is virtually no habitat connectivity from the BSA south to the U.S.-Mexico border, except along Alta Road (south and west of the BSA) where non-native grassland still occurs, as described above. This grassland habitat ends at the U.S.-Mexico international border fence. There is no habitat remaining in Mexico south of the BSA; it has all been developed, and the presence of the U.S.-Mexico international border fence precludes habitat connectivity between the U.S. and Mexico for most species (Figures 1-3b and 3-2).

Wildlife Corridors

Wildlife corridors represent areas where wildlife movement is concentrated due to natural or artificial constraints. Local corridors provide access to resources such as food, water, and shelter. Animals can use these corridors to travel between different habitats (i.e., riparian and upland habitats), which they may use at different points throughout their life histories. Regional corridors, on the other hand, link two or more large blocks of habitat, providing avenues for movement, dispersal, migration, as well as contact between otherwise distinct populations, including populations of large mammals such as mountain lion (*Felis concolor*), southern mule deer (*Odocoileus hemionus fuliginata*), bobcat (*Lynx rufus*), and coyote (*Canis latrans*).

The eastern portion of the BSA is a local corridor in that it provides access to resources for animals in the BSA, and it may provide access to resources for mammals that may enter the BSA, particularly from the east (Figure 3-3). The BSA does not connect large blocks of habitat, rather it is on the western edge of a large block of habitat. Therefore, it is not a regional corridor. The central and western portions of the BSA are disturbed and developed (or developing) and do not provide important resources for wildlife, so they are not considered part of a local corridor.

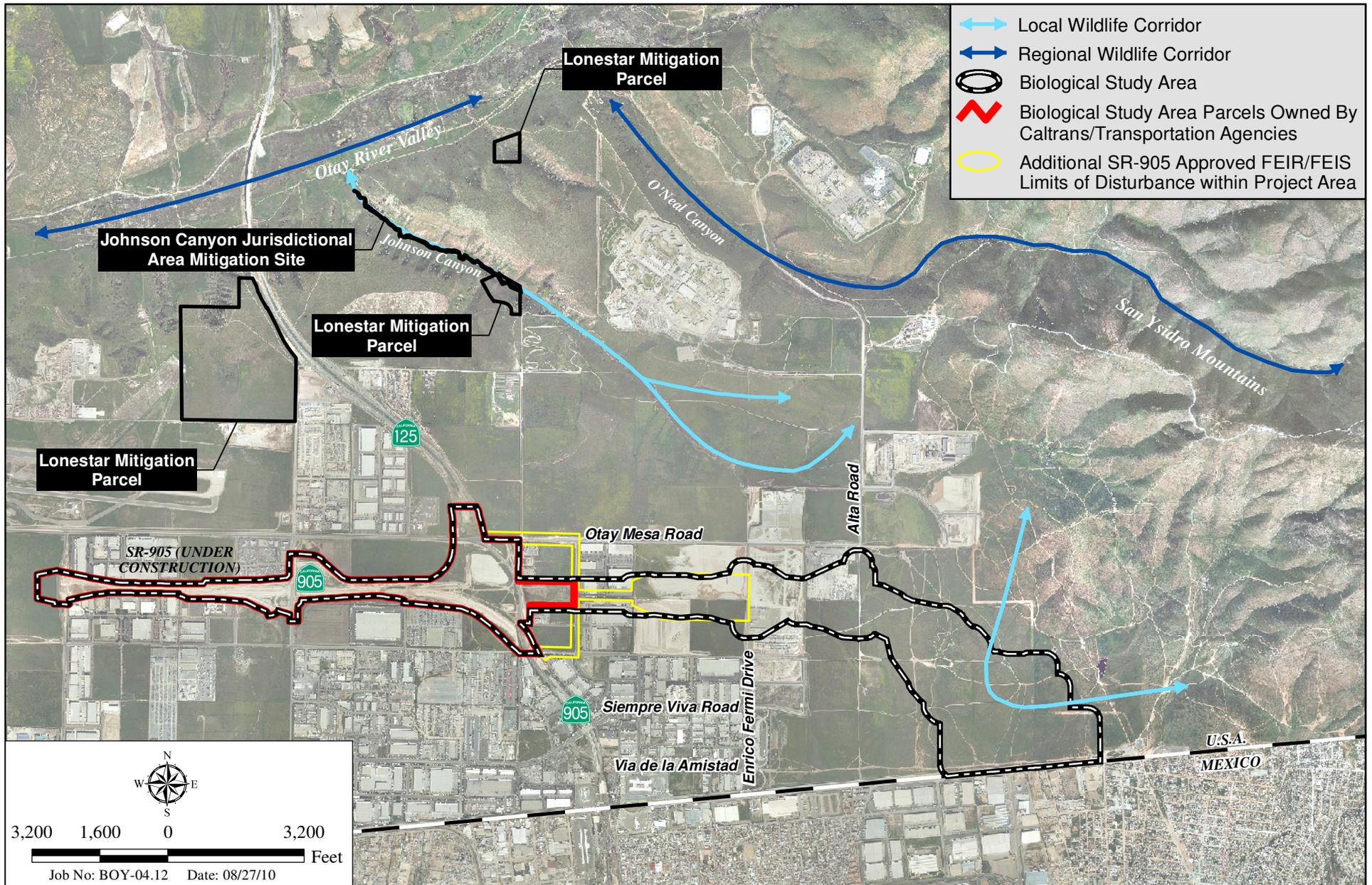
Vegetation in the eastern portion of the BSA is limited almost exclusively to non-native grassland on relatively flat topography that may not provide adequate cover for mammals such as southern mule deer and mountain lion (Figure 3-1b). The land east of the BSA supports sage scrub vegetation that provides greater vegetative cover, and it has greater topographic variation (i.e., canyons and hills) than the BSA (Figure 3-3). Sign of mountain lion and mule deer has not been observed in the BSA during multiple years of surveys for the proposed project, but the southern mule deer is known to occur in the Bureau of Land Management Otay Mountain Wilderness Area east of the BSA (Mock 2002; Figure 3-2). Coyote, a much more ubiquitous species, has been directly observed on numerous occasions in the eastern portion of the BSA during surveys for the proposed project. The eastern portion of the BSA is subject to daily and frequent U.S. Border Patrol and military training activities, illegal off-road vehicle activity, and various surveying/maintenance activities by contractors and utility personnel (e.g., border fence repair contractors and San Diego Gas and Electric and Otay Water District personnel). All of these activities, along with the lack of adequate vegetative cover render the eastern portion of the BSA of low quality as a local corridor. It is more likely that most local wildlife movement occurs east of the BSA. Following project implementation, wildlife approaching the project from the east would be prevented from entering the R/W due to the



Conserved Land

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II NATURAL ENVIRONMENT STUDY

Figure 3-2



Wildlife Corridors and Mitigation Parcels

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II NATURAL ENVIRONMENT STUDY

Figure 3-3

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six-foot high chain link fencing that would be installed at the edge of the R/W as part of the proposed project. Wildlife would likely turn back toward the east in this situation.

In the vicinity of the BSA, Johnson Canyon is a local corridor because it essentially ends near Alta Road where the road and several developments interrupt its connection between the Otay River Valley to the west and the San Ysidro Mountains to the east (Figure 3-3). Therefore, it does not connect large blocks of habitat. Johnson Canyon is a tributary drainage to the Otay River, and mammals can travel up and down Johnson Canyon from the Otay River Valley. Johnson Canyon supports grassland, coastal sage scrub, and riparian scrub vegetation that may provide suitable cover for large mammals and provide access to resources such as food, water, and shelter.

Alternatively, O'Neal Canyon, east of Johnson Canyon, is a regional corridor in that it provides a direct connection between two large blocks of habitat: the San Ysidro Mountains and the Otay River Valley (Figure 3-3). O'Neal Canyon supports coastal sage scrub, chaparral, and riparian scrub vegetation that may provide suitable cover for large mammals. Alta Road crosses O'Neal Canyon over a large fill, and this may be an impediment to wildlife movement through the canyon. While there is a large concrete box culvert present to allow water to travel down the canyon under Alta Road (and presumably for mammals to move through the culvert as well), this culvert appears to be very long (perhaps up to 500 ft long), and mammals may not choose to travel through it. It is possible that they could travel up the fill slope and cross over Alta Road instead. The Otay River Valley is also a regional corridor because it connects conserved blocks of habitat around Lower Otay Reservoir in Otay Valley Regional Park with conserved habitats to the west throughout the Otay River Valley (Figure 3-2), eventually connecting with south San Diego Bay. The Otay River Valley supports a variety of vegetation types including, but not limited to, grassland, riparian, wetland, sage scrub, and chaparral communities.

The BSA does not provide a corridor for regional wildlife movement; it only provides for local movement of mammals for access to resources such as food, water, and minimal shelter. Such movement is limited due to the lack of good vegetative cover, the impediment of the U.S.-Mexico international border fencing, and the high level of U.S. Border Patrol, military, off-highway vehicle, and other human activity (e.g., utility or other contractor activity) that occurs around the clock in the eastern portion of the BSA.

3.1.2.6 Aquatic Resources

Surface water within the BSA consists predominantly of ephemeral flows from storm events. The three main drainages in the eastern portion of the BSA (Figures 3-4 and 3-5) convey flows south from the San Ysidro Mountains into Mexico where they enter the Tijuana River. The Tijuana River eventually flows back into the U.S. and then into the Pacific Ocean.

Five aquatic habitat types under the jurisdiction of the USACE and/or CDFG occur in those portions of the BSA that have not been previously permitted for development: mule fat scrub-disturbed, freshwater marsh, tamarisk scrub, disturbed wetland, and non-wetland WUS/CDFG streambed (Figures 3-4 and 3-5). All of these features are located east of Enrico Fermi Drive.

Areas under USACE jurisdiction consist of freshwater marsh and disturbed wetland that are wetlands and Drainages A, B, and C that are non-wetland WUS (Figure 3-4).

Areas under CDFG jurisdiction consist of mule fat scrub-disturbed, freshwater marsh, tamarisk scrub, and disturbed wetland that are wetlands, as well as Streambeds A through E (Figure 3-5).

3.1.2.7 Invasive Species

Many of the non-native plant species in the BSA occur because they invaded following previous site disturbances (possibly grazing, farming, and/or fire). Some of the most invasive, non-native species observed in the BSA include the non-native grasses, mustard, Russian thistle, and tamarisk; the latter of which occurs in drainages in the BSA. In wet areas like freshwater marsh, invasive, non-native species include such plants as curly dock. Table C-2 in Appendix C identifies the invasive or noxious species observed in the BSA.

3.2 Regional Species of Concern

Despite the disturbed nature of the majority of the BSA (i.e., it is dominated by a non-native vegetation community), the BSA supports numerous listed and other special status plant and animal species and includes designated critical habitat for federally listed species: San Diego fairy shrimp and Quino, both of which have been detected in the BSA. The BSA also supports a vernal pool, a highly sensitive habitat, along with vernal pool-associated listed plant and animal species. Tables 3 and 4 present the listed and non-listed special status plant and animal species and critical habitat potentially occurring or known to occur in the BSA.

**Table 3
LISTED SPECIES AND CRITICAL HABITAT POTENTIALLY OCCURRING
OR KNOWN TO OCCUR IN THE BSA**

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/Absent	Rationale*
San Diego thornmint	<i>Acanthomintha ilicifolia</i>	FT, SE, CNPS List 1B.1, MSCP Narrow Endemic, County Sensitive	Chaparral, sage scrub, valley/foothill grassland, and in the vicinity of vernal pools on clay soil	HP	Potential habitat present
Otay tarplant	<i>Deinandra conjugens</i>	FT, SE, CNPS List 1B.1, MSCP Narrow Endemic, County Sensitive	Clay soils in grasslands or open sage scrub	HP	Detected more than 500 ft north of the BSA (prior to 2006)
San Diego button-celery	<i>Eryngium aristulatum</i> var. <i>parishii</i>	FE, SE, CNPS List 1B.1, County Sensitive	Vernal pools	HP, P	Detected (2006)
Willow monardella	<i>Monardella viminea</i>	FE, SE, CNPS List 1B.1, MSCP Narrow Endemic, County Sensitive	Rocky washes in chaparral, sage scrub, and riparian communities; known from only three locations in San Diego County, all in the Miramar area	HP	Potential habitat present
Spreading navarretia	<i>Navarretia fossalis</i>	FT, CNPS List 1B.1, County Sensitive	Chenopod scrub, marshes, swamps, playas, vernal pools	HP, P	Detected (2009)

Table 3 (cont.)
LISTED SPECIES AND CRITICAL HABITAT POTENTIALLY OCCURRING
OR KNOWN TO OCCUR IN THE BSA

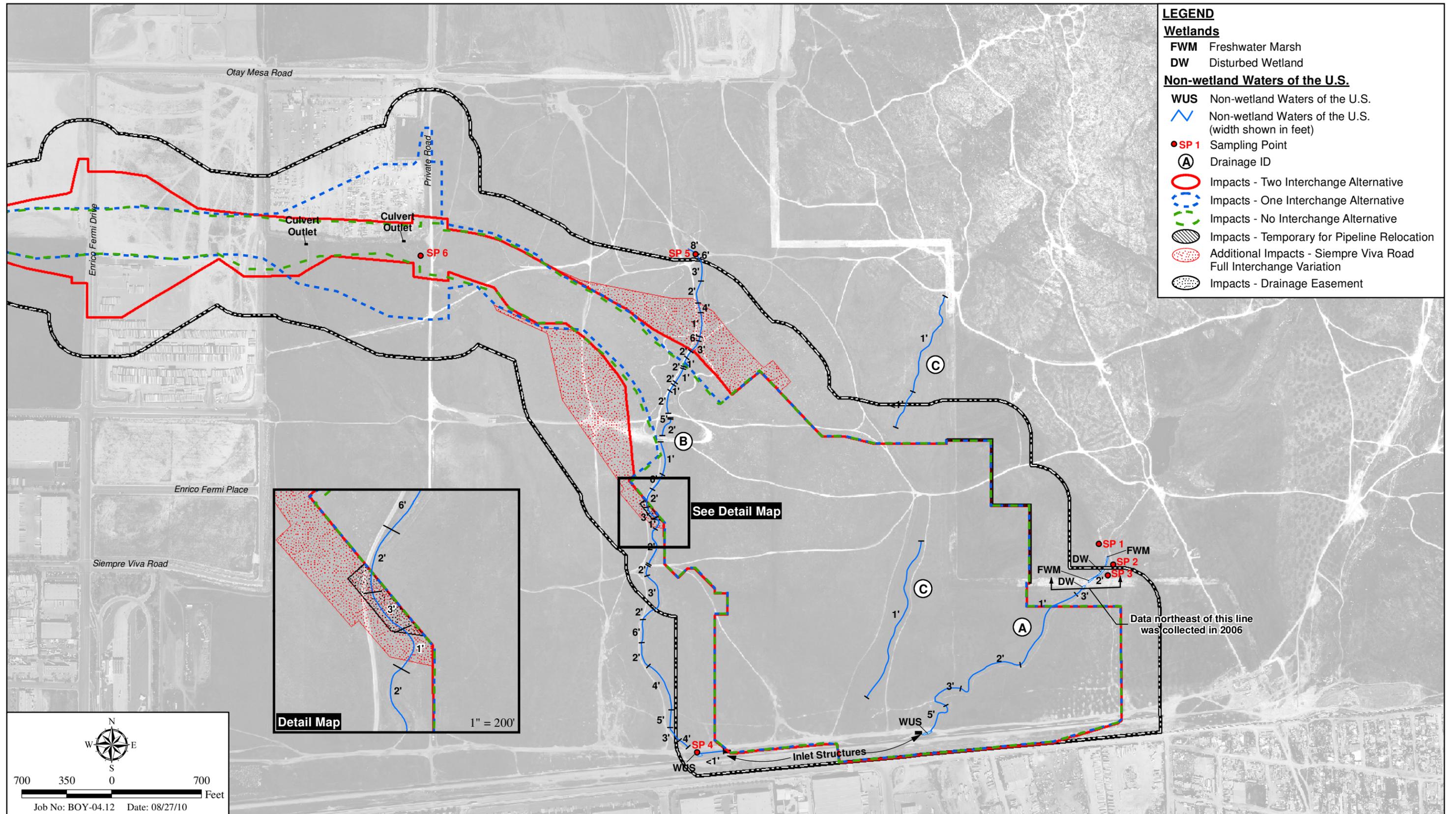
Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/AbSENT	Rationale*
California orcutt grass	<i>Orcuttia californica</i>	FE, SE, CNPS List 1B.1, County Sensitive	Vernal pools	HP	Potential habitat present
Otay mesa mint	<i>Pogogyne nudiuscula</i>	FE, SE, CNPS List 1B.1, County Sensitive	Vernal pools	HP	Potential habitat present
San Diego fairy shrimp	<i>Branchinecta sandiegonensis</i>	FE, MSCP Narrow Endemic, County Sensitive	Vernal pools or other water-holding basins	HP, P, CH	Detected in one basin and freshwater marsh in the BSA (prior to 2006) and in the vernal pool in the BSA (2009)
Otay mesa mint	<i>Pogogyne nudiuscula</i>	FE, SE, CNPS List 1B.1, County Sensitive	Vernal pools	HP	Potential habitat present
San Diego fairy shrimp	<i>Branchinecta sandiegonensis</i>	FE, MSCP Narrow Endemic, County Sensitive	Vernal pools or other water-holding basins	HP, P, CH	Detected in one basin and freshwater marsh in the BSA (prior to 2006) and in the vernal pool in the BSA (2009)
Riverside fairy shrimp	<i>Streptocephalus woottoni</i>	FE, MSCP Narrow Endemic, County Sensitive	Vernal pools or other water-holding basins	HP, P	Detected in one basin in the BSA (2009)
Quino checkerspot butterfly	<i>Euphydryas editha quino</i>	FE, MSCP Narrow Endemic, County Sensitive	Primary larval host plants in San Diego are dwarf plantain at lower elevations, woolly plantain (<i>P. patagonica</i>) and white snapdragon (<i>Antirrhinum coulterianum</i>) at higher elevations; owl's clover is considered a secondary host plant if primary host plants have senesced; potential habitat includes vegetation	HP, P, CH	Detected (prior to 2006)

**Table 3 (cont.)
LISTED SPECIES AND CRITICAL HABITAT POTENTIALLY OCCURRING
OR KNOWN TO OCCUR IN THE BSA**

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/Absent	Rationale*
			communities with areas of low-growing and sparse vegetation; these habitats include open stands of sage scrub and chaparral, adjacent open meadows, old foot trails, and dirt roads		
Arroyo toad	<i>Bufo</i> (proposed by the USFWS to be changed to <i>Anaxyrus californicus</i>)	FE, SSC, MSCP Narrow Endemic, County Sensitive	Restricted to riparian environments in the middle reaches of streams; known to breed, forage, and/or aestivate in aquatic, riparian, coastal sage scrub, oak, and chaparral habitats; thought to be restricted to the headwaters of large streams with persistent water from March to mid-June that have shallow, gravelly pools and adjacent sandy terraces	A	No habitat present; no further work needed
Southwestern willow flycatcher	<i>Empidonax traillii extimus</i>	FE, SE, MSCP Narrow Endemic, County Sensitive	Restricted to riparian woodlands along streams and rivers with mature, dense stands of willows, cottonwoods (<i>Populus</i> spp.) or smaller, spring fed or boggy areas with willows or alders (<i>Alnus</i> spp.)	A	No habitat present; no further work needed
Coastal California gnatcatcher	<i>Poliioptila californica californica</i>	FT, SSC, County Sensitive	Coastal sage scrub	HP	Detected 1,125 ft north of the BSA (2006)
Least Bell's vireo	<i>Vireo bellii pusillus</i>	FE, SE, MSCP Narrow Endemic, County Sensitive	Riparian habitats that feature dense vegetative cover near the ground and a dense, stratified canopy; typically, it is associated with southern willow scrub, cottonwood forest, mule fat scrub, sycamore alluvial woodland, coast live oak riparian forest, arroyo willow riparian forest, wild blackberry, or mesquite in desert localities	A	No habitat present; no further work needed

*For the year detected, the most current year of detection is provided.

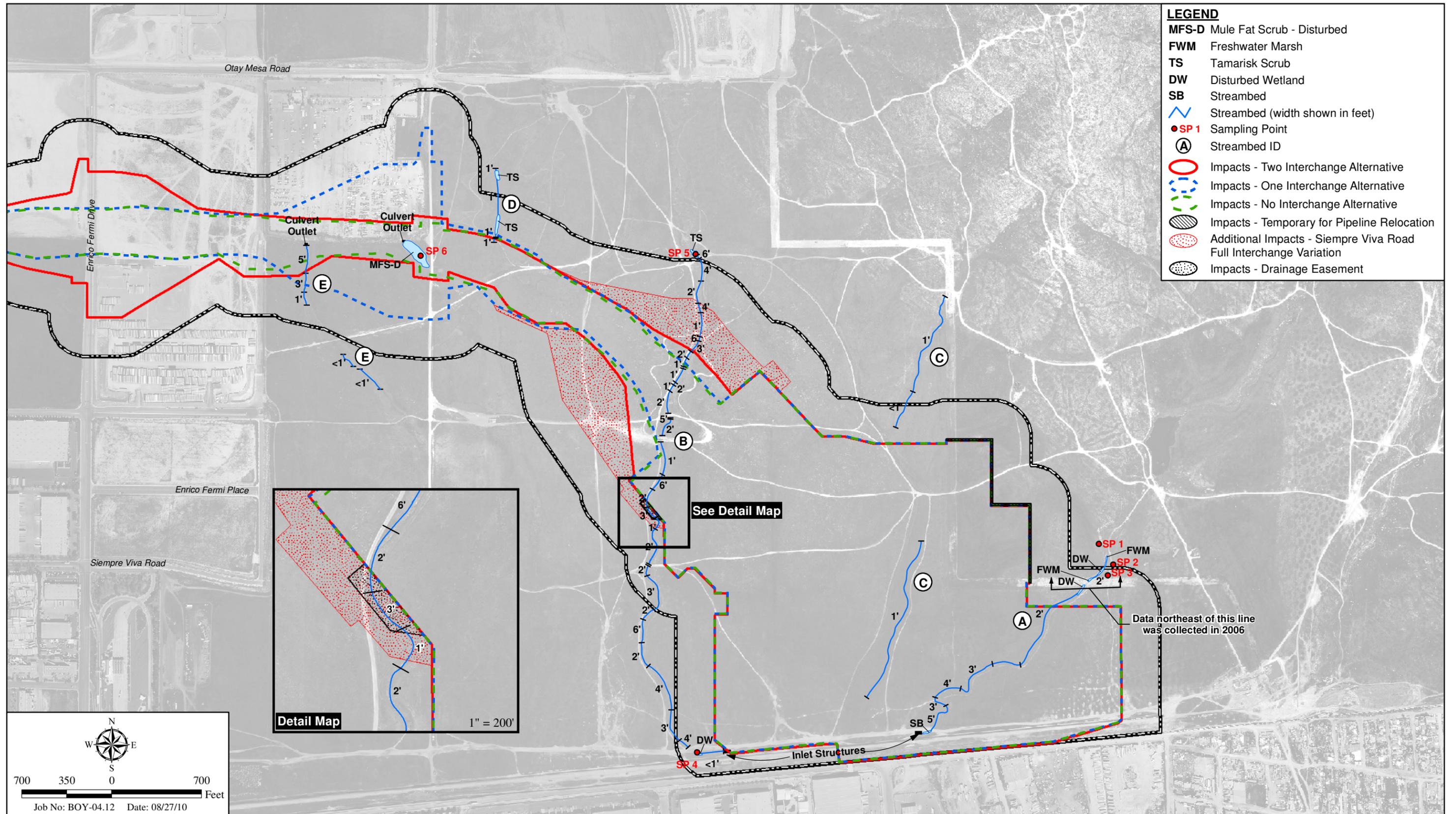
Absent [A] - no habitat present and no further work needed. Habitat Present [HP] -habitat is, or may be present. The species may be present. Present [P] - the species is present. Critical Habitat [CH] - BSA is located within a designated critical habitat unit, but does not necessarily mean that appropriate habitat is present. Status: Federal Endangered (FE); Federal Threatened (FT); state Endangered (SE); state Threatened (ST); Fully Protected (FP); state Species of Special Concern (SSC); California Native Plant Society (CNPS). See Appendix E for more status code information.



USACE Jurisdictional Areas/Impacts

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II NATURAL ENVIRONMENT STUDY

Figure 3-4



CDFG Jurisdictional Areas/Impacts

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II NATURAL ENVIRONMENT STUDY

Figure 3-5

**Table 4
SPECIAL STATUS SPECIES POTENTIALLY OCCURRING
OR KNOWN TO OCCUR IN THE BSA**

Common Name	Scientific Name	Status	General Habitat Description	Rationale*
California adolphia	<i>Adolphia californica</i>	CNPS List 2.1, County Sensitive	Clay soil in sage scrub; occasionally, the periphery of vernal pools	Detected (2006)
San Diego bursage	<i>Ambrosia chenopodiifolia</i>	CNPS List 2.1, County Sensitive	Coastal sage scrub; known from only 10 locations in California	Low potential to occur in BSA; not observed in multiple focused plant surveys
Orcutt's brodiaea	<i>Brodiaea orcuttii</i>	CNPS List 1B.1, County Sensitive	Closed-cone coniferous forest, chaparral, cismontane woodland, meadows and seeps, valley and foothill grassland, vernal pools with clay and sometimes serpentine soils	Low potential to occur in BSA; not observed in multiple focused plant surveys
Small-flowered morning glory	<i>Convolvulus simulans</i>	CNPS List 4.2, County Sensitive	Chaparral, coastal scrub openings and valley/foothill grasslands	Detected (2009)
Western dichondra	<i>Dichondra occidentalis</i>	CNPS List 4.2, County Sensitive	Southern mixed chaparral, sage scrub, rock outcrops in grassland	Low potential to occur in Diegan coastal sage scrub in BSA; not observed in multiple focused plant surveys
Variiegated dudleya	<i>Dudleya variegata</i>	CNPS List 1B.2, MSCP Narrow Endemic, County Sensitive	Chaparral, sage scrub, woodland, grassland, vernal pools with clay soils	Detected (2009)
San Diego barrel cactus	<i>Ferocactus viridescens</i>	CNPS List 2.1, County Sensitive	Chaparral, coastal scrub, valley and foothill grasslands, and vernal pools	Detected (2009)
Palmer's grapplinghook	<i>Harpagonella palmeri</i>	CNPS List 4.2, County Sensitive	Clay soils in grassland, sage scrub, and chaparral	Low potential to occur in BSA; not observed in multiple focused plant surveys
Graceful tarplant	<i>Holocarpha virgata</i> ssp. <i>elongata</i>	CNPS List 4.2, County Sensitive	Chaparral, cismontane woodlands, coastal sage scrub, and grasslands	Low potential to occur in BSA; not observed in multiple focused plant surveys

Table 4 (cont.) SPECIAL STATUS SPECIES POTENTIALLY OCCURRING OR KNOWN TO OCCUR IN THE BSA				
Common Name	Scientific Name	Status	General Habitat Description	Rationale*
Decumbent goldenbush	<i>Isocoma menziesii</i> var. <i>decumbens</i>	CNPS List 1B.2, County Sensitive	Chaparral, coastal sage scrub	Detected (2009)
San Diego marsh-elder	<i>Iva hayesiana</i>	CNPS List 2.2, County Sensitive	Creeks or intermittent streambeds	Detected (2009)
Southwestern spiny rush	<i>Juncus acutus</i> ssp. <i>leopoldii</i>	CNPS List 4.2, County Sensitive	Coastal salt marshes at brackish locales, alkaline meadows, riparian marshes	Low potential to occur in BSA; not observed in multiple focused plant surveys
California box-thorn	<i>Lycium californicum</i>	CNPS List 4.2, County Sensitive	Coastal scrub, coastal bluff scrub	Detected 750 ft west of the BSA (2009)
San Diego golden star	<i>Muilla clevelandii</i>	CNPS List 1B.1, County Sensitive	Clay soils in chaparral, coastal scrub, valley and foothill grassland, and in the vicinity of vernal pools	Detected just outside the BSA (2006). No access to survey nearby in the BSA in 2009
Little mousetail	<i>Myosurus minimus</i> ssp. <i>apus</i>	CNPS List 3.1, County Sensitive	Grassland and vernal pools	Low potential to occur in BSA; not observed in multiple focused plant surveys
Coulter's matilija poppy	<i>Romneya coulteri</i>	CNPS List 4.2, County Sensitive	Post-burn sage scrub or chaparral or along water courses	Low potential to occur in BSA; not observed in multiple focused plant surveys
Munz's sage	<i>Salvia munzii</i>	CNPS List 2.2, County Sensitive	Chaparral and sage scrub	Low potential to occur in BSA; not observed in multiple focused plant surveys; species was observed east of BSA (prior to 2006; URS 2005)
San Diego County viguiera	<i>Viguiera laciniata</i>	CNPS List 4.2, County Sensitive	Sage scrub	Detected (2006)
Western spadefoot toad	<i>Spea hammondi</i>	SSC, County Sensitive	Coastal sage scrub, chaparral, and grassland habitats, but is most common in grasslands with vernal pools or mixed grassland/coastal sage scrub areas	Detected (prior to 2006)

Table 4 (cont.) SPECIAL STATUS SPECIES POTENTIALLY OCCURRING OR KNOWN TO OCCUR IN THE BSA				
Common Name	Scientific Name	Status	General Habitat Description	Rationale*
Orange-throated whiptail	<i>Cnemidophorus hyperythrus beldingi</i>	SSC, County Sensitive	Coastal sage scrub, chaparral, edges of riparian woodlands, and washes; also found in weedy, disturbed areas adjacent to these habitats	High potential to occur in the eastern portion of the BSA
Coastal western whiptail	<i>Cnemidophorus tigris multiscutatus</i>	Special Animal, County Sensitive	Open coastal sage scrub, chaparral, and woodlands; frequently found along the edges of dirt roads traversing its habitats	Detected (prior to 2006)
Red-diamond rattlesnake	<i>Crotalus exsul</i>	SSC, County Sensitive	Found in chaparral, coastal sage scrub, along creek banks, particularly among rock outcrops or piles of debris with a supply of burrowing rodents for prey	Detected (2006)
Coast horned lizard	<i>Phrynosoma coronatum blainvillei</i>	SSC, County Sensitive	Coastal sage scrub and open areas in chaparral, oak woodlands, and coniferous forests with sufficient basking sites, adequate scrub cover, and areas of loose soil; requires native ants, especially harvester ants (<i>Pogonomyrmex</i> sp.)	Moderate potential to occur in sage scrub in the BSA
Two-striped garter snake	<i>Thamnophis hammondi</i>	SSC, County Sensitive	Closely associated with streams with rocky beds and bordered by willows; also, ponds, lakes, wetlands and vernal pools, mixed oak woodlands, and chaparral	Detected (prior to 2006)
Sharp-shinned hawk	<i>Accipiter striatus</i>	Special Animal, County Sensitive	Forest interior and edges from sea level to near alpine areas; can also be found near rural, suburban and agricultural areas	Detected (2009)
Southern California rufous-crowned sparrow	<i>Aimophila ruficeps canescens</i>	SSC, County Sensitive	Coastal sage scrub and open chaparral as well as shrubby grasslands	Detected 1,000 ft north of the BSA (2006)
Grasshopper sparrow	<i>Ammodramus savannarum</i>	Special Animal, County Sensitive	Grassland	Detected (2009)
Bell's sage sparrow	<i>Amphispiza belli belli</i>	SSC, County Sensitive	Patchy distribution throughout the County, which often shifts to include partially recovered burned areas	Low potential to occur in the BSA

Table 4 (cont.) SPECIAL STATUS SPECIES POTENTIALLY OCCURRING OR KNOWN TO OCCUR IN THE BSA				
Common Name	Scientific Name	Status	General Habitat Description	Rationale*
Golden eagle	<i>Aquila chrysaetos</i>	FP, SSC, MSCP Narrow Endemic, County Sensitive	Nesting occurs on cliff ledges or in trees on steep slopes, with foraging occurring primarily in grassland and sage scrub	High potential to forage in the BSA
Burrowing owl	<i>Athene cunicularia</i>	BCC, SSC, MSCP Narrow Endemic, County Sensitive	Shortgrass prairies, grasslands, lowland scrub, agricultural lands (particularly rangelands), prairies, coastal dunes, desert floors, and some artificial, open areas; may also use golf courses, cemeteries, airports, vacant lots in residential areas and university campuses, fairgrounds, abandoned buildings, and irrigation ditches	Detected (2009)
Turkey vulture	<i>Cathartes aura</i>	County Sensitive	Foraging habitat includes most open habitats with breeding occurring in crevices among boulders	Detected (2009)
Northern harrier	<i>Circus cyaneus</i>	SSC, County Sensitive	Open grassland and marsh	Detected (2009)
Yellow warbler	<i>Dendroica petechia brewsteri</i>	SSC, County Sensitive	Mature riparian woodland	Detected as a migrant (2006)
White-tailed kite	<i>Elanus leucurus</i>	FP, County Sensitive	Riparian woodlands, oak or sycamore, or other tree groves adjacent to grassland	Detected (2006)
California horned lark	<i>Eremophila alpestris actia</i>	SSC, County Sensitive	Coastal strand, arid grasslands, and sandy desert floors	Detected (2009)
Prairie falcon	<i>Falco mexicanus</i>	BCC, SSC, County Sensitive	Nesting occurs on inland cliff or bluff ledges or occasionally in old hawk or raven (<i>Corvus corax</i>) nests; foraging occurs in grassland or desert habitats	Low potential to forage in the BSA; no potential to nest there
Loggerhead shrike	<i>Lanius ludovicianus</i>	BCC, SSC, County Sensitive	Grassland, open sage scrub, chaparral, and desert scrub	Detected (2009)

Table 4 (cont.) SPECIAL STATUS SPECIES POTENTIALLY OCCURRING OR KNOWN TO OCCUR IN THE BSA				
Common Name	Scientific Name	Status	General Habitat Description	Rationale*
San Diego black-tailed jackrabbit	<i>Lepus californicus bennettii</i>	SSC, County Sensitive	Occurs primarily in open habitats including coastal sage scrub, chaparral, grasslands, croplands, and open, disturbed areas if there is at least some shrub cover present	Detected in the BSA (2006) and north and west of the BSA (2009)
American badger	<i>Taxidea taxus</i>	SSC, County Sensitive	Open plains and prairies, farmland, and sometimes edges of woods	Low to moderate potential to occur in the BSA

*For the year detected, the most current year of detection is provided.

Status: BCC=Bird of (federal) Conservation Concern; SSC=state Species of Special Concern; Special Animal=taxa to be of the greatest conservation need to CDFG. "Special Animal" was used when the other status codes above (e.g., SSC) were not indicated on the CDFG's Special Animal List. See Appendix E for more status code information.

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Chapter 4. RESULTS: BIOLOGICAL RESOURCES, DISCUSSION OF IMPACTS AND MITIGATION

4.1 Natural Communities of Special Concern

Natural communities of special concern are those that are 1) subject to regulation under the CWA as administered by the USACE; 2) considered rare within the region or sensitive by CDFG (Holland 1986); and/or 3) support special status plants or animals protected under the federal and/or state ESAs.

Twelve natural communities of special concern occur within the BSA: vernal pool, basin with fairy shrimp, freshwater marsh, mule fat scrub-disturbed, disturbed wetland, Diegan coastal sage scrub, Diegan coastal sage scrub-disturbed, coastal sage scrub restoration, native grassland, non-native grassland, non-native grassland-disturbed, and grassland restoration. Refer to Section 3.1.2.2 for descriptions of these communities.

Permanent impacts to natural communities of special concern from the proposed project would include those from paved roadways, cut and fill slopes, drainage features, retaining walls, and all POE/CVEF facilities. Temporary and permanent easements are proposed outside of the proposed project R/W. These easements would be necessary for the relocation of a natural gas pipeline along the northeastern boundary of the proposed POE/CVEF, as well as for modifying and maintaining a portion of an existing drainage along the western boundary of the Siempre Viva Interchange to minimize the potential for scour and associated erosion following project implementation. Impacts associated with these easements would be considered permanent. Otherwise, all operations and maintenance associated with the proposed project would occur within the R/W, which was considered completely and permanently impacted. Construction Best Management Practices (BMPs), installation of construction fencing, and monitoring construction limits would avoid additional impacts to adjacent environmentally sensitive areas outside the proposed project impacts and R/W. Figures 3-1a and 3-1b depict the impacts to natural communities of special concern for the proposed project. Table 5 presents the impact acreages to natural communities of special concern for each of the three build alternatives. The impacts to natural communities would be unchanged under each of the project variations, with the exception of the Siempre Viva Road Full Interchange Variation of the Two Interchange Alternative. Under this variation, an additional 19.6 acres of non-native grassland would be impacted. The additional impact areas associated with the remaining variations all occur within developed areas or within the approved/developing SR-905 R/W that are not natural communities. Additional impacts would occur to tamarisk scrub, non-native vegetation, disturbed habitat, and developed areas under each of the build alternatives (Table 5), but since these communities are either not natural or are not of special concern, mitigation would not be required. The proposed 46-ft Median Variation would impact additional developed land east of Sanyo Avenue, and the proposed SR-905/SR-125/SR-11 Interchange variations would impact more of the existing highway R/W that does not contain natural communities or natural communities of special concern.

Under the No Build Alternative, Caltrans and GSA would not develop the proposed facilities, and the impacts to biological resources described herein would not occur.

The proposed project area is planned for development under the EOMSP. In addition, local transportation facilities would likely be constructed by the County to serve future development. Such cumulative development by others would be likely to ultimately impact many of the natural communities of special concern in the proposed project area, and the developers of these projects would be required to provide appropriate mitigation.

The resource study area (RSA) for natural communities (as well as the other biological resources) is comprised of the EOMSP area plus the portion of the Otay Mesa Community Plan (OMCP) area that is east of the SR-905/Britannia Boulevard Interchange. Of 32 cumulative projects within the RSA for natural communities, almost all cited the potential for impacts to biological resources. The EOMSP EIR (County 1993) noted that cumulative biological resources impacts were determined to be significant in a regional context, “especially given the number of other proposed and/or approved projects in the area and the sensitivity of the habitats in the SPA.” Specific natural communities identified in the EOMSP EIR discussion as cumulatively impacted include coastal sage scrub and grassland. The SR-905 EIS/EIR (Caltrans 2004) noted that the cumulative biological resources impacts that have already occurred on Otay Mesa are substantial. A cumulative impact to natural communities is, therefore, present in the RSA.

For the proposed project, natural communities would be substantially and adversely impacted by project implementation. Avoidance, minimization, or mitigation measures that could be applied to reduce impacts to natural communities associated with the proposed project include revegetation, restoration, and/or preservation of habitats. The cumulative land development projects would be subject to the requirements of the MSCP and local biological protection and resource protection ordinances, with similar mitigation requirements to those included in this section.

Grassland (including native, non-native, disturbed, and areas in the process of being restored to grassland) is the natural community most substantially impacted by the proposed project (up to approximately 203 acres) and the cumulative projects within the RSA (263.1 acres would be impacted by the Otay Crossings Commerce Park, 48.6 acres by Sunroad Centrum Tech Center, 38.52 acres by Saeed TM/Airway Business Center, 40 acres by Burke Minor Subdivision/Otay Logistics Center, 73.5 acres by Vulcan-Otay Mesa Plant, and 23.4 acres by California Crossings, among others.) Mitigation measures identified for the cumulative projects include grassland preservation and designation of open space. Mitigation measures for the proposed project, including the acquisition and management of off-site mitigation parcels to allow preservation of grassland and other natural communities, are expected to minimize the project’s contribution to natural communities impacts. Similar measures would be required for the other cumulative projects in the RSA as well, pursuant to the MSCP, as well as local, state and federal regulatory requirements. The necessary compliance of the proposed project and all cumulative projects in the region with these requirements would mitigate the cumulative impacts associated with the proposed project.

Table 5 IMPACT SUMMARY FOR NATURAL COMMUNITIES			
Resource	Impacted Acreage by Alternative*		
	Two Interchange**	One Interchange	No Interchange
Natural Communities of Special Concern			
Vernal Pool	0.00	0.00	0.00
Vernal Pool Watershed	0.00	0.00	0.00
Basin with Fairy Shrimp	0.00	0.00	0.00
Freshwater Marsh	0.00	0.00	0.00
Mule Fat Scrub – Disturbed	0.42	0.42	0.42
Disturbed Wetland	0.00	0.00	0.00
Diegan Coastal Sage Scrub (Including Disturbed and Restoration)	0.00	0.00	0.00
Native Grassland	0.2	0.2	0.2
Non-native Grassland	179.8	184.4	173.7
Non-native Grassland – Disturbed	0.00	0.00	0.00
Grassland Restoration	3.2	3.2	3.2
Total of Communities of Special Concern	183.62	188.22	177.52
Other Communities			
Tamarisk Scrub	0.08	0.08	0.08
Non-native Vegetation	0.2	0.3	0.2
Disturbed Habitat	31.31	28.51	26.31
Developed	12.2	13.2	5.2
Total of Other Communities	43.79	42.39	31.79
Total Acreage	227.41	230.61	209.31

Note: Impacts do not include those within the existing SR-905/SR-125 R/W (under construction) or the additional approved SR-905 FEIS/FEIR limits of disturbance.

* Upland habitats are rounded to the nearest 0.1 acre; wetland habitats are rounded to the nearest 0.01 acre. Impacts to natural communities for each of the three build alternatives would not be different for implementation of any of the proposed project variations. Total acreage includes 0.91 acre of impacts associated with easements outside of the proposed project R/W (described above), which are considered permanent impacts. Therefore, all project impacts would be permanent.

** An additional 19.6 acres of non-native grassland would be impacted under the Siempre Viva Road Full Interchange Variation of this alternative.

Mitigation for the loss of natural communities of special concern is proposed to occur as shown in Table 6. All mitigation is proposed to occur off site on three Lonestar parcels acquired by Caltrans on Otay Mesa (Figure 3-3). These parcels total approximately 184 acres and are located north/northeast of Brown Field, east and west of SR-125, and south of the Otay River Valley.

The Lonestar parcels support approximately 173 acres of non-native grassland, approximately 8 acres of Diegan coastal sage scrub, approximately 0.5 acre of eucalyptus woodland, an approximately 0.25-acre stock pond, approximately 0.85 acre of vernal pool, and approximately 0.1 acre of unvegetated basins (HELIX 2009h). The majority of the parcels is within the City of San Diego MHPA; some of it is also designated as MSCP BRCA.

Prior to commencement of grading, the off-site mitigation parcels would be placed in conservation easements. Interim management of the Lonestar parcels would be the responsibility of Caltrans, while long-term management of the parcels is expected to be conducted by the County of San Diego Department of Parks and Recreation. In the event that this agency is unable to provide long-term management for the parcels, Caltrans would manage the parcels until they are transferred to an appropriate agency to manage and preserve the wildlife habitat in perpetuity. This would be done through deeds with restrictive covenants to protect and maintain the present and future uses of the parcels. These restrictive covenants would include a list of prohibitive uses that are inconsistent with the conservation purposes of the parcels. The parcels would be used for proposed project mitigation and mitigation for other projects, as applicable, to preserve habitat. Should the Lonestar parcels prove to be infeasible for any reason, alternate land would be acquired by Caltrans as close as possible to the proposed project, with the concurrence of the resource agencies.

4.1.1 Mule Fat Scrub-Disturbed

4.1.1.1 Survey Results

Mule fat scrub-disturbed is located west of Alta Road in the eastern portion of the BSA (Figure 3-1b).

4.1.1.2 Avoidance and Minimization Efforts

For all three build alternatives, no avoidance or minimization efforts were determined feasible for mule fat scrub-disturbed because of the location of this community within the necessary R/W. The current alignment occurs in the Western Alternative, which was selected in Phase I with the support of the resource agencies, to reduce impacts to natural communities of special concern and special status species.

All sensitive habitats outside the impact areas would be designated as environmentally sensitive areas. Such areas would be fenced with orange plastic exclusionary fencing, and no personnel, debris, or equipment are allowed in the environmentally sensitive areas. These areas would be monitored during construction activities.

Table 6
IMPACT/PROPOSED MITIGATION SUMMARY FOR NATURAL COMMUNITIES OF SPECIAL CONCERN

Natural Community	Total Impacted Acreage by Alternative		Mitigation Ratio ²	Proposed Mitigation by Alternative (Acres)		
	Two Interchange ¹	One Interchange		No Interchange	Two Interchange	One Interchange
Mule Fat Scrub – Disturbed	0.42	0.42	2:1	2:1 enhancement and/or restoration ²	2:1 enhancement and/or restoration ²	2:1 enhancement and/or restoration ³
Native Grassland (dominated by coastal saltgrass)	0.2	0.2	2:1	0.4 restoration of NNG with native grassland	0.4 restoration of NNG with native grassland	0.4 restoration of NNG with native grassland
Non-native Grassland	179.8	184.4	1:1	179.8 in-kind preservation ⁴	184.4 in-kind preservation ⁴	173.7 in-kind preservation ⁴
Grassland Restoration	3.2	3.2	1:1	3.2 preservation of NNG ⁴	3.2 preservation of NNG ⁴	3.2 preservation of NNG ⁴

Note: Impacts do not include those within the existing SR-905/SR-125 RW or the additional SR-905 approved FEIS/FEIR limits of disturbance.

¹ An additional 19.6 acres of non-native grassland (NNG) would be impacted by the Siempre Viva Road Full Interchange Variation of the Two Interchange Alternative.

² Per County MSCP Tiers/Ratios: impacts are not located in an MSCP BRCA or the City of San Diego MHPA, but the mitigation proposed is.

³ See Section 4.2.1.4 for more detail regarding this proposed mitigation because this community is an aquatic resource.

⁴ To also mitigate for habitat loss for the burrowing owl and other grassland-dependent special status species.

4.1.1.3 Project Impacts

The Two Interchange, One Interchange, and No Interchange alternatives would each permanently impact 0.42 acre of mule fat scrub-disturbed (Table 5; Figure 3-1b). This community is an aquatic resource, so the impacts to it are also presented in Table 7 and Section 4.2.1.3. The No Build Alternative would not result in any of the impacts described herein.

4.1.1.4 Compensatory Mitigation

Because mule fat scrub-disturbed is an aquatic resource, the mitigation for this community is described in Section 4.2.1.4 under Aquatic Resources. Impacts to mule fat scrub-disturbed may require mitigation at a 2:1 ratio (Table 6).

4.1.1.5 Cumulative Impacts

Given the heavy development pressure throughout east Otay Mesa, the proposed project could contribute to cumulative losses of mule fat scrub in the region. Permitting and mitigation in compliance with the CDFG “no net loss” policy, however, would ensure that the proposed project would not contribute to the cumulative loss of this jurisdictional habitat. The proposed project would not impact habitat preserved within the South County segment of the County’s MSCP Subarea Plan or in the Southern Area of the City’s MSCP Subarea Plan, and therefore, would not compromise the goal of these plans to provide long-term habitat conservation. The South County segment includes preservation of 543 acres (86 percent) of the riparian scrub within that segment (County 1997), and the Southern Area includes preservation of 1,172 acres (43 percent) of all riparian scrub preserved by the City’s entire MSCP Subarea Plan (City 1997). The proposed project would impact 0.42 acre of mule fat scrub outside of the County and City habitat preservation areas.

4.1.2 Native Grassland

4.1.2.1 Survey Results

Native grassland dominated by coastal saltgrass occurs in two small areas adjacent to a drainage in the east-central portion of the BSA (Figure 3-1b).

4.1.2.2 Avoidance and Minimization Efforts

For all three build alternatives, no avoidance or minimization efforts were determined feasible for native grassland because of the location of this community within the necessary R/W. The current alignment occurs in the Western Alternative, which was selected in Phase I with the support of the resource agencies, to reduce impacts to natural communities of special concern and special status species.

All sensitive habitats outside the impact areas would be designated as environmentally sensitive areas. Such areas would be fenced with orange plastic exclusionary fencing, and no personnel, debris, or equipment are allowed in the environmentally sensitive areas. These areas would be monitored during construction activities.

4.1.2.3 Project Impacts

The Two Interchange, One Interchange, and No Interchange alternatives would each permanently impact 0.2 acre of native grassland dominated by coastal saltgrass (Table 5; Figure 3-1b). The No Build Alternative would not result in any of the impacts described herein.

4.1.2.4 Compensatory Mitigation

Impacts to 0.2-acre of native grassland is proposed to be mitigated through the restoration of native grassland where non-native grassland presently occurs at a 2:1 ratio (Table 6). Restoration of native grassland would occur through the dethatching of non-native grassland and subsequent planting of native grasses on the western Lonestar parcel. A mitigation plan for restoration of this community would be prepared that identifies the location for restoration, responsible parties, methods of implementation, maintenance and monitoring requirements, final success criteria, and contingency measures.

4.1.2.5 Cumulative Impacts

The majority of native grasslands in California have been displaced by non-native grassland dominated by introduced, annual species; native grasslands do still persist, however, as small isolated islands such as those in the BSA. While there is heavy development pressure throughout east Otay Mesa, the proposed project would not contribute to cumulative losses of native grassland because the restoration of native grassland would occur at a 2:1 ratio in an area that will be preserved in perpetuity on Otay Mesa. Furthermore, the proposed project would not impact habitat preserved within the South County segment of the County's MSCP Subarea Plan or in the Southern Area of the City's MSCP Subarea Plan, and therefore, would not compromise the goal of these plans to provide long-term habitat conservation. The South County segment includes preservation of 1,170 acres (38 percent) of the grasslands (native and non-native) within that segment (County 1997), and the Southern Area includes preservation of 201 acres (four percent) of all grasslands preserved by the City's entire MSCP Subarea Plan (City 1997). The proposed project would impact 0.2 acre of native grassland outside of the County and City habitat preservation areas.

4.1.3 Non-Native Grassland

4.1.3.1 Survey Results

Non-native grassland covers the majority of the eastern portion of the BSA and occurs in small areas in the western portion of the BSA (Figures 3-1a and 3-1b). The disturbed phase of this community has a substantial cover of non-native forbs, such as mustard and occurs west of Sanyo Avenue (Figure 3-1a).

4.1.3.2 Avoidance and Minimization Efforts

For all three build alternatives, no avoidance or minimization efforts were determined feasible for non-native grassland (including disturbed) because of the location of this community within the necessary R/W. The current alignment occurs in the Western Alternative, which was selected in Phase I with the support of the resource agencies, to reduce impacts to natural communities of special concern and special status species.

All sensitive habitats outside the impact areas would be designated as environmentally sensitive areas. Such areas would be fenced with orange plastic exclusionary fencing, and no personnel, debris, or equipment are allowed in the environmentally sensitive areas. These areas would be monitored during construction activities.

4.1.3.3 Project Impacts

The Two Interchange Alternative would permanently impact 179.8 acres of non-native grassland, including 0.8 acre associated with proposed easements outside project R/W. The Siempre Viva Road Full Interchange Variation of this alternative would permanently impact an additional 19.6 acres of non-native grassland (Table 5; Figures 3-1a and 3-1b).

The One Interchange Alternative would permanently impact 184.4 acres of non-native grassland, including 0.8 acre associated with proposed easements outside project R/W (Table 5; Figures 3-1a and 3-1b).

The No Interchange Alternative would permanently impact 173.7 acres of non-native grassland, including 0.8 acre associated with proposed easements outside project R/W (Table 5; Figures 3-1a and 3-1b).

The No Build Alternative would not result in any of the impacts described herein.

4.1.3.4 Compensatory Mitigation

Proposed mitigation for permanent impacts of up to a maximum of 199.4 acres of non-native grassland (i.e., if the Two Interchange Alternative with the Siempre Viva Road Full Interchange Variation is selected) is through preservation of non-native grassland at a 1:1 ratio (Table 6). Since the grassland in the R/W is considered occupied by the burrowing owl, the mitigation land should also be burrowing owl habitat. Preservation of non-native grassland on the Lonestar parcels is proposed to satisfy this mitigation. It is acknowledged that the Lonestar parcels support approximately 173 acres of non-native grassland, and that additional grassland may be required. Caltrans will consult with the resource agencies to devise an acceptable strategy to compensate for any shortage in the required mitigation.

4.1.3.5 Cumulative Impacts

Given the heavy development pressure throughout east Otay Mesa, and that the proposed project would result in the loss of non-native grassland (including disturbed) on Otay Mesa, the proposed project would contribute to cumulative losses of this natural community. This cumulative impact also includes the loss of raptor foraging habitat as well as nesting habitat for burrowing owls, among other species. However, the proposed project would not impact habitat preserved within the South County segment of the County's MSCP Subarea Plan or in the Southern Area of the City's MSCP Subarea Plan, and therefore, would not compromise the goal of these plans to provide long-term habitat conservation. The South County segment includes preservation of 1,170 acres (38 percent) of the grasslands (native and non-native) within that segment (County 1997), and the Southern Area includes preservation of 201 acres (four percent) of all grasslands preserved by the City's entire MSCP Subarea Plan (City 1997). The proposed project would impact a maximum of 199.4 acres of non-native grassland (if the Siempre Viva Road Full Interchange Variation of the Two Interchange Alternative is selected) outside of the County and City habitat preservation areas.

4.1.4 Grassland Restoration

4.1.4.1 Survey Results

Two areas in the eastern part of the BSA are in the process of being restored to grassland following the installation of a natural gas pipeline (Figure 3-1b).

4.1.4.2 Avoidance and Minimization Efforts

For all three build alternatives, no avoidance or minimization efforts were determined feasible for grassland restoration because of the location of this community passing through a substantial portion of the POE site. The current alignment occurs in the Western Alternative, which was selected in Phase I with the support of the resource agencies, to reduce impacts to natural communities of special concern and special status species.

All sensitive habitats outside the impact areas would be designated as environmentally sensitive areas. Such areas would be fenced with orange plastic exclusionary fencing, and no personnel, debris, or equipment are allowed in the environmentally sensitive areas. These areas would be monitored during construction activities.

4.1.4.3 Project Impacts

The Two Interchange, One Interchange, and No Interchange alternatives would each permanently impact 3.2 acres, including 0.1 acre associated with a proposed easement outside project R/W (Table 5; Figure 3-1b). The No Build Alternative would not result in any of the impacts described herein.

4.1.4.4 Compensatory Mitigation

Proposed mitigation for permanent impacts to 3.2 acres of grassland restoration is through preservation of non-native grassland at a 1:1 ratio (Table 6). Therefore, 3.2 acres of mitigation is proposed. Since the grassland restoration in the R/W is considered occupied by the burrowing owl, the mitigation land should also be burrowing owl habitat. Preservation of non-native grassland on the Lonestar parcels (or equivalent mitigation parcels) would satisfy this mitigation.

4.1.4.5 Cumulative Impacts

Given the heavy development pressure throughout east Otay Mesa, the loss of restored grassland from the proposed project (particularly when combined with the loss of non-native grassland [including disturbed]) would contribute to cumulative losses of this natural community (i.e., grassland) as well as raptor foraging habitat and nesting habitat for burrowing owls, among other species. However, the proposed project would not impact habitat preserved within the South County segment of the County's MSCP Subarea Plan or in the Southern Area of the City's MSCP Subarea Plan, and therefore, would not compromise the goal of these plans to provide long-term habitat conservation. The South County segment includes preservation of 1,170 acres (38 percent) of the grasslands (native and non-native) within that segment (County 1997), and the Southern Area includes preservation of 201 acres (four percent) of all grasslands preserved by the City's entire MSCP Subarea Plan (City 1997). The proposed project would

impact of 3.2 acres of grassland restoration outside of the County and City habitat preservation areas.

4.2 Aquatic Resources

4.2.1.1 Survey Results

Surface water within the BSA consists predominantly of ephemeral flows from storm events. There are five aquatic habitat types under the jurisdiction of the USACE and/or CDFG in the BSA: mule fat scrub-disturbed, freshwater marsh, tamarisk scrub, disturbed wetland, and non-wetland WUS/CDFG streambed (Figures 3-4 and 3-5).

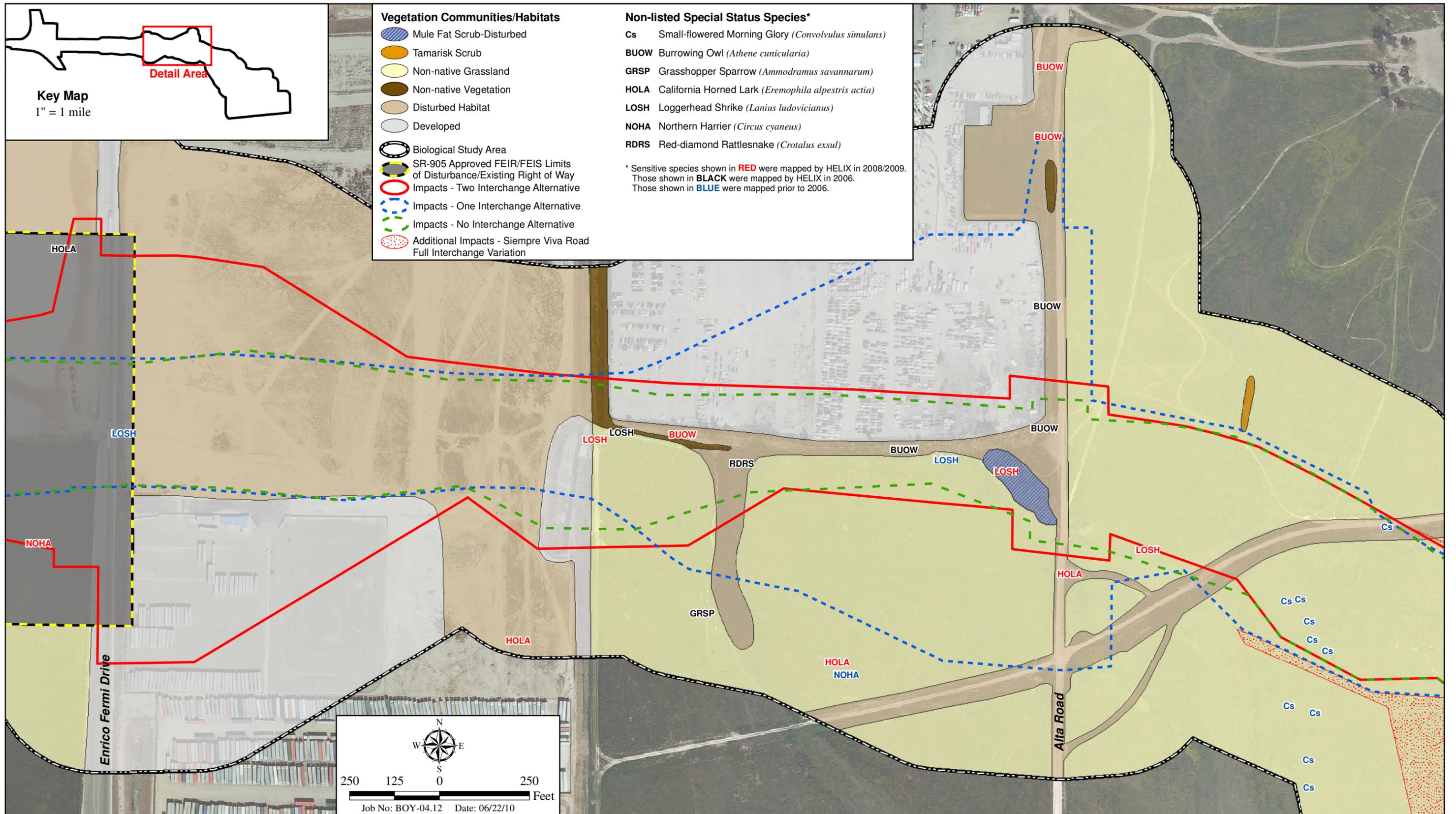
4.2.1.2 Avoidance and Minimization Efforts

For all three build alternatives, no avoidance or minimization efforts were determined feasible for USACE and/or CDFG jurisdictional areas because of the locations of these features that are entirely within, or traverse through, the necessary R/W.

Potential indirect impacts to surface water quality in streambeds from short-term construction would be avoided and minimized via the use of BMPs that include soil stabilization, sediment control, wind erosion control, tracking control, non-storm water management, and waste management and materials pollution control. Specific BMPs for the proposed project would be determined during the Design Phase to ensure conformance with all associated regulatory requirements (including preparation/implementation of a project-specific Storm Water Pollution Prevention Plan).

4.2.1.3 Project Impacts

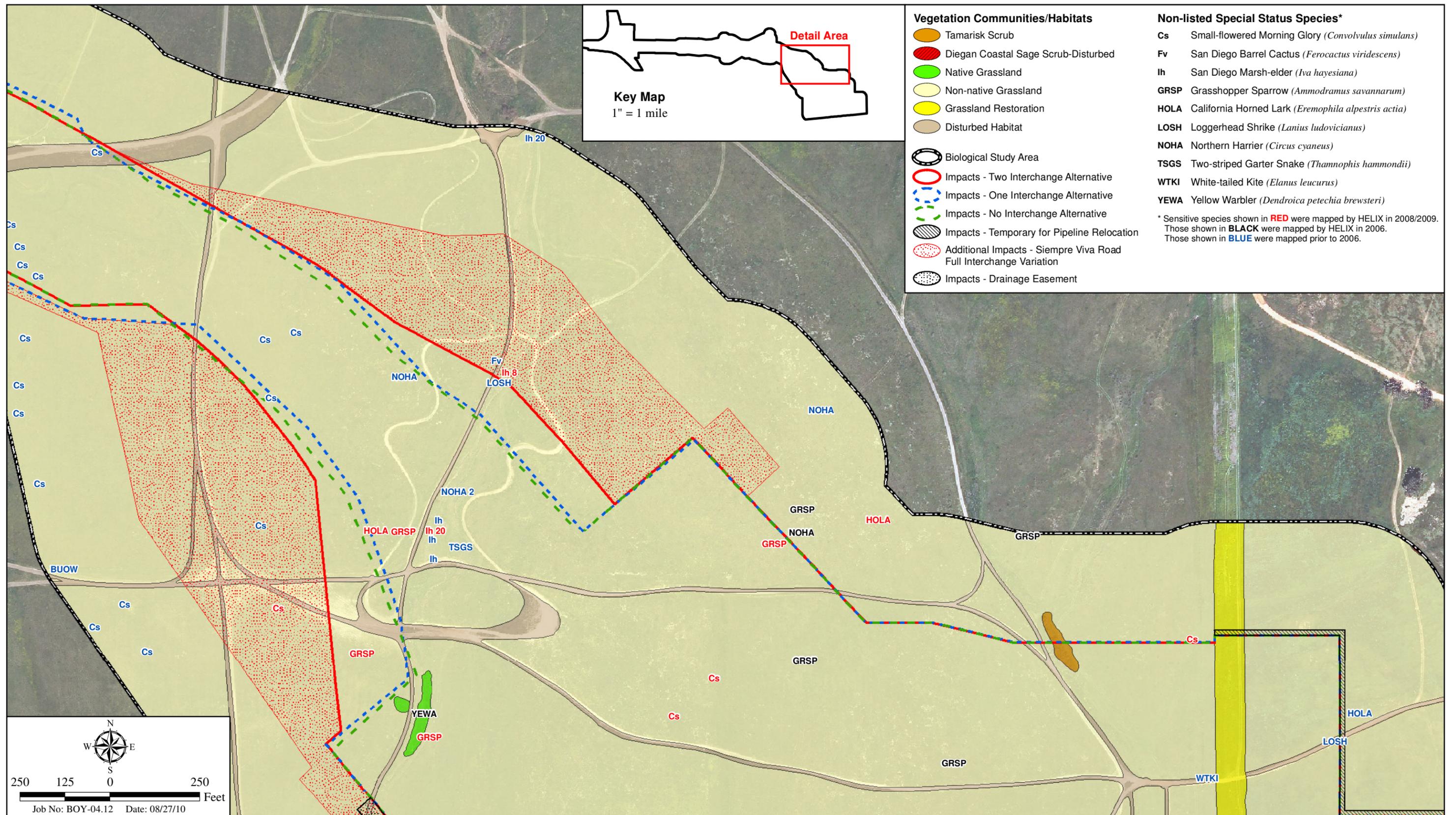
Table 7 and Figures 3-4 and 3-5 present the impacts to aquatic resources under the jurisdiction of the USACE and CDFG for each of the three build alternatives. None of the proposed project variations would result in changes to the identified impacts to aquatic resources from any of the three build alternatives. With the exception of the Siempre Viva Road Full Interchange Variation, which is addressed below, the variations would all occur within developed areas or within approved/developed highway interchange R/W. The No Build Alternative would not result in any of the impacts described herein.



Special Status Species/Impacts

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II NATURAL ENVIRONMENT STUDY

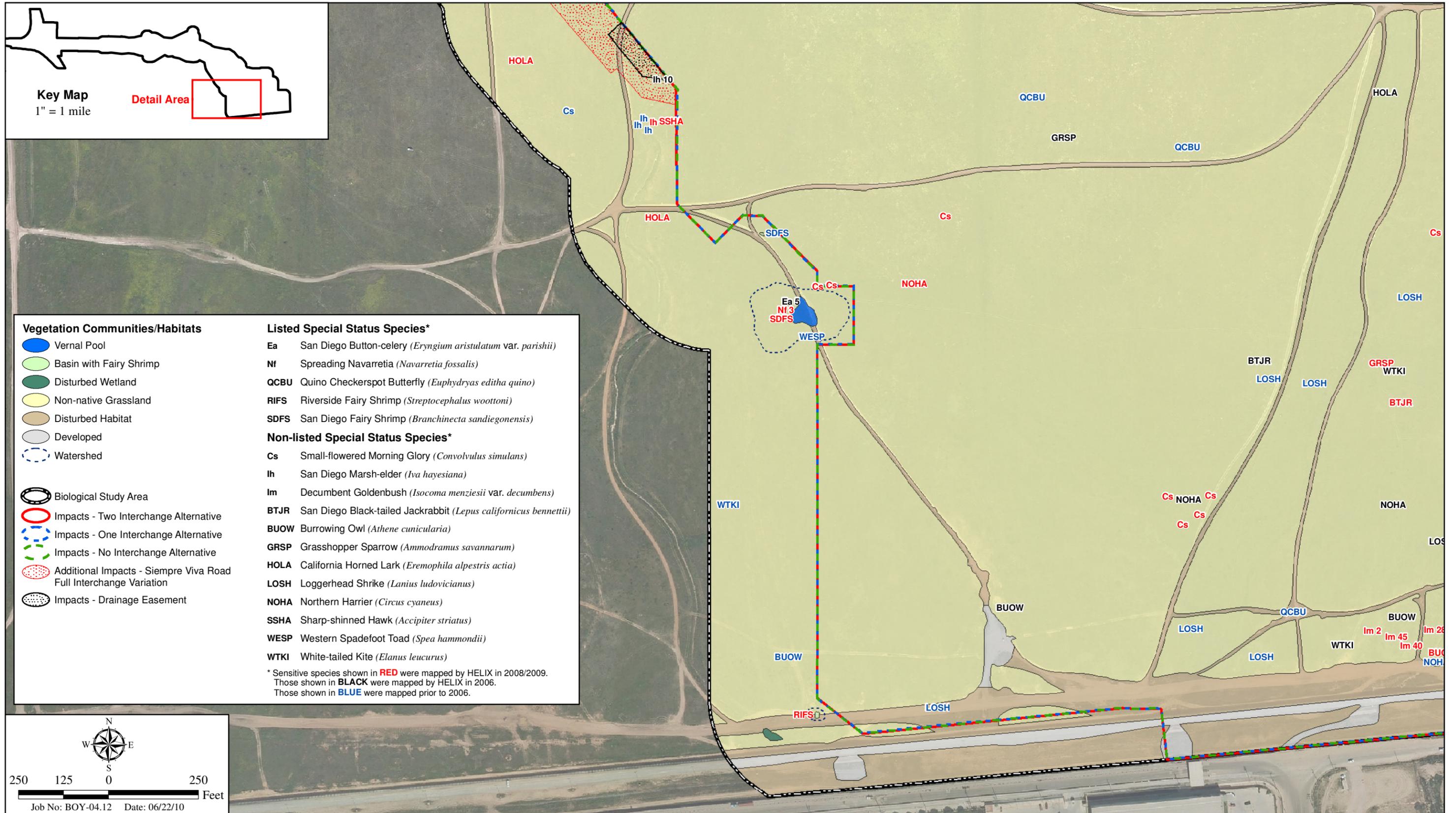
Figure 4-1a



Special Status Species/Impacts

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II NATURAL ENVIRONMENT STUDY

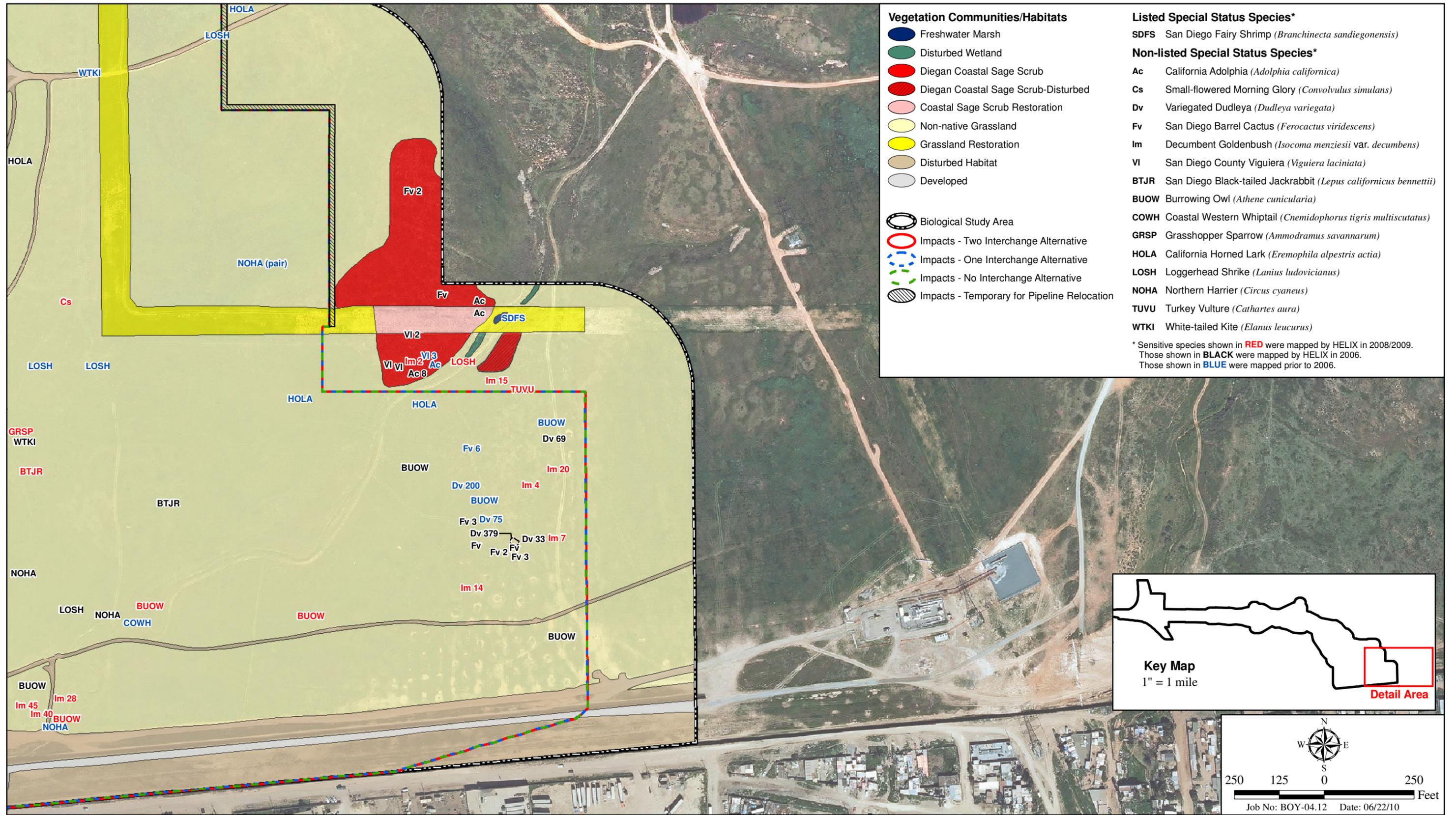
Figure 4-1b



Special Status Species/Impacts

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II NATURAL ENVIRONMENT STUDY

Figure 4-1c



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Special Status Species/Impacts

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II NATURAL ENVIRONMENT STUDY

Figure 4-1d

Table 7 IMPACT SUMMARY FOR JURISDICTIONAL FEATURES¹			
Resource	Impacted Acreage by Alternative²		
	Two Interchange	One Interchange	No Interchange
CDFG Jurisdictional Areas (Acres)			
Mule Fat Scrub-Disturbed	0.42	0.42	0.42
Streambed	0.26 ³	0.27	0.25
Total Acreage	0.68	0.69	0.67
USACE Jurisdictional Areas (Acres)			
Drainage A – WUS	0.11	0.11	0.11
Drainage B – WUS	0.07 ³	0.06	0.06
Drainage C – WUS	0.03	0.03	0.03
Total Acreage	0.21	0.20	0.20
USACE Jurisdictional Drainages (Linear Feet)			
Drainage A – WUS	1,804	1,804	1,804
Drainage B – WUS	1,377 ³	1,263	1,247
Drainage C – WUS	1,340	1,340	1,340
Total Linear Feet	4,521	4,407	4,391

Note: Impacts do not include previously permitted impacts associated with the SR-905 project. All reported impact numbers include 0.01 acre and 165 linear feet of impact to Drainage B, associated with a proposed easement outside project R/W. Impacts associated with the easement would be considered permanent. Therefore, all project impacts would be permanent.

¹ USACE jurisdictional areas impacted overlap completely with CDFG jurisdictional areas impacted, so the total acreage of CDFG jurisdiction represents the total area of CDFG and USACE jurisdiction impacted.

² Wetland habitats are rounded to the nearest 0.01 acre. Implementation of any of the proposed project variations would not change the impacts presented in this table.

³ An additional 1,500 square feet (0.03 acre) of CDFG Streambed and USACE jurisdictional area, representing an additional 641 linear feet of USACE jurisdictional drainage within Drainage B, would be impacted with implementation of the Siempre Viva Road Full Interchange Variation of the Two Interchange Alternative.

The total impact to USACE and CDFG jurisdictional areas for the Two Interchange Alternative would be 0.68 acre, including 0.01 acre associated with a permanent off-site easement (since the USACE jurisdiction completely overlaps with the larger area of CDFG jurisdiction). An additional 0.03 acre of USACE and CDFG jurisdictional area would be impacted with implementation of the Siempre Viva Road Full Interchange Variation of the Two Interchange Alternative.

The total impact to USACE and CDFG jurisdictional areas for the One Interchange Alternative would be 0.69 acre, including 0.01 acre associated with a proposed off-site easement (since the USACE jurisdiction completely overlaps with the larger area of CDFG jurisdiction).

The total impact to USACE and CDFG jurisdictional areas for the No Interchange Alternative would be 0.67 acre, including 0.01 acre associated with a proposed off-site easement (since the USACE jurisdiction completely overlaps with the larger area of CDFG jurisdiction).

Potential indirect water quality impacts from the proposed project are associated with both short-term construction activities and long-term operation and maintenance of the proposed

facilities. Both short- and long-term water quality impacts could potentially affect downstream receiving waters.

Potential water quality impacts related to project construction include erosion/sedimentation; the on-site use and storage of construction-related hazardous materials (e.g., fuels, etc.); the potential occurrence and removal/disposal of materials containing lead-based paint, asbestos or treated wood; and disposal of extracted groundwater (if required).

After completion of construction, erosion and sedimentation effects would be minimal for any of the build alternatives/variations, based on the fact that project-related disturbed soil areas would be stabilized through installation of pavement, permanent erosion control, and landscaping.

The proposed project area is planned for development under the EOMSP. In addition, local transportation facilities would likely be constructed by the County to serve future development. Such cumulative development by others would be likely to ultimately impact many of the aquatic resources in the proposed project area, and the developers of these projects would be required to provide appropriate compensatory mitigation.

4.2.1.4 Compensatory Mitigation

Impacts to USACE and CDFG jurisdictional areas require permitting and mitigation. Impacts to mule fat scrub-disturbed may require mitigation at a 2:1 ratio, and impacts to USACE non-wetland WUS/CDFG streambed may require mitigation at a 1:1 ratio.

The impacts to mule fat scrub-disturbed are proposed to be mitigated at a 2:1 ratio, and the mitigation for impacts to USACE non-wetland WUS/CDFG streambed are proposed to be mitigated at a 1:1 ratio. Therefore, the proposed mitigation for the Two Interchange Alternative is 1.10 acres (1.13 acres if the Siempre Viva Full Interchange Variation is selected), the proposed mitigation for the One Interchange Alternative is 1.11 acres, and the proposed mitigation for the No Interchange Alternative is 1.09 acres.

Proposed mitigation is via the restoration and preservation of USACE non-wetland WUS/CDFG streambed at Johnson Canyon, a drainage that extends onto one of the Lonestar parcels and supports jurisdictional features (Figure 3-3). A jurisdictional delineation would be necessary to determine the extent of USACE/CDFG jurisdiction on the Lonestar parcel. Proposed mitigation would consist of removal of non-native vegetation (primarily tamarisk) and native vegetation planting and seeding for up to approximately 4,521 linear ft of Johnson Canyon.

4.2.1.5 Cumulative Impacts

There are 10 cumulative projects within the RSA for wetlands and other waters (the watershed in which the project is located). Of these 10 projects, five would impact or potentially impact wetlands and/or other waters, including SR-905, Otay Mesa Recycled Water Supply Link, Otay Crossings Commerce Park, Otay Hills Construction Aggregate Extraction Operation, and Otay Business Park (Paragon). Such impacts would be significant and mitigable. As discussed above, the EOMSP EIR (County 1993) noted that cumulative biological resources impacts were determined to be significant in a regional context, "especially given the number of other proposed and/or approved projects in the area and the sensitivity of the habitats in the SPA." Specific wetlands and other waters identified in the EOMSP EIR discussion as cumulatively impacted include wetland and non-wetland Waters of the U.S. A cumulative impact to wetlands and other waters is, therefore, present in the RSA.

Wetlands and other waters would be impacted by project implementation. However, in order to obtain permits for impacts to jurisdictional areas, an applicant must comply with federal and state “no net loss” policies so that cumulative losses do not occur. Therefore, with permits and implementation of required mitigation, the proposed project would not contribute to cumulative losses of jurisdictional areas.

4.3 Special Status Plant Species

As shown in Table 3, seven listed plant species have potential to occur in the BSA: San Diego thornmint, Otay tarplant, San Diego button-celery, willow monardella, spreading navarretia, California orcutt grass, and Otay Mesa mint. Focused surveys for special status plant species were conducted in 2000, 2005, 2006, and 2008/2009. The results of those surveys are shown on Figures 4-1a through 4-1d. San Diego button-celery and spreading navarretia were observed in the BSA (Figure 4-1c), but would not be impacted by any of the three build alternatives because they are outside of the R/W, so they are not discussed further. The other species do not occur in the BSA; therefore, they are not discussed further.

As shown in Table 4, seven special status but non-listed plant species were observed in the BSA (Figures 4-1a through 4-1d): California adolphia, small-flowered morning glory, variegated dudleya, San Diego barrel cactus, decumbent goldenbush, San Diego marsh-elder, and San Diego County viguiera. Of these, five species would be impacted by the proposed project as discussed below. Two of the species, California adolphia and San Diego County viguiera, would not be impacted by any of the three build alternatives because they are outside of the R/W (Figure 4-1d), so they are not discussed further.

The Siempre Viva Road Full Interchange Variation, if implemented, would increase the impacts of the Two Interchange Alternative with regard to small-flowered morning glory, San Diego barrel cactus and San Diego marsh-elder. None of the other potential project variations would result in changes to the identified impacts to special status plant species from any of the three build alternatives. The variations would all occur within developed areas or within approved/developed highway interchange R/W. The No Build Alternative would not result in any of the impacts described herein.

The proposed project area is planned for development under the EOMSP. In addition, local transportation facilities would likely be constructed by the County to serve future development. Such cumulative development by others would be likely to ultimately impact many of the special status plant species in the proposed project area, and the developers of these projects would be required to provide appropriate mitigation.

As stated in Section 4.1, there are 32 cumulative projects within the RSA for biological resources. Of these projects, SR-905, Otay Crossings Commerce Park, and Otay Business Park (Paragon) are specifically identified as potentially impacting special status/non-listed plant species, and many of the remaining cumulative projects are listed as impacting “sensitive species” or “biological resources.” As previously mentioned, the EOMSP EIR (County 1993) noted that cumulative biological resources impacts were determined to be significant in a regional context. Specific plants identified in the EOMSP EIR discussion as cumulatively impacted include San Diego barrel cactus and San Diego County viguiera. A cumulative impact to non-listed, special status plant species is, therefore, present in the RSA.

For the proposed project, individual plant species would be substantially and adversely impacted by project implementation. Avoidance, minimization, or mitigation measures that could be applied to reduce the proposed project’s direct impacts to special status plant species include salvage and translocation of individual plants and preservation within the Lonestar

parcels. The cumulative land development projects would be subject to the requirements of the MSCP and local biological protection and resource protection ordinances, with similar mitigation requirements. The necessary compliance of the proposed project and all cumulative projects in the region with these requirements would mitigate the cumulative impacts associated with the proposed project.

4.3.1 Small-Flowered Morning Glory

Small-flowered morning glory is a CNPS List 4.2 species (limited distribution/fairly endangered in California) that can be found in chaparral, coastal sage scrub openings, and valley and foothill grasslands in various southern and central California counties on the Channel Islands, and in Baja California, Mexico.

4.3.1.1 Survey Results

Small-flowered morning glory was observed in 31 patches (a multi-year total) throughout the grassland in the eastern portion of the BSA prior to 2006 and in 2009 (Figures 4-1a through 4.3-1d).

4.3.1.2 Avoidance and Minimization Efforts

For all three build alternatives, no avoidance or minimization efforts were determined feasible for small-flowered morning glory because it is found throughout non-native grassland that occupies the majority of the eastern portion of the necessary R/W.

4.3.1.3 Project Impacts

Small-flowered morning glory is declining in southern California due to habitat loss. The distinctive friable, crumbly, clay soils where this species is usually found are now quite uncommon in southern California in an undisturbed state. Such areas are generally very small, often less than 1,000 square ft in size (Reiser 2001), as they are in the BSA. Up to 20 patches of small-flowered morning glory would be directly impacted by each of the three build alternatives (Figures 4-1a through 4-1d). Two additional patches of this species would be impacted under the Siempre Viva Road Full Interchange Variation of the Two Interchange Alternative.

4.3.1.4 Compensatory Mitigation

Due to the lower sensitivity of this species, and because the impacts would not be adverse, mitigation for impacts to small-flowered morning glory are not proposed. However, the species would be preserved concurrently with preservation of non-native grassland on the western Lonestar parcel because the species is present there as it was observed during a survey for the Quino in 2009 (Appendix B in HELIX 2009i).

4.3.1.5 Cumulative Effects

The proposed project would impact as many as 20 patches of small-flowered morning glory (and up to approximately 184.4 acres of its potential non-native grassland habitat). Small-flowered morning glory is a species of low-level sensitivity and was not evaluated for coverage under the MSCP. It is considered sensitive by the CNPS for being of limited distribution and fairly endangered in California, and the CNPS feels that it needs to be monitored for changes in population status.

While considered sensitive by the CNPS across its range of southern and central California, small-flowered morning glory is common throughout the proposed project vicinity on Otay Ranch, in Otay Valley Regional Park, and on Otay Mesa. Populations also occur within the City of Chula Vista MSCP preserve as well as within the City of San Diego MHPA. While the proposed project's impacts would contribute to cumulative losses of this species, with its low level of sensitivity and with the fact that it would be preserved concurrent with the preservation of non-native grassland on the Lonestar parcels (or equivalent mitigation parcels), means that the cumulative losses would not be substantial.

4.3.2 Variegated Dudleya

Variegated dudleya is a CNPS List 1B.2 species (rare, threatened, and endangered in California and elsewhere/fairly endangered in California) that can be found in chaparral, coastal sage scrub, woodland, grassland, or vernal pool habitats with clay soils in the County and Baja California, Mexico.

4.3.2.1 Survey Results

Variegated dudleya was observed in five locations (a multi-year total of 756 individuals) in the eastern portion of the BSA (Figure 4-1d).

4.3.2.2 Avoidance and Minimization Efforts

FHWA's selection of the Western Alternative in its Phase I ROD (FHWA 2008) eliminated many impacts to variegated dudleya that could have otherwise occurred (see Section 1.1). For all three build alternatives, no further avoidance or minimization efforts were determined feasible for variegated dudleya because of its location within the necessary R/W.

4.3.2.3 Project Impacts

Variegated dudleya is severely declining in the County due to urban expansion, and widespread grading on Otay Mesa has eliminated major populations and outlying colonies (Reiser 2001). Each of the three build alternatives would directly impact all individuals of variegated dudleya that are located within the BSA (Figure 4-1d).

4.3.2.4 Compensatory Mitigation

Proposed mitigation for variegated dudleya is through salvage and translocation of at least 80 percent of the populations to be impacted (and their underlying soil if necessary). The reason for this is that variegated dudleya is a County MSCP List A species for which 80 percent preservation is typically required. While Caltrans is not subject to the MSCP, Caltrans strives to be consistent with it. Therefore, it is proposed that the populations be translocated to the Lonestar parcels (or equivalent mitigation parcels). A mitigation plan would be prepared that identifies the locations for translocation, responsible parties, methods of implementation, maintenance and monitoring requirements, final success criteria, and contingency measures.

4.3.2.5 Cumulative Effects

According to the County's MSCP Subarea Plan (County 1997), 56 percent of major populations and 75 percent of known localities of variegated dudleya are conserved in the overall MSCP Plan area, and the species is considered to be covered (i.e., adequately conserved). The

proposed project would impact five locations (a multi-year total of 756 individuals) of variegated dudleya that are outside the MSCP conservation area and would, therefore, not affect the level of conservation. With the impacts from the proposed project to variegated dudleya mitigated by the proposed translocation, the proposed project would not substantially contribute to cumulative losses of this species.

4.3.3 San Diego Barrel Cactus

San Diego barrel cactus is a CNPS List 2.1 species (rare, threatened, and endangered in California, but more common elsewhere/seriously endangered in California) that can be found in chaparral, coastal sage scrub, valley and foothill grassland, and vernal pool habitats in coastal San Diego County and Baja California, Mexico. Its optimal habitat appears to be hillsides with coastal sage scrub or sometimes the periphery of vernal pool and mima mound topography on Otay Mesa (Reiser 2001).

4.3.3.1 Survey Results

San Diego barrel cactus was observed in eight locations (a multi-year total of 19 individuals) in the eastern portion of the BSA (Figure 4-1d). Observations made prior to 2009 appear to no longer exist or may not have been observed due to lack of access to survey.

4.3.3.2 Avoidance and Minimization Efforts

FHWA's selection of the Western Alternative in its Phase I ROD (FHWA 2008) eliminated many impacts to San Diego barrel cactus that could have otherwise occurred (see Section 1.1). For all three build alternatives within, no further avoidance or minimization efforts were determined feasible for San Diego barrel cactus because of its location within the necessary R/W.

4.3.3.3 Project Impacts

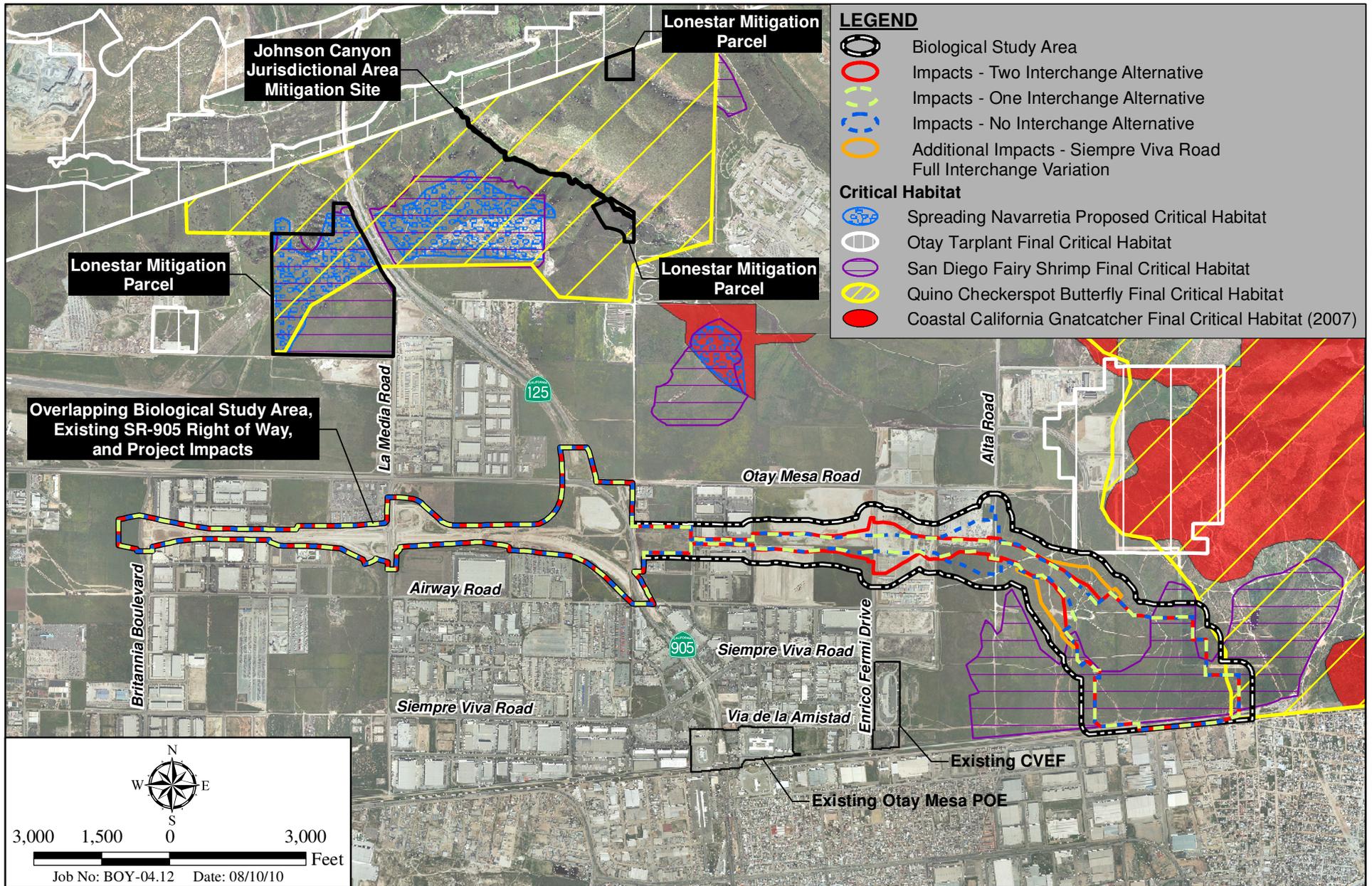
San Diego barrel cactus is declining but still grows in many locales in the County. Otay Mesa colonies have been the most impacted (Reiser 2001). Each of the three build alternatives would directly impact 16 individuals of San Diego barrel cactus (Figure 4-1d). One additional individual of this species would be impacted under the Siempre Viva Road Full Interchange Variation of the Two Interchange Alternative.

4.3.3.4 Compensatory Mitigation

Proposed mitigation for San Diego barrel cactus is through salvage and translocation of at least 80 percent of the individuals to be impacted (and their underlying soil if necessary). The reason for this is that San Diego barrel cactus is a County MSCP List B species for which 80 percent preservation is typically required. While Caltrans is not subject to the MSCP, Caltrans strives to be consistent with it. Therefore, it is proposed that the individuals be translocated to the Lonestar parcels (or equivalent mitigation parcels). A mitigation plan would be prepared that identifies the locations for translocation, responsible parties, methods of implementation, maintenance and monitoring requirements, final success criteria, and contingency measures.

4.3.3.5 Cumulative Effects

According to the County's MSCP Subarea Plan (County 1997), 81 percent of major populations of San Diego barrel cactus are conserved in the overall MSCP Plan area, and the species is



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Critical Habitat/Impacts

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II NATURAL ENVIRONMENT STUDY

Figure 4-2

considered to be covered (i.e., adequately conserved). The proposed project would impact a maximum of 17 individuals of San Diego barrel cactus that are outside the MSCP conservation area and would, therefore, not affect the level of conservation. With the impacts from the proposed project to San Diego barrel cactus mitigated by the proposed translocation, the proposed project would not substantially contribute to cumulative losses of this species.

4.3.4 Decumbent Goldenbush

Decumbent goldenbush is a CNPS List 1B.2 species (rare, threatened, and endangered in California and elsewhere/fairly endangered in California) that can be found in chaparral and coastal sage scrub habitats in San Diego and Orange counties, on San Clemente and Santa Catalina islands, and in Baja California, Mexico.

4.3.4.1 Survey Results

Decumbent goldenbush was observed in 10 locations representing 177 individuals in the southeastern portion of the BSA (Figures 4-1c and 4-1d).

4.3.4.2 Avoidance and Minimization Efforts

For all three build alternatives, no avoidance or minimization efforts were determined feasible for decumbent goldenbush because of its location within the necessary R/W.

4.3.4.3 Project Impacts

Each of the three build alternatives would directly impact 160 individuals of decumbent goldenbush located in the BSA (Figures 4-1c and 4-1d).

4.3.4.4 Compensatory Mitigation

Proposed mitigation for impacts to decumbent goldenbush is through the planting of seed or container stock of this species on the Lonestar parcels (or equivalent mitigation parcels). The reason for this is that decumbent goldenbush is a County MSCP List A species for which 80 percent preservation is typically required. While Caltrans is not subject to the MSCP, Caltrans strives to be consistent with it. Therefore, a minimum of 128 individual plants should result from the mitigation. A mitigation plan would be prepared that identifies the locations for mitigation, responsible parties, methods of implementation, maintenance and monitoring requirements, final success criteria, and contingency measures.

4.3.4.5 Cumulative Effects

The proposed project would impact 160 individuals of decumbent goldenbush, a species not evaluated for coverage under the MSCP. It is considered sensitive by the CNPS for being rare, threatened, and endangered in California and elsewhere, as well as fairly endangered in California. While the proposed project's impacts would contribute to cumulative losses of this species, the losses would not be substantial because at least 80 percent of the total number of decumbent goldenbush to be impacted would be replaced and preserved in perpetuity.

4.3.5 San Diego Marsh-Elder

San Diego marsh-elder is a CNPS List 2.2 species (rare, threatened, and endangered in California but more common elsewhere/fairly endangered in California) that can be found along creeks or intermittent streambeds in the County and Baja California, Mexico.

4.3.5.1 Survey Results

San Diego marsh-elder was observed in 30 locations (a multi-year total of 65 individuals) in the eastern portion of the BSA (Figures 4-1b and 4-1c).

4.3.5.2 Avoidance and Minimization Efforts

For all three build alternatives, no avoidance or minimization efforts were determined feasible for San Diego marsh-elder because of its location within the necessary R/W and easement.

4.3.5.3 Project Impacts

San Diego marsh-elder is considered stable but potentially affected by modifications and degradation of drainages in the County (Reiser 2001). It is noted that the drainages in the BSA where San Diego marsh-elder was observed in previous years have become choked with non-native vegetation, particularly Russian thistle, which may have displaced the species. Each of the three build alternatives would directly impact up to 43 individuals of San Diego marsh-elder (Figures 4-1b and 4-1c). An additional 11 individuals of this species would be impacted under the Siempre Viva Road Full Interchange Variation of the Two Interchange Alternative.

4.3.5.4 Compensatory Mitigation

Due to the lower sensitivity of this species, mitigation for impacts to San Diego marsh-elder is not proposed.

4.3.5.5 Cumulative Effects

The proposed project would impact as many as 43 individuals of San Diego marsh-elder. San Diego marsh-elder is a species of low-level sensitivity and was not evaluated for coverage under the MSCP. It is considered sensitive by the CNPS for being rare, threatened, and endangered in California but more common elsewhere and fairly endangered in California. While considered sensitive by the CNPS across its range of San Diego County, San Diego marsh-elder is common throughout the proposed project vicinity in the Otay River, around Lower Otay Lake, and on Otay Mesa (Reiser 2001). While the proposed project's impacts would contribute to cumulative losses of this species, the losses would not be substantial.

4.4 Special Status Animal Species

As shown in Table 3, four federally listed animal species have potential to occur in the BSA (Figures 4-1a through 4-1d): San Diego fairy shrimp, Riverside fairy shrimp, Quino, and coastal California gnatcatcher. Focused surveys for both fairy shrimp species were conducted five times from 2001 to 2009 (wet season) and five times from 2000 to 2009 (dry season). Focused surveys for the Quino and coastal California gnatcatcher were each conducted four times from 2001 to 2009.

San Diego fairy shrimp, Riverside fairy shrimp, and Quino were observed in the BSA (Figures 4-1c and 4-1d). Only Quino and San Diego fairy shrimp critical habitat would be impacted and are described below. Riverside fairy shrimp would not be impacted (Figures 4-1c and 4-2) and the coastal California gnatcatcher does not occur in the BSA; therefore, no discussion is provided below for these species.

The proposed project would include basins that would be capable of providing water detention, water retention/infiltration, and/or water quality treatment capacity. Surface water within the study area consists predominantly of ephemeral flows from storm events; therefore, water is only expected to be in the basins for short periods of time. Long-term maintenance of the basins would typically include regular inspection and as-needed biannual vegetation management (e.g., removal of woody or excess vegetation), removal of excess sediment, and removal of ponded water or other vector-related problems. Therefore, because the basins are expected to be dry most of the year, and they will be maintained, they are not expected to develop habitat that would attract animals.

None of the potential project variations would result in changes to the identified impacts to special status animal species or their critical habitat from any of the three build alternatives. The variations would all occur within developed areas or within approved/developed highway interchange R/W. The No Build Alternative would not result in any of the impacts described herein.

The proposed project area is planned for development under the EOMSP. In addition, local transportation facilities would likely be constructed by the County to serve future development. Such cumulative development by others would be likely to ultimately impact many of the special status animal species in the proposed project area, and the developers of these projects would be required to provide appropriate mitigation.

Non-Listed, Special Status Animal Species. As stated in Section 4.1, there are 32 cumulative projects within the RSA for biological resources. Of these projects, six are identified as potentially impacting non-listed, special status animal species, including SR-905, Otay Crossings Commerce Park, Sunroad Centrum Tech Center, Saeed TM/Airway Business Center, Otay Mesa Auto Transfer/Rowland, and Otay Business Park (Paragon), while nine others are identified as impacting “sensitive species” or “biological resources.” Impacted species include coastal western whiptail, California horned lark, loggerhead shrike, grasshopper sparrow, burrowing owl, and northern harrier. Impacts to raptor foraging habitat are also noted for some projects. As previously mentioned, the EOMSP EIR (County 1993) noted that cumulative biological resources impacts were determined to be significant in a regional context, including impacts to burrowing owls. A cumulative impact to non-listed sensitive animal species is, therefore, present in the RSA.

For the proposed project, individual animal species would be substantially and adversely impacted by project implementation. Avoidance, minimization, or mitigation measures that could be applied to reduce impacts to animal species associated with the proposed project include pre-construction surveys to verify the presence or absence of nesting birds, avoiding grading and vegetation clearing during the bird breeding season, habitat preservation within the Lonestar parcels, and passive relocation of burrowing owls. The cumulative land development projects would be subject to the requirements of the MSCP and local biological protection and resource protection ordinances, with similar mitigation requirements. The necessary compliance of the proposed project and all cumulative projects in the region with these requirements would mitigate the cumulative impacts associated with the proposed project.

Threatened and Endangered Species. Of the 32 cumulative projects within the RSA for biological resources, four are specifically identified as impacting threatened and endangered species, including Otay Mesa Road Widening, Otay Crossings Commerce Park, Sunroad Centrum Tech Center, and Otay Business Park (Paragon), while other cumulative projects are called out as impacting “sensitive” plants and/or animals or “biological resources,” which may include threatened and/or endangered species. Listed species that would be impacted by cumulative projects in the RSA include San Diego button celery, Quino, and San Diego and Riverside fairy shrimp. As previously mentioned, the EOMSP EIR (County 1993) noted that cumulative biological resources impacts were determined to be significant in a regional context. A cumulative impact to threatened and endangered species is, therefore, present in the RSA.

For the proposed project, one federally listed endangered animal species (Quino) would be substantially and adversely impacted by project implementation. In addition, the proposed project would impact critical habitat for San Diego fairy shrimp and Quino. Avoidance, minimization, or mitigation measures that could be applied to reduce impacts to Quino include the off-site preservation and enhancement of habitat within the Lonestar parcels. Mitigation also would include the preservation of vernal pools. The cumulative land development projects would also be subject to the requirements of the MSCP, local biological protection and resource protection ordinances, FESA, and CESA, with similar mitigation requirements. The necessary compliance of the proposed project and all cumulative projects in the region with these requirements would mitigate the cumulative impacts associated with the proposed project.

4.4.1 San Diego Fairy Shrimp

San Diego fairy shrimp is federally listed endangered. It occurs in vernal pools or other water-holding basins. Critical habitat for the San Diego fairy shrimp occurs across the eastern portion of the BSA (Figure 4-2).

4.4.1.1 Survey Results

San Diego fairy shrimp were found in two locations (a multi-year total) in the eastern portion of the BSA (Figures 4-1c and 4-1d).

4.4.1.2 Avoidance and Minimization Efforts

The proposed western edge of the POE was shifted to the east to avoid direct impacts to a vernal pool (and its watershed) supporting San Diego fairy shrimp (Figure 4-1c). No avoidance or minimization efforts were determined feasible for San Diego fairy shrimp critical habitat because of its location within the necessary R/W.

4.4.1.3 Project Impacts

San Diego fairy shrimp would not be directly impacted by any of the three build alternatives; however, 111.5 acres of San Diego fairy shrimp critical habitat would be directly impacted by each of the three build alternatives (Figure 4-2). Critical habitat for the San Diego fairy shrimp occurs across the eastern portion of the BSA, although actual habitat that currently supports the San Diego fairy shrimp is a fraction of this area in the BSA. The USFWS determined in its final rule for San Diego fairy shrimp critical habitat designation (72 FR 70647 70714, December 12, 2007) that the San Diego fairy shrimp's habitat's primary constituent elements (PCEs) are: (1) vernal pools with shallow to moderate depths (two inches to 12 inches) that hold water for sufficient lengths of time (seven to 60 days) necessary for incubation, maturation, and reproduction of the San Diego fairy shrimp, in all but the driest years; (2) topographic features

characterized by mounds and swales and depressions within a matrix of surrounding uplands that result in complexes of continuously, or intermittently, flowing surface water in the swales connecting the pools described in PCE 1, providing for dispersal and promoting hydroperiods of adequate length in the pools (i.e., the vernal pool watershed); and (3) flat to gently sloping topography, and any soil type with a clay component and/or an impermeable surface or subsurface layer known to support vernal pool habitat (including Carlsbad, Chesterton, Diablo, Huerhuero, Linne, Olivenhain, Placentia, Redding, and Stockpen soils). The San Diego fairy shrimp critical habitat impact area for each of the three build alternatives currently supports approximately 102 acres of non-native grassland, three acres of grassland restoration, 0.1 acre of tamarisk scrub, six acres of disturbed habitat, and 0.3 acre of developed land. No basins with fairy shrimp or vernal pools have been identified within this impact area, Although the area does contain the identified PCE soils, as much as 45 percent of the impact area is too steep to support vernal pools.

4.4.1.4 Compensatory Mitigation

Proposed mitigation for direct impacts to 111.5 acres of San Diego fairy shrimp critical habitat is through preservation of San Diego fairy shrimp critical habitat on the western Lonestar parcel (Figure 4-2; or equivalent mitigation parcels). The western Lonestar parcel contains approximately 150 acres of San Diego fairy shrimp critical habitat. The final mitigation for critical habitat impacts would be negotiated during the Section 7 consultation with the USFWS. Caltrans anticipates the completion of a Biological Assessment in March 2011 and issuance of a Biological Opinion by November 2011.

4.4.1.5 Cumulative Effects

According to the County's MSCP Subarea Plan (County 1997), 88 percent of potential vernal pool habitat of the San Diego fairy shrimp is conserved in the overall MSCP Plan area, and the species is considered to be covered (i.e., adequately conserved). The proposed project would not impact the San Diego fairy shrimp or any vernal pool habitat but would impact 111.5 acres of San Diego fairy shrimp designated critical habitat. However, the mitigation proposed would permanently preserve San Diego fairy shrimp critical habitat that otherwise could be developed, and this critical habitat contains substantially more San Diego fairy shrimp and San Diego fairy shrimp habitat with higher functionality and more constituent elements than the critical habitat impacted. Therefore, with the proposed preservation, the proposed project would not contribute substantially to cumulative losses of San Diego fairy shrimp critical habitat.

4.4.2 Quino Checkerspot Butterfly

The Quino is federally listed endangered. Potential habitat for the Quino includes vegetation communities with areas of low-growing and sparse vegetation; these habitats include open stands of sage scrub and chaparral, adjacent open meadows, old foot trails, and dirt roads. Its primary larval host plants in San Diego are dwarf plantain at lower elevations, and owl's clover is considered a secondary host plant if primary host plants have senesced. Critical habitat for the Quino occurs in the southeastern corner of the BSA (Figure 4-2).

4.4.2.1 Survey Results

Potential habitat for the Quino, as well as dwarf plantain and owl's clover are present in the BSA. The Quino was observed in three locations in the eastern portion of the BSA prior to 2006 (Figure 4-1c). It was not observed in 2006 or 2009.

4.4.2.2 Avoidance and Minimization Efforts

FHWA's selection of the Western Alternative in its Phase I ROD (FHWA 2008) eliminated most impacts to Quino critical habitat as well as impacts to its potential Diegan coastal sage scrub habitat that otherwise could have occurred (see Section 1.1). For all three build alternatives, no further avoidance or minimization efforts were determined feasible for the Quino because of its locations (i.e., observations prior to 2006 but none in 2006 or 2009) and the location of its critical habitat within the necessary R/W.

4.4.2.3 Project Impacts

All three locations where the Quino was observed would be directly impacted by each of the three build alternatives (Figure 4-1c). Additionally, each of the three build alternatives would directly impact 4.2 acres of Quino critical habitat (Figure 4-2).

4.4.2.4 Compensatory Mitigation

Because of the low quality of the Quino habitat to be impacted, the small number of individual Quino observed, and because no Quino have been observed in recent years, the focus of the mitigation proposed is on preservation and restoration of Quino habitat off site. Therefore, proposed mitigation for the loss of the Quino is through preservation and enhancement of historically occupied Quino habitat on the Lonestar parcels (or equivalent mitigation parcels).

Proposed mitigation for direct impacts to 4.2 acres of Quino critical habitat is through preservation of Quino critical habitat on the Lonestar parcels (Figure 4-2; or equivalent mitigation parcels). Potential habitat for the Quino, as well as dwarf plantain and owl's clover, are present on the Lonestar parcels. The final mitigation for critical habitat impacts would be negotiated during the Section 7 consultation with the USFWS. Caltrans anticipates the completion of a Biological Assessment in March 2011 and issuance of a Biological Opinion by November 2011.

4.4.2.5 Cumulative Effects

The proposed project would impact three locations where the Quino was observed historically but that are currently considered to support low quality habitat. The proposed project would also impact 4.2 acres of designated critical habitat for the Quino. The Quino was not evaluated for coverage under the MSCP. Given the heavy development pressure throughout east Otay Mesa, the proposed project would contribute to cumulative losses of the Quino and its critical habitat. However, the mitigation proposed includes permanently preserving critical habitat where the Quino has been observed and that otherwise could be developed. Therefore, the proposed project would not contribute substantially to cumulative losses of the species or its critical habitat.

4.4.3 Non-Listed, Special Status Animal Species

As shown in Table 4, 21 special status but non-listed animal species have potential to occur in the BSA; 14 of these were observed including the burrowing owl (Figures 4-1a through 4.3-1d).

The proposed project would include basins that would be capable of providing water detention, water retention/infiltration, and/or water quality treatment capacity. Surface water within the

study area consists predominantly of ephemeral flows from storm events; therefore, water is only expected to be in the basins for short periods of time. Long-term maintenance of the basins would typically include regular inspection and as-needed biannual vegetation management (e.g., removal of woody or excess vegetation), removal of excess sediment, and removal of ponded water or other vector-related problems. Therefore, because the basins are expected to be dry most of the year, and they will be maintained, they are not expected to attract animal species.

4.4.3.1 Survey Results

While no focused surveys for special status, non-listed animal species were conducted, with the exception of the burrowing owl, 14 such species were observed in the BSA, including the burrowing owl, during other surveys conducted for the proposed project. The remaining 13 special status species observed opportunistically include western spadefoot toad, coastal western whiptail, two-striped garter snake, red-diamond rattlesnake, northern harrier, white-tailed kite, sharp-shinned hawk, turkey vulture, loggerhead shrike, California horned lark, yellow warbler, grasshopper sparrow, and San Diego black-tailed jackrabbit (Figures 4-1a through 4-1d).

Because of the sensitivity of the burrowing owl, and this part of Otay Mesa supporting one of the last breeding populations of the species left in the County (Unitt 2004), focused surveys for the burrowing owl were conducted in the BSA six times from 2000 to 2009. Burrowing owls were observed during all of the surveys, and often during other focused species surveys (e.g., for Quino).

4.4.3.2 Avoidance and Minimization Efforts

For all three build alternatives, no avoidance or minimization efforts were determined feasible for non-listed, special status species, with the exception of special status birds, since they occur throughout the eastern portion of the necessary R/W.

To avoid impacting nesting birds, all brushing, grading, and clearing of vegetation would take place outside of the bird breeding season (February 1 through August 31). If construction activities occur during the breeding season, a pre-construction survey would be conducted to ensure that no nesting birds are present within the proposed work area. Should a nest site be located, then appropriate measures may include (but are not limited to) monitoring during grading and construction to ensure no impacts to the nest site, designating the location as an environmentally sensitive area, and delaying or restricting project activities until nesting and fledging is complete.

For burrowing owls, a pre-construction survey to identify active burrows within the R/W and 250 ft beyond the R/W (where potential burrows could be) would be conducted no more than 30 days prior to initiation of construction. To minimize impacts to nesting burrowing owls, no disturbance would occur within 250 ft of any active burrow (including any that occur outside the R/W) during the burrowing owl breeding season (February 1 through August 31) or until a qualified biologist determines that a burrow is no longer active. For each active burrow to be directly impacted outside the burrowing owl breeding season, a qualified biologist would implement passive relocation measures (installation of one-way doors) in accordance with CDFG regulations (CDFG 1995). Once all owls have vacated the burrows (after approximately 48 hours), a qualified biologist would oversee the excavation and filling of the burrows.

Furthermore, the six-foot high chain link fencing that would be installed at the edge of the R/W would help to reduce the potential for burrowing owls to be struck by moving vehicles.

4.4.3.3 Project Impacts

Since all of the species observations were made at single points in time (with the exception of the burrowing owl), these animals are mobile, and the majority of the habitat (i.e., non-native grassland) in the eastern portion of the R/W is suitable for them (with the possible exception of the two-striped garter snake and the yellow warbler), each has potential to be impacted by all three build alternatives because of the extent of their habitat that would be lost. The two-striped garter snake is generally found around pools or other water sources that are limited in the BSA, so it is not likely that it would be affected. The yellow warbler was observed during migration; there is no yellow warbler breeding habitat (riparian woodland dominated by willow [*Salix* spp.], cottonwood [*Populus fremontii*], etc.) in the BSA. The yellow warbler would, therefore, not be impacted by the proposed project. The burrowing owl would be affected by all three build alternatives as follows in the discussion below.

Burrowing Owl. The Two Interchange and No Interchange alternatives would directly impact 12 locations (a multi-year total) of burrowing owl (Figures 4-1a, 4-1c, and 4-1d). The One Interchange Alternative would directly impact 14 locations (a multi-year total) of burrowing owl (Figures 4-1a, 4-1c, and 4-1d). No additional locations would be impacted by any of the design variations. Because of the sensitivity of the burrowing owl (the USFWS expressed primary concern for this species in 2008; Appendix A, page A-1), and because these owls are part of one of the last breeding populations of the species left in the County (Unitt 2004), these impacts would require mitigation.

Since burrowing owls (and some other migratory birds) are known to frequent the BSA and the lands east and west of the BSA, burrowing owls could fly through the proposed project area and potentially be struck by moving vehicles, particularly during hours of darkness.

4.4.3.4 Compensatory Mitigation

Impacts to non-listed, special status animal species would be offset by the proposed mitigation for non-native grassland impacts (see Section 4.1.4.4). These species would also benefit from the proposed preservation of other habitats (e.g., Diegan coastal sage scrub) as well as the preservation, restoration, and enhancement of vernal pool habitat on the Lonestar parcels (or equivalent mitigation parcels; see Section 4.1).

Impacts to burrowing owls are proposed to be mitigated through preservation of up to a maximum of 199.4 acres of non-native grassland (i.e., if the Two Interchange Alternative with the Siempre Viva Road Full Interchange Variation is selected). The preservation would occur on the Lonestar parcels (or equivalent mitigation parcels). It is acknowledged that the Lonestar parcels support approximately 173 acres of non-native grassland, and that additional grassland may be required. Caltrans will consult with the resource agencies to devise an acceptable strategy to compensate for any shortage in the required mitigation. To ensure suitable burrow opportunities are present, artificial burrows would be created in the preserved grassland at a 5:1 ratio for each burrow impacted (for a total of up to 70 artificial burrows). The artificial burrows would be constructed prior to the passive relocation. A Burrowing Owl Mitigation Plan would be prepared and submitted to CDFG for approval that 1) describes the off-site preservation of burrowing owl habitat; 2) identifies the methods for artificial burrow creation; and 3) outlines burrow and habitat maintenance requirements, burrow monitoring requirements, and reporting requirements.

4.4.3.5 Cumulative Effects

The majority of the habitat to be impacted by the proposed project that supports non-listed, special status animal species is non-native grassland. Given the heavy development pressure throughout east Otay Mesa, and that the proposed project would result in the loss of non-native grassland (including disturbed) on Otay Mesa, the proposed project would contribute to cumulative losses of this natural community and these species. However, the proposed project would not impact habitat preserved within the South County segment of the County's MSCP Subarea Plan or in the Southern Area of the City's MSCP Subarea Plan, and therefore, would not compromise the goal of these plans to provide long-term habitat conservation for the non-listed special status animal species (with the exception of the burrowing owl). The South County segment includes preservation of 1,170 acres (38 percent) of the grasslands (native and non-native) within that segment (County 1997), and the Southern Area includes preservation of 201 acres (four percent) of all grasslands preserved by the City's entire MSCP Subarea Plan (City 1997). The proposed project would impact a maximum of 199.4 acres of non-native grassland outside of the County and City habitat preservation areas, but with the proposed compensatory mitigation to preserve grassland habitat, the proposed project's contribution to cumulative losses of this natural community and these species would not be substantial.

The proposed project would also contribute to the cumulative loss of the burrowing owl because burrowing owl populations are so limited in the County; the owls in the R/W are part of one of the last breeding populations of the species in the County (Unitt 2004); and east Otay Mesa is critical to maintaining burrowing owls in the County (County 2010b). According to the County's MSCP Subarea Plan (County 1997), the species is considered to be covered (i.e., adequately conserved) because 5,770± acres of potential and 4,000± acres of known suitable habitat (grassland; including Otay Mesa northeast of Brown Field) will be conserved. However, with the exception of Otay Mesa, burrowing owls no longer thrive in these locations (County 2010b). The mitigation for impacts to the burrowing owl is proposed on Otay Mesa (northeast of Brown Field) and would include preservation of non-native grassland at a ratio of up to 1:1 (additional grassland may be required to meet the 1:1 ratio), and artificial burrows would be created in the grassland at a ratio of five burrows for each burrow impacted—all in accordance with the County's new burrowing owl strategy (County 2010b). Therefore, while the proposed project would contribute to cumulative losses of burrowing owls on east Otay Mesa, the losses would not be substantial.

4.4.4 Migratory Birds

All migratory bird species native to the U.S. or its territories are protected under the federal Migratory Bird Treaty Act (MBTA), as amended under the Migratory Bird Treaty Reform Act of 2004 (FR Doc. 05-5127). In common practice, the MBTA is used to place restrictions on disturbance of active bird nests during the nesting season (generally February 1 to August 31).

4.4.4.1 Survey Results

Special status and non-special status bird species nest in the BSA. Some of these species include grasshopper sparrow, western meadowlark, and burrowing owl in the grasslands. Other species such as the house finch (*Carpodacus mexicanus*), lesser goldfinch (*Carduelis psaltria*), and mourning dove (*Zenaida macroura*), for example, likely nest in other areas of the BSA that support disturbed habitat or developed land (e.g., landscaping).

4.4.4.2 Avoidance and Minimization Efforts

To avoid impacting nesting birds, all brushing, grading, and clearing of vegetation would take place outside of the bird breeding season (February 1 through August 31). Additionally, no construction activities would occur within 250 ft of an active burrowing owl burrow from February 1 through August 31 (including any occurring outside the R/W), or until a qualified biologist determines that it is no longer active.

If construction activities occur during the breeding season, a pre-construction survey would be conducted to ensure that no nesting birds are present within the proposed work area. Should a nest site be located, then appropriate measures may include (but are not limited to) monitoring during grading and construction to ensure no impacts to the nest site, designating the location as an environmentally sensitive area, and delaying or restricting project activities until nesting and fledging is complete.

4.4.4.3 Project Impacts

The proposed project has the potential to disturb active bird nests if brushing, clearing, or grading takes place during the bird breeding season (February 1 through August 31). Disturbance to active bird nests would be a violation of the MBTA.

4.4.4.4 Mitigation

With implementation of the avoidance measures described above, the proposed project would not impact nesting birds and, therefore, would not violate the MBTA, so mitigation would not be required.

4.4.4.5 Cumulative Effects

Given the heavy development pressure throughout east Otay Mesa, and that the proposed project would cause the loss of potential nesting habitat (i.e., all natural communities except for developed), the proposed project would contribute to the cumulative loss of bird nesting opportunities. However, since most of the species that are likely to nest are not of special status, the loss of these potential nesting habitats would not be cumulatively substantial. The cumulative effect of the proposed project on the burrowing owl is discussed in Section 4.4.3.5.

4.5 Invasive Species

This section addresses invasive species, which are not considered sensitive by any regulating agency but that can cause economic or environmental harm, or harm to human health. On February 3, 1999, President Clinton signed EO 13112 requiring federal agencies to combat the introduction or spread of invasive species in the U.S. The order defines invasive species as "any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem whose introduction does or is likely to cause economic or environmental harm or harm to human health." FHWA guidance issued August 10, 1999 directs the use of the state's noxious weed list (USDA NRCS 2009) to define the invasive plants that must be considered as part of the analysis for a proposed project.

Additionally, two potentially invasive animal species were observed in the BSA: cabbage white butterfly (*Pieris rapae*) and European starling (*Sturnus vulgaris*). Unlike the California Invasive

Plant Inventory and the state's noxious weed list, there is no known inventory for categorizing invasive animal species.

4.5.1 Survey Results

Table C-2 in Appendix C identifies the invasive, non-native plant species that were observed in the BSA and that are included in the California Invasive Plant Inventory Database for the southwest California floristic province (California Invasive Plant Council 2006). There are 37 species from the database present in the BSA as presented in Table C-2. Species that are also on the state's noxious weed list are also identified in Table C-2.

The cabbage white butterfly was observed in non-native grassland in the BSA, and its host and nectar plants include mustard and wild radish (*Raphanus sativus*), both of which are invasive, non-native plant species present in the BSA. The locations of European starlings within the BSA were not recorded, but the species is likely to occur within developed land, disturbed habitat, and/or non-native grassland, where it could forage on the ground for its main prey of insects.

4.5.2 Avoidance and Minimization Efforts

In compliance with EO 13112 on invasive species and subsequent guidance from the FHWA, the landscaping and erosion control included for the proposed project would not use species on the state's noxious weed list (USDA NRCS 2009) or species listed as invasive in the California Invasive Plant Inventory Database (California Invasive Plant Council 2006).

Inspection of construction areas would be made by a biological monitor for invasive species according to a prescribed schedule during construction. A typical schedule would involve weekly inspections after the first rains, and throughout the rainy season of the construction period. Outside the rainy season, inspection for invasive species would occur monthly.

Soils that may contain invasive plant species seeds would not be stockpiled where wind or water could transport the material/seeds to natural communities of concern. Soils that may contain invasive plant species seeds also would not be transported in such a manner that the seeds could spread natural communities of concern.

4.5.3 Project Impacts

The following analysis of potential impacts due to invasive species addresses all three identified build alternatives (Two Interchange, One Interchange, and No interchange), with or without the associated variations.

Caltrans does not currently use any of the species on the state's noxious weed list for erosion control or landscaping. Therefore, invasive species would not be used in any landscaping needed for the proposed project.

While it is assumed that all invasive plant species present in the R/W would be removed during grading, there is potential for construction activities to result in the spread of invasive plant species from the R/W to new areas with natural communities of concern outside the R/W. If the proposed project caused invasive plant species to colonize new areas, particularly Diegan coastal sage scrub (a natural community of concern), this could impact the federally listed endangered Quino checkerspot butterfly by displacing its larval host plants and adult nectar

resources and could also displace special status plant species by shading and/or out-competing the native species.

Construction of the proposed project could also result in a localized decrease in the cabbage white butterfly population, a species that is considered a pest on crops such as cabbage, broccoli, and radishes, and in large numbers may be considered invasive primarily due to its potential for economic harm. However, its presence (or absence) would not have a substantial effect on biological resources in the proposed project area.

Construction of the proposed project would not be expected to increase or decrease the population of European starlings, an introduced species that is considered invasive because it competes for nest cavities with native birds. The proposed project could eliminate some foraging habitat for European starlings, resulting in a potential population decrease, but at the same time this species is highly adaptable and can thrive around human settlement. Therefore, the European starling is not expected to have substantial effect on biological resources in the proposed project area; it would be expected to occur primarily in developed areas.

In summary, the proposed project could impact adjacent natural communities of concern, if construction resulted in the spread of existing invasive plant species outside the R/W. No substantial impacts would be associated with invasive animal species.

4.5.4 Mitigation

If, during the inspections of the construction area by the biological monitor, invasive species that could spread into new areas are found, precautions would be required that could include the cleaning of construction equipment to help prevent the spread of invasive plant species material and eradication strategies recommended by the biological monitor.

If soils that may contain invasive plant species seeds are to be transported, they shall be kept watered and/or covered during transport.

Upon completion of grading, all areas of temporary disturbance would be revegetated with native species or ornamental landscaping to limit colonization by invasive species. A qualified biologist would review the landscape concept plans to ensure that no invasive species (as listed on the state's noxious weed list or in the California Invasive Plant Inventory Database) are included.

4.5.5 Cumulative Effects

Thirty-seven invasive species were observed in the BSA, and the majority of the R/W supports non-native grassland, which is dominated by non-native, and often, invasive species. Grading for the proposed project would likely remove all invasive plant species present in the R/W, and avoidance and minimization measures would be implemented to prevent the spread of such species into surrounding natural communities of concern. Furthermore, biological monitoring during construction would be conducted to search for invasive plant species that could be spread outside the R/W into areas of concern, and if found, measures would be taken to prevent their spread. Finally, all areas temporarily disturbed by grading would be revegetated with native or non-invasive species to minimize or prevent the colonization by invasive species in those areas where they later could spread outside the R/W. Therefore, the proposed project is not expected to have any substantial cumulative effect on natural communities of concern outside the R/W from invasive plant species.

Chapter 5. RESULTS: PERMITS AND TECHNICAL STUDIES FOR SPECIAL LAWS OR CONDITIONS

5.1 Federal Endangered Species Act Consultation Summary

Administered by the USFWS, the federal ESA provides the legal framework for the listing and protection of species (and their habitats) that are identified as being endangered or threatened with extinction. Actions that jeopardize endangered or threatened species and the habitats upon which they rely are considered a “take” under the ESA. Section 9(a) of the ESA defines take as to “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct.” “Harm” and “harass” are further defined in federal regulations and case law to include actions that adversely impair or disrupt a listed species’ behavioral patterns.

Sections 10(a) and 7 of the federal ESA regulate actions that could jeopardize endangered or threatened species. Section 10(a) allows issuance of permits for incidental take of endangered or threatened species. The term “incidental” applies if the taking of a listed species is incidental to and not the purpose of an otherwise lawful activity. A habitat conservation plan demonstrating how the taking would be minimized and what steps taken would ensure the species’ survival must be submitted for issuance of Section 10(a) permits. Section 7 describes a process of federal interagency consultation for use when federal actions may adversely affect listed species. A Biological Assessment is required for any major construction activity if it may affect listed species. In this case, take can be authorized via a letter of biological opinion, issued by the USFWS for non-marine related listed species issues. Due to the involvement of the FHWA through funding and review of the project, a Section 7 consultation would be required for federally listed endangered and threatened species impacts for this proposed project. The proposed project would directly impact federally listed Quino. Implementation of the avoidance and minimization measures identified in Chapter 4 for the proposed project would reduce impacts to Quino. If federally listed species are detected in the proposed project area before or during construction; or if additional information on the distribution of listed or proposed species becomes available that results in potential effects as a result of construction, Caltrans may be required to undergo further Section 7 consultation with the USFWS.

The USFWS identifies endangered and threatened species critical habitat, which is areas of land considered necessary for endangered or threatened species to recover. The ultimate goal is to restore healthy populations of listed species within their native habitat so they can be removed from the threatened/endangered species list. Once an area is designated as critical habitat pursuant to the federal ESA, all federal agencies must consult with the USFWS to ensure that any project they authorize, fund, or carry out is not likely to result in destruction or adverse modification of the critical habitat. Critical habitat for the Quino and San Diego fairy shrimp would be directly impacted by the proposed project.

All migratory bird species native to the U.S. or its territories are protected under the federal MBTA, as amended under the Migratory Bird Treaty Reform Act of 2004 (FR Doc. 05-5127; USFWS 2004). The MBTA is generally protective of migratory birds but does not actually stipulate the type of protection required. In common practice, the MBTA is now used to place restrictions on disturbance of active bird nests during the nesting season (generally February 1 to August 31).

5.2 California Endangered Species Act Consultation Summary

The Native Plant Protection Act (NPPA) enacted a process by which plants are listed as rare or endangered. NPPA regulates collection, transport and commerce in plants that are listed. The California ESA followed and is similar to the NPPA in that it provides a process by which sensitive species are listed. It is a process by which plants and animals can be recognized as being endangered or threatened with extinction. (Plants listed as rare under the NPPA were designated threatened under the California ESA.) One state listed endangered plant species, San Diego button-celery, occurs in the BSA. Implementation of the avoidance and minimization measures described in Chapter 4 would prevent or reduce impacts to state listed species. However, if project plans change, which may result in potential effects to state listed species; if state listed species are detected in the proposed project area before or during construction; or if additional information on the distribution of listed species becomes available that results in potential effects as a result of construction, Caltrans may be required to undergo Section 2080.1 Consistency Determination consultation with the CDFG while undergoing the federal consultation process.

The ESA Section 4(d) special rule for interim take of coastal California gnatcatchers was promulgated in response to California's NCCP Act of 1991 and the initiation of NCCP Plans targeting coastal sage scrub (gnatcatcher habitat). The NCCP Act authorized the state to engage in regional multiple species conservation planning with local jurisdictions and property owners enrolled in the program. NCCP Plans focus on conserving natural communities in linked regional preserve systems that protect target and other species that are either listed under the federal or state ESAs or which could become listed if populations continue to decline. Approval of NCCP subarea plans provides an enrolled entity with take authorization for all species covered by the plan and institutes mitigation measures that conform to the ESAs which are intended to guarantee the survival of the covered species in the areas covered by the plan.

While Caltrans is not an enrolled entity in NCCP and is not subject to the MSCP, Caltrans strives to be consistent with the MSCP. Take Authorized area in the BSA includes Enrico Fermi Drive that occurs within the SR-905 approved limits of disturbance for which impacts have already been permitted. The BSA also occurs in a Minor Amendment Area as identified in the County's MSCP Subarea Plan. According to the plan, minor amendment properties contain habitat that could be partially or completely eliminated (with appropriate mitigation) without significantly affecting the overall goals of the plan. Due to the involvement of the FHWA, however, through funding and review of the proposed project, a Section 7 consultation would be required (rather than a take authorization under the NCCP) for all impacts to federally listed endangered or threatened species and their habitats. Impacts to state listed species would require a permit for incidental take from the CDFG under Sections 2081(b) and (c) of the California ESA.

Additionally, Minor Amendment Areas Subject to Special Considerations occur in the southeastern portion of the BSA. These areas are subject to requirements of the County's EOMSP (County 2002). The EOMSP states that prior to any development including clearing or grading, a Resource Conservation Plan shall be approved by the County for parcels with a "G" Designator (i.e., MSCP Minor Amendment Areas Subject to Special Consideration; County 2002). Caltrans would not be required to produce a Resource Conservation Plan because it is not subject to the MSCP. However, this discussion of the proposed project's context within the MSCP has been included since Caltrans strives to be consistent with the MSCP.

5.3 Wetlands and Other Waters Coordination Summary

USACE, CDFG, RWQCB, and USFWS are all Participating or Cooperating Agencies under SAFETEA-LU. Each participated in Project Development Team meetings and interagency workgroup meetings, all reviewed the PEIR/PEIS, and most commented and indicated a preference for the proposed project alignment.

Documentation of Agency Coordination

Since there are WUS in the BSA, the USACE, as a Cooperating Agency under SAFETEA-LU, provided a comment letter (dated October 23, 2009) on the purpose and need statement and project alternatives (Appendix A). In this letter, the USACE stated that impacts to vernal pools require an Individual Permit; however, the proposed project would avoid impacts to the vernal pool in the BSA, and its watershed (see Section 4.1.1.2).

Federal wetland regulation (non-marine issues) is guided by the Rivers and Harbors Act of 1899 and the CWA. The Rivers and Harbors Act deals primarily with discharges into navigable waters, while the purpose of the CWA is to restore and maintain the chemical, physical, and biological integrity of all WUS. Permitting for projects filling WUS (including wetlands) is overseen by the USACE under Section 404 of the CWA. Projects could be permitted on an individual basis or be covered under one of several approved NWP. Individual permits are assessed individually based on the type of action, amount of fill, etc. Individual permits typically require substantial time (often longer than six months) to review and approve, while NWPs are pre-approved if a project meets appropriate conditions.

The California Fish and Game Code (Section 1602) regulates riparian and wetland habitats by requiring review and approval of impacts through issuance of an LSAA, which is required prior to impacts to any CDFG jurisdictional habitat.

5.4 Invasive Species

EO 13112 was adopted on February 3, 1999 and seeks to prevent the introduction of alien plant and animal species that cause economic or environmental harm. Federal agencies whose actions may introduce such species are required to identify and prevent such actions, monitor invasive species status and respond immediately to increases, provide for the introduction of native species and restoration of invaded ecosystems, and conduct research on invasive species and environmentally sound strategies to control them. The EO further establishes the Invasive Species Council and an Advisory Committee to provide information and guidance for the Council, which would develop and maintain an Invasive Species Management Plan prescribing specific actions for invasive species control. The proposed project would be implemented consistent with EO 13112 requirements.

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U.S. Environmental Protection Agency

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U.S. Fish and Wildlife Service

- 2007 Designation of critical habitat for the San Diego fairy shrimp (*Branchinecta sandiegonensis*): Final Rule. 72 FR 70647 70714.
- 2002a Quino Checkerspot Butterfly (*Euphydryas editha quino*) 2002 Survey Protocol Information. February.
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Appendix A Agency Coordination



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
Carlsbad Fish and Wildlife Office
6010 Hidden Valley Road
Carlsbad, California 92011



DEC 08 2008

In Reply Refer To:
FWS-SDG-08B0316-09FA0005

Cesar Perez
Senior Transportation Engineer
Federal Highway Administration
650 Capitol Mall, Suite 4-100
Sacramento, California 95814

Subject: Notice of Intent to prepare a Tier II Environmental Impact Statement for State Route 11, Otay Mesa East Port of Entry, and a potential Commercial Vehicle Enforcement Facility in San Diego County, California (ER 08/1139)

Dear Mr. Perez:

We have reviewed the Notice of Intent (NOI) for State Route 11 (SR 11), a New Port of Entry (POE), and a potential Commercial Vehicle Enforcement Facility (CVEF) on east Otay Mesa in San Diego County and are providing the following comments. The project proposes to evaluate design and operational alternatives for future SR 11, the POE and a potential CVEF on Otay Mesa, California. We offer the following comments and recommendations regarding project-associated biological impacts based on our review of the NOI and our knowledge of declining habitat types and species within our office jurisdiction in San Diego County.

We have been participating in the stakeholders group that has been established for this project and will continue to do so. We commented previously on this project in a letter dated June 4, 2007, in response to the NOI for the Phase I Environmental Impact Statement (EIS) as well as in a letter dated March 4, 2008 on the draft EIS. As we stated in our previous letters, of primary concern is the potential impacts to the sensitive resources on both side of the border on Otay Mesa including potential impacts to Quino checkerspot butterflies (*Euphydryas editha quino*), burrowing owls (*Speotyto cunicularia hypugaea*) and listed vernal pool species. We recommend that the POE be located as far to the west as possible in order to minimize impacts to these resources. In addition, we recommend that advanced mitigation opportunities be explored on Otay Mesa for this project given the rarity of the resources and to ensure that adequate mitigation can be secured. Otay Mesa is a critical component of the County of San Diego's Multiple Species Conservation Program, that supports species and habitats not found anywhere else.

To facilitate the evaluation of the proposed project from the standpoint of fish and wildlife protection, we request that the EIS contain the following specific information:



Mr. Cesar Perez (FWS-SDG-08B0316-09FA0005)

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1. A description of the environment in the vicinity of the project from a local and regional perspective. This description should include a vegetation/habitat map of the project area and surrounding areas.
2. A complete discussion of the purpose and need for the project and each of its alternatives. This discussion should also include how this project will be coordinated with the San Diego County update of their East Otay Mesa Specific Plan and its associated amendment to the Multiple Species Conservation Program.
3. A complete description of the proposed project, including the limits of the project area. This project description should include all practicable alternatives that have been considered to avoid and minimize project impacts, to the maximum extent practicable, to sensitive habitats (*e.g.*, coastal sage scrub, wetlands) and endangered, threatened, or sensitive species, and measures to mitigate unavoidable impacts.
4. Quantitative and qualitative assessments of the biological resources and habitat types that will be impacted by the proposed project and its alternatives. An assessment of direct, indirect, and cumulative project impacts to fish and wildlife associated habitats of the project (*e.g.*, increased population, increased development, and increased traffic). All facets of the project (*e.g.*, construction, implementation, operation, and maintenance) should be included in this assessment.
5. This assessment should include a list of Federal candidate, proposed, and/or listed species; State-listed species; and locally sensitive species that are on or near the project site, including a detailed discussion of these species and information pertaining to their local status and distribution. Therefore, we recommend comprehensive biological surveys be performed on the project site, including directed surveys for all potentially occurring Federal and State-listed species using standard survey protocols. Investigators conducting surveys for federally listed species must be qualified biologists. We are particularly interested in any and all information and data pertaining to potential impacts to populations of federally listed or proposed species and their designated or proposed critical habitats. The EIS should disclose all impacts to these sensitive resources including those incurred from indirect impacts.
6. Project-related impacts that may occur to federally listed species in Mexico should also be addressed.
7. Project-related impacts may occur outside of the area directly affected by the proposed project. We recommend that you make your cumulative impacts analysis broad enough to include the effects of future State, tribal, local, or private actions that are reasonably certain to occur in the area affected by the direct and indirect effects of your project.

Mr. Cesar Perez (FWS-SDG-08B0316-09FA0005)

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8. Proposed measures to be taken to avoid, minimize, and mitigate significant impacts to biological resources should be discussed in detail.
9. Maps and tables summarizing specific acreages and locations of all habitat types and the number and distribution of all Federal candidates, proposed, and/or listed species; State listed species; and locally sensitive species on or near the project site that may be affected by the proposed project or project alternatives.
10. A detailed analysis of impacts of the proposed project on the movement of wildlife, and proposed measures to avoid and minimize impacts, and mitigate unavoidable impacts.
11. An assessment of potential impacts to wetlands and jurisdictional waters of the United States. The EIS should disclose all impacts to jurisdictional waters and wetlands, and proposed measures to be taken to avoid and minimize impacts, and mitigate unavoidable impacts.
12. Identification of methods to be employed to prevent the discharge and disposal of toxic and/or caustic substances, including oil and gasoline, on the project site during and after construction. Specifically, effects to water quality from runoff should be addressed.
13. A discussion assessing the effects of the proposed project on multi-species planning efforts within the Multiple Species Conservation Program.

We appreciate the opportunity to comment on this NOI with regard to potential impacts to sensitive and endangered species, wildlife, and wetlands. If you have any questions pertaining to these comments, please contact Ms. Susan Wynn of my staff at (760) 431-9440.

Sincerely,



for

Karen A. Goebel
Assistant Field Supervisor

cc:
Susanne Glasgow, Caltrans District 11
Vijai Rai, DOI



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
Carlsbad Fish and Wildlife Office
6010 Hidden Valley Road
Carlsbad, California 92011



In Reply Refer To:
FWS-SDG-1803.2

OCT 6 2006

Ms. Deborah Leonard
Helix Environmental Inc.
7578 El Cajon Boulevard, Suite 200
La Mesa, California 91941

Subject: Request for Candidate, Proposed, Threatened, or Endangered Species for the Proposed State Route 11 and East Otay Mesa Port-of-Entry Project, San Diego County, California

Dear Ms. Leonard:

The U.S. Fish and Wildlife Service has reviewed the information provided in your letter dated September 12, 2006, and received at our office on September 13, 2006, to assess the potential presence of federally listed threatened, endangered, or proposed species at the proposed project site. We do not have site specific information for your project area however, to assist you in evaluating whether or not the proposed project may affect listed species, we are providing the attached list of federally listed species that may occur in the general project area. Please note that only general biological information is available for the project area and this may not be a comprehensive list. You should contact the California Department of Fish and Game for State-listed and other sensitive species that may occur in the area of the proposed project. Please note that State-listed species are protected under the provisions of the California Endangered Species Act. We recommend that you seek assistance from a biologist familiar with the project site, and experienced in assessing the potential for direct, indirect, and cumulative effects to species and their habitats likely to result from the proposed activity.

If it is determined that the proposed project may affect a listed or proposed species, or designated or proposed critical habitat, consultation (or conference for proposed species) with the Service pursuant to section 7 of the Endangered Species Act (Act) of 1973, as amended, should be initiated. Informal consultation may be used to exchange information and resolve conflicts with respect to listed species prior to a written request for formal consultation.



Ms. Leonard (FWS-SDG-1803.2)

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Should you have any questions regarding the species on the enclosed list or your responsibilities under the Act, please call Kurt Roblek of my staff at (760) 431-9440, extension 308.

Sincerely,



Therese O'Rourke
Assistant Field Supervisor

Cc: Susanne Glasgow, Caltrans District 11
Steve Healow, FHWA
Susan Wynn, USFWS

Federally Listed Species Which Occur or May Occur
Within the Project Site of the Proposed
State Route 11 and East Otay Port-of-Entry Project

Common Name	Scientific Name	Status
PLANTS		
San Diego thormmint	<i>Acanthomintha ilicifolia</i>	T
Otay tarplant	<i>Deinandra conjugens</i>	T, CH
San Diego button celery	<i>Eryngium aristulatum</i> var. <i>parishii</i>	E
willowy monardella	<i>Monardella linoidea</i> ssp. <i>viminea</i>	E
Otay Mesa mint	<i>Pogogyne nudiuscula</i>	E
BIRDS		
southwestern willow flycatcher	<i>Empidonax traillii extimus</i>	E, CH
coastal California gnatcatcher	<i>Polioptila californica californica</i>	T, CH
least Bell's vireo	<i>Vireo bellii pusillus</i>	E, CH
INVERTEBRATES		
San Diego fairy shrimp	<i>Branchinecta sandiegonensis</i>	E, CH
Quino checkerspot butterfly	<i>Euphydryas editha quino</i>	E, CH
Riverside fairy shrimp	<i>Streptocephalus wootoni</i>	E, CH
AMPHIBIANS		
arroyo toad	<i>Bufo californicus</i>	E, CH

E: Endangered

T: Threatened

CH: Critical Habitat



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street
San Francisco, CA 94105-3901

December 4, 2008

Mr. Cesar Perez
Federal Highway Administration
650 Capitol Mall, Suite 4-100
Sacramento, CA 95814

Subject: Scoping Comments for the Tier II Environmental Impact Statement for State Route 11, Otay Mesa East Port of Entry, and Commercial Vehicle Enforcement Facility, San Diego County, California

Dear Mr. Perez:

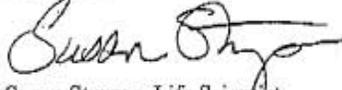
The U.S. Environmental Protection Agency (EPA) has reviewed the Federal Register Notice published on November 5, 2008, requesting comments on the Federal Highway Administration (FHWA) decision to prepare a Tier II Draft Environmental Impact Statement (DEIS) for a proposed highway, international port of entry (POE), and possible commercial vehicle enforcement facility (CVEF) in the East Otay Mesa area of San Diego County, California. Our comments are provided pursuant to the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) regulations (40 CFR Parts 1500-1508) and Section 309 of the Clean Air Act.

The FHWA, in cooperation with the California Department of Transportation (Caltrans), and U.S. General Services Administration (GSA), has already published a Phase 1 EIS (PEIS) that resulted in the selection of a preferred corridor for State Route (SR) 11 and location for the Otay Mesa East POE. The intent of the Tier II EIS is to evaluate design and operational alternatives for SR 11, the POE, and a potential CVEF. EPA has participated in several working group meetings for this project and previously commented on the PEIS. EPA commends FHWA, Caltrans, and GSA for your efforts to consider cross-border wildlife linkages and habitat and to explore the potential of truck stop electrification for the proposed POE facility. EPA is available to participate in further discussions on truck stop electrification. Please contact Dave Foge of our San Diego Field Office at 619-235-4769.

EPA's concerns, as described in the enclosed detailed comments, focus on: (1) cumulative and indirect growth impacts; (2) air quality impacts; (3) impacts to aquatic and biological resources, cultural resources, and environmental justice communities; and (4) recommendations to utilize green building design. EPA emphasizes the importance of expanding upon and refining the cumulative impact analysis from the PEIS in this Tier II DEIS.

EPA appreciates the opportunity to comment on the preparation of the DEIS and we look forward to continued early coordination on this project. Once the DEIS is released for public review, please send three hard copies and two electronic copies to the address above (mail code: CED-2). If you have any questions, please contact me at 415-947-4188 or sturges.susan@epa.gov.

Sincerely,



Susan Sturges, Life Scientist
Environmental Review Office (CED-2)

Attachment:
EPA's Detailed Comments

cc: Kelly Finn, Caltrans
Susanne Glasgow, Caltrans
Morris Angell, U.S. General Services Administration
Mark Cohen, U.S. Army Corps of Engineers
Susan Wynn, U.S. Fish and Wildlife Service
Andy Brinton, U.S. Customs and Border Protection

EPA SCOPING COMMENTS ON THE TIER II DRAFT EIS FOR STATE ROUTE 11, OTAY MESA EAST PORT OF ENTRY, AND COMMERCIAL VEHICLE ENFORCEMENT FACILITY, SAN DIEGO COUNTY, CALIFORNIA, DECEMBER 4, 2008

Cumulative Impact Analysis

Cumulative impacts are defined in the Council of Environmental Quality's (CEQ) National Environmental Policy Act (NEPA) regulations as the impact on the environment that results from the incremental impact of the action when added to the other past, present, and reasonably foreseeable future actions, regardless of what agency (Federal or non-Federal) or person undertakes such actions (40 CFR 1508.7). These actions include both transportation and non-transportation activities. The cumulative impact analysis should consider transportation and non-transportation projects, such as large-scale industrial or commercial developments, that are reasonably foreseeable and are identified within city and county planning documents.

The cumulative impact analysis should describe the "identifiable present effects" to various resources attributed to past actions. The purpose of considering past actions is to determine the current health of resources. This information forms the baseline for assessing potential cumulative impacts and can be used to develop cooperative strategies for resources protection (CEQ's Forty Most Frequently Asked Questions #19).

In our March 3, 2008 comments on the Phase I Environmental Impact Statement (PEIS) for State Route 11 (SR 11) and the Otay Mesa East Port of Entry (POE), EPA recommended that a full cumulative impact analysis be provided in PEIS since Phase 2 activities, which will include ground disturbing activities, could be defined as "reasonably foreseeable future actions" in this phased approach. Cumulative impacts could then be further refined in the future project-level EIS once more detailed design and construction information is available. The PEIS deferred quantitative cumulative impact analyses for several resource areas until detailed project information is provided in a subsequent project-level Environmental Impact Statement.

Recommendations:

- Assess cumulative impacts and/or refine the previous PEIS cumulative impact analyses in the Tier II Draft Environmental Impact Statement (DEIS) for: 1) resources that are anticipated to be impacted, and 2) resources currently in poor or declining health or at risk, even if activities are expected to be relatively small), including, but not limited to:
 - Growth
 - Environmental Justice
 - Traffic & Transportation
 - Hydrology and Floodplain
 - Water Quality and Storm Water Runoff
 - Hazardous Wastes/Materials
 - Air Quality

EPA is particularly concerned with potential cumulative induced growth and the impacts this growth may have on air quality in the San Diego Air Basin and biological resources

in the area. EPA recommends the use of the June 2005 *Guidance for Preparers of Indirect and Cumulative Impacts Analysis* developed jointly by California Department of Transportation (Caltrans), Federal Highway Administration (FHWA), and EPA [http://www.dot.ca.gov/ser/cumulative_guidance/purpose.htm].

- Identify in the DEIS the project's potential contribution to greenhouse gas emissions and discuss the potential impacts of climate change on the proposed project, if any. Identify if there are specific mitigation measures needed to 1) protect the project from the effects of climate change, 2) reduce the project's adverse air quality effects, and/or 3) promote pollution prevention or environmental stewardship. The State of California has increased its focus on potential climate change and impacts of increasing greenhouse gas emissions. Specifically, AB32 and Executive Order S-3-05 recognize the impact that climate change can have within California and provide direction for future reductions of greenhouse gases. In addition, NEPA requires the disclosure of impacts to resources.

Indirect Growth Impacts

EPA is concerned about the potential indirect impacts (40 CFR Part 1508.8(b)) of this project. New access to undeveloped areas may induce growth on surrounding lands. A growth-related impact analysis assists with compliance requirements of NEPA and the California Environmental Quality Act by considering environmental consequences as early as possible and providing a well-documented and sound basis for government decision making. Include data developed during the analysis to support compliance with the Clean Water Act Section 404(b)(1) Guidelines.

Recommendation:

- To assess indirect growth impacts, use the May 2006 *Guidance for Preparers of Growth-related, Indirect Impact Analyses* [http://www.dot.ca.gov/ser/Growth-related_IndirectImpactAnalysis/gri_guidance.htm] developed jointly by Caltrans, FHWA, and EPA. The guidance covers the subset of indirect effects associated with highway projects that encourage or facilitate land use or development that changes the location, rate, type, or amount of growth. Where impacts are identified, consider steps to avoid or minimize these impacts early and incorporate them into the project and the phased EISs.
- Identify if the proposed roadway will include intersections to existing or other proposed roads. Growth-related impacts may occur near interchanges where neighboring lands may be developed or redeveloped as a result of the project.

Air Quality

The project area is currently classified as a nonattainment area for the federal 8-hour ozone National Ambient Air Quality Standard (NAAQS) and a maintenance area for the 1-hour ozone NAAQS. The area is currently in attainment for the NAAQS for particulate matter under ten microns (PM₁₀) and under 2.5 microns (PM_{2.5}) in diameter and is not in attainment for the state PM₁₀ standard. In November 2006, EPA revised the standard for fine particulate matter (PM_{2.5}). Direct and indirect vehicular emissions are major components of PM_{2.5}. EPA has yet to designate areas of the country for this revised PM_{2.5} standard. San Diego is attaining the

existing PM_{2.5} standard, according to recent data, but levels are near the 35 ug/m³ 24-hr standard. Nationally, monitored air quality values for PM_{2.5} have been trending upwards.

Recommendations:

- Ambient Conditions: The DEIS should include a detailed discussion of ambient air conditions (i.e., baseline or existing conditions), the area's attainment or nonattainment status for all NAAQS, and potential air quality impacts (including cumulative and indirect impacts) from the construction and operation of the project for each fully evaluated alternative. The DEIS should include estimates of all criteria pollutant emissions and diesel particulate matter (DPM). EPA also recommends that the DEIS disclose the available information about the health risks associated with vehicle emissions and how the proposed project will affect current emission levels.
- Relevant Requirements: The DEIS should describe any applicable local, state, or federal requirements. The DEIS should describe applicable requirements for Federal Actions that require FHWA funding or approval and are subject to the Transportation Conformity requirements in 40 CFR part 93, subpart A and for Federal Actions that are subject to the General Conformity requirements in 40 CFR part 93, subpart B.
- Conformity: The DEIS should ensure that the emissions from both the construction and the operational phases of the project conform to the approved State Implementation Plan and do not cause or contribute to violations of the NAAQS. To meet the transportation conformity requirements, the DEIS should demonstrate that the project is included in a conforming transportation plan and transportation improvement program.
- Traffic: The DEIS should describe how any traffic estimates were developed and how these traffic estimates relate to regional transportation estimates from the Metropolitan Planning Organization (MPO). Any supporting documents on which the conclusions of the project's impacts to air quality are based, such as traffic data and other air analyses, should be included in an appendix to the DEIS.
- Construction: The responsible agency should include a Construction Emissions Mitigation Plan in the DEIS and adopt this plan in the Record of Decision (ROD). In addition to all applicable local, state, or federal requirements, EPA recommends that the following mitigation measures be included in the Construction Emissions Mitigation Plan in order to reduce impacts associated with emissions of particulate matter (PM) and other toxics from construction-related activities:

Fugitive Dust Source Controls:

- Stabilize open storage piles and disturbed areas by covering and/or applying water or chemical/organic dust palliative where appropriate. This applies to both inactive and active sites, during workdays, weekends, holidays, and windy conditions.
- Install wind fencing and phase grading operations where appropriate, and operate water trucks for stabilization of surfaces under windy conditions.
- When hauling material and operating non-earthmoving equipment, prevent spillage and limit speeds to 15 miles per hour (mph). Limit speed of earth-moving equipment to 10 mph.

Mobile and Stationary Source Controls:

- Reduce use, trips, and unnecessary idling from heavy equipment.
- Maintain and tune engines per manufacturer's specifications to perform at California Air Resources Board (CARB) and/or EPA certification levels, where applicable, and to perform at verified standards applicable to retrofit technologies. Employ periodic, unscheduled inspections to limit unnecessary idling and to ensure that construction equipment is properly maintained, tuned, and modified consistent with established specifications. CARB has a number of mobile source anti-idling requirements. See their website at: <http://www.arb.ca.gov/msprog/truck-idling/truck-idling.htm>.
- Prohibit any tampering with engines and require continuing adherence to manufacturer's recommendations.
- If practicable, lease new equipment meeting the most stringent of applicable Federal or State Standards. In general, use equipment meeting Tier 3 or greater engine standards and commit to the best available emissions control technology. Tier 3 engine standards are currently available; Tier 4 will be available in the 2009-model year and should be used for project construction equipment to the maximum extent feasible. Lacking availability of non-road construction equipment that meets Tier 3 or greater engine standards, Caltrans should commit to using the best available emissions control technologies on all equipment.
- Utilize CARB and or EPA-verified particulate traps and other appropriate controls where suitable to reduce emissions of DPM and other pollutants at the construction site.

Administrative controls:

- Identify all commitments to reduce construction emissions and update the air quality analysis to reflect additional air quality improvements that would result from adopting specific air quality measures.
- Identify where implementation of mitigation measures is rejected based on economic infeasibility.
- Prepare an inventory of all equipment prior to construction and identify the suitability of add-on emission controls for each piece of equipment before groundbreaking. (Suitability of control devices is based on: whether there is reduced normal availability of the construction equipment due to increased downtime and/or power output, whether there may be significant damage caused to the construction equipment engine, or whether there may be a significant risk to nearby workers or the public.) Meet CARB diesel fuel requirement for off-road and on-highway (i.e., 15 ppm), and where appropriate use alternative fuel sources such as natural gas and electric power.
- Develop a construction traffic and parking management plan that minimizes traffic interference and maintains traffic flow.
- Identify sensitive receptors in the project area, such as children, elderly, and infirm, and specify the means by which you will minimize impacts to these populations. For example, locate construction equipment and staging zones away from sensitive receptors and fresh air intakes to buildings and air conditioners.

Emissions from Idling Trucks

Emissions from heavy duty diesel trucks include direct emissions of particulate matter, as well as precursors to particulate matter, such as sulfur oxides, volatile organic compounds

(VOCs), and nitrogen oxides (NOx). VOCs and NOx are also precursors to ozone. San Diego County has a history of not meeting federal ozone standards. While air quality trends for the San Diego Air Basin for ozone have shown improvement, the area is expected to continue to violate the federal standard for several years, and if that standard is lowered, for longer. Further, as we have stated, PM_{2.5} values are trending upwards. With the expected increase in idling and vehicle miles traveled (VMT) truck emissions, related to the POE and SR11, there will be increased human exposure to these direct emissions and the secondary particulate and ozone pollutants, in an area of already degraded air quality.

The proposed project will likely result in idling of engines as heavy duty diesel trucks wait in queue for inspection by Mexican and U.S. Customs. At the existing Otay POE, trucks sometimes wait for hours before crossing the border. To minimize impacts to air quality, the DEIS should identify specific designs and strategies which can reduce wait time for trucks. Direct emissions from tailpipes, brake surfaces and road wear, as well as indirect, secondary emissions from precursors forming particulate matter and ozone should be minimized.

Recommendations:

- Include truck stop electrification as a mitigation option to reduce emissions from truck idling. Truck stop electrification provides an off-site location for trucks to stop, turn off their engines, and hook to the grid to provide for air conditioning and other electrical needs, thereby eliminating idling.
- Implement other infrastructure- and efficiency-based improvements to reduce idling and improve throughput at the port of entry, such as:
 - A more automated system to streamline truck processing;
 - Incentives to cross the border at different times to stagger the flow of trucks;
 - Removal of barriers to join the U.S. Customs and Border Protection's Fast and Secure Trade (FAST) program and the increased use of the FAST lanes by fleet owners, (FAST, a bilateral initiative between the U.S. and Mexico designed to ensure security and safety while enhancing the economic prosperity of both countries, improves the efficiency of screening and clearing commercial traffic);
 - A sufficient number of lanes to reduce the maximum wait time to an acceptable level, possibly 30 minutes or less.

Mobile Source Air Toxics

Many studies have measured elevated concentrations of pollutants emitted directly by motor vehicles near large roadways. These elevated concentrations generally occur within approximately 200 meters of the road, although the distance may vary depending on traffic and environmental conditions. Pollutants measured with elevated concentrations include benzene, polycyclic aromatic hydrocarbons, carbon monoxide, nitrogen dioxide, black carbon, and coarse, fine, and ultrafine particles. For a thorough review of near-roadway monitoring studies, see Section 3.1.3 of EPA's "Regulatory Impact Analysis: Control of Hazardous Air Pollutants from Mobile Sources" (February 2007, <http://www.epa.gov/otaq/regs/toxics/fr-ria-sections.htm>).

A large number of recent studies have examined the association between living near major roads and different adverse health endpoints. Several well-conducted epidemiologic

studies have shown associations with cardiovascular effects, premature adult mortality, and adverse birth outcomes, including low birth weight and size. Traffic-related pollutants have been repeatedly associated with increased prevalence of asthma-related respiratory symptoms in children. Also, based on toxicological and occupational epidemiologic literature, several of the mobile source air toxics (MSAT), including benzene, 1,3-butadiene, and diesel exhaust, are classified as known and likely human carcinogens. Thus, cancer risk, including childhood leukemia, is a potential concern in near roadway environments. For additional information on MSATs, please see EPA's MSAT website <http://www.epa.gov/otaq/toxics.htm>.

Any change in traffic density resulting from the project is likely to lead to both an increase in MSAT impacts at one location (associated with the new facilities) and a decrease in MSAT impacts at another location (such as the existing Otay Mesa POE facility). The net result of this change may be either unacceptable or beneficial, and is especially dependent on the relative locations of sensitive receptors, but is difficult to determine without further analysis of changes in ambient concentration as a result of each alternative.

Given the significant concerns about adverse health effects from mobile source pollutants and the project's potential for emissions near residential communities and sensitive receptors, EPA recommends performing an analysis of potential MSAT impacts to inform decision-making between project alternatives and to inform avoidance, minimization, and mitigation options. When considering appropriate and useful levels of analysis, EPA recommends that the lead agency consider the following:

- The likelihood of impact and potential magnitude of the effect, including both the magnitude of emissions and the proximity of the project emissions to potential residential and sensitive receptors, such as schools, hospitals, day care facilities, and nursing homes;
- The severity of existing conditions;
- Whether the project is controversial and whether air toxics concerns have been raised by the public for this project or for other projects in the area in the past;
- Whether there is a precedent for analysis for projects of this type, either under NEPA or other environmental laws; and
- Whether the analysis could be useful for distinguishing between alternatives, informing design changes, and targeting mitigation.

For most transportation projects, EPA generally recommends that the following levels of analysis be considered (in order of increasing complexity):

1. Qualitative discussion,
2. Quantify emissions,
3. Toxicity-weight emissions,
4. Dispersion modeling, and
5. Risk assessment.

These analyses are further described in the March 2007 report entitled "Analyzing, Documenting, and Communicating the Impacts of Mobile Source Air Toxic Emissions in the

NEPA Process" conducted for the American Association of State Highway and Transportation Officials (AASHTO) Standing Committee on the Environment and funded by the Transportation Research Board ([http://www.trb.org/NotesDocs/25-25\(18\)_FR.pdf](http://www.trb.org/NotesDocs/25-25(18)_FR.pdf)). Procedures for toxicity-weighting, which EPA has found to be especially useful for the targeting of mitigation, are described in EPA's Air Toxics Risk Assessment Reference Library (Volume 3, Appendix B, beginning on page B-4, http://epa.gov/ttn/fera/data/risk/vol_3/Appendix_B_April_2006.pdf).

These recommendations, and the recommendations included in the report for AASHTO referenced above, differ substantially from the February 2006 FHWA interim guidance on MSAT analysis for transportation projects under NEPA. The analysis of potential MSAT impacts is especially important in California, where the awareness of air toxics impacts, the knowledge of background conditions, and the familiarity with tools to assess potential impacts are very high.

Aquatic Resources

The construction of the roadway and POE facility will likely impact a number of drainages and slope and depressional wetlands, including vernal pools. According to the 1990 Oberbauer report *Areas of Vegetation Communities in San Diego County*, vernal pool habitat loss in San Diego County is estimated at 97 percent. In the Otay Mesa area, vernal pool habitat has a history of severe loss and degradation through human activities and recent urban development. Prioritizing avoidance to these sensitive wetland resources and drainages is critical to ensure that the least environmentally damaging practicable alternative (LEDPA) under Section 404 of the Clean Water Act is selected.

Recommendations:

- To the extent possible, pursue alternatives that avoid direct and indirect impacts to vernal pools and depressional wetlands.
- Avoid or minimize impacts to streams and wetlands. This may include shifting alignments, relocating interchanges to avoid impacts, or using spanned crossings or other less damaging designs, such as bottomless or oversized culverts to minimize impacts.
- Quantify water quality impacts and increases in stormwater runoff to appropriately compare alternatives.
- Minimize surface water contamination from increased runoff from additional impervious surfaces associated with proposed roads, parking lots, and facilities. When considering design alternatives and options to minimize impacts, incorporate innovative solutions to address stormwater and other impacts roads have on the natural environment.
- Consider the following resources to identify strategies for reducing impacts to aquatic resources:

- *Green Highways Partnership*: EPA and the FHWA have coordinated with other agencies in the Green Highways Partnership, a voluntary public/private initiative to integrate transportation functionality and ecological sustainability. Green Highways are defined by an effort to leave the project area "better than before" through community partnering, environmental stewardship, and transportation network improvements in safety and functionality. For innovative solutions to address stormwater or ideas on low impact development, visit the Green Highways Partnership website at <http://www.greenhighways.org/dev/practices.cfm>
- *Using Smart Growth Techniques as Stormwater Best Management Practices*. This is an EPA publication that provides strategies for integrating land-use decisions with stormwater management. Additional information is available online at <http://www.epa.gov/livablecommunities/stormwater.htm>

Biological Resources

The proposed project will impact federal- and state-listed threatened and endangered species in the project vicinity. EPA recommends the following measures to ensure that biological resources are addressed in the DEIS:

- Identify all petitioned and listed threatened and endangered species and critical habitat within the project area and assess which species and critical habitats might be directly or indirectly affected by each alternative.
- Include the status of the Endangered Species Act consultation process.
- Describe efforts to avoid and/or minimize impacts to species and their associated habitats.
- Describe efforts to minimize or avoid impacts to resources and quantify the specific resources avoided (acres of wetlands avoided, etc.).
- In accordance with Executive Order 13112 on Invasive Species, identify proposed methods to minimize the spread of invasive species and use native plant and tree species where revegetation is planned.

Green Building

General Services Administration (GSA) utilizes the Leadership in Energy and Environmental Design (LEED) Green Building Rating System design criteria to help apply principles of sustainable design and development to facilities projects. Using LEED ensures that sustainable strategies are considered in the development of building projects. LEED also serves as a means of evaluating and measuring green building achievements. Beginning in fiscal year (FY) 2003, all new GSA building projects must be certified through the LEED Green Building Rating System and a Silver LEED rating is encouraged. The general design philosophy of the Facilities Standards for the Public Buildings Service – GSA's design standards and criteria for new buildings and alterations – also states this commitment to sustainable design. It includes

provisions for sustainable landscape design, energy efficiency, use of recycled-content products, LEED requirements, and other guidance to help make GSA's facilities more sustainable.

EPA recommends that GSA strive to achieve a Gold rating for the new proposed facility, which may have significant impacts on the environment and human health. Due to the significant expected truck traffic associated with this proposal, particular emphasis on indoor air quality is critical.

Recommendations:

- When considering design alternatives for the POE facility, pursue the construction of a U.S. Green Building Council's LEED Rating System Gold building. Develop a green showcase project that complies with the Federal Leadership in High Performance and Sustainable Buildings Memorandum of Understanding (Available on-line at http://www.fedcenter.gov/_kd/ltems/actions.cfm?action=Show&item_id=4713&destination=ShowItem).
- Encourage a partnership between the U.S. and Mexico construction teams with the U.S. and Mexican Green Building Councils to make the new stations on both sides of the border healthier and to take advantage of economies of scale.
- Encourage the facilities to provide environmental education on features associated with the green POE projects.

GSA has significant experience in green building and has done specific work related to the unique opportunities at border stations, such as the work performed for the Alexandria Bay POE. EPA recommends the agencies host a comprehensive stakeholder engagement charrette and develop implementation teams with participants from the U.S. and Mexico station teams and key participants from GSA's Alexandria Bay POE charrette. For additional information, please see the profile information (p. 17 – 21 of the Appendix) on the Alexandria Bay POE from the December 15, 2005 BuildingGreen, Inc. report entitled *Expanding Our Approach to Sustainable Design Report – An Invitation* available on-line at <http://gyre.buildinggreen.com/report.html>. EPA also recommends encouraging the team to require specific credits in the areas of indoor environmental quality, water efficiency, and energy and atmosphere. For questions on green building, please contact Timonie Hood with EPA Region 9's Solid Waste Office at 415-972-3282.

Cultural Resources

Section 106 of the National Historic Preservation Act of 1966 requires federal agencies to take into account the effects of their actions on historic properties. Potential impacts to historical, archaeological, and cultural resources should be assessed in the DEIS and coordinated with affected Tribes and other interested parties. The methodology used for determining the potential impacts to cultural and historic resources should be clearly documented. The DEIS should also address what mitigation techniques will be taken should sensitive resources be discovered, including recording or removal of materials, and/or changes in project design.

Environmental Justice and Community Involvement

The DEIS should identify whether the proposed alternatives may disproportionately and adversely affect low income or minority populations in the surrounding area and should provide appropriate mitigation measures for any adverse impacts. Executive Order 12898 addresses Environmental Justice in minority and low income populations, and the Council on Environmental Quality has developed guidance concerning how to address Environmental Justice in the environmental review process (<http://ceq.eh.doe.gov/nepa/regs/ej/justice.pdf>). Community involvement activities supporting the project should include opportunities for incorporating public input, especially in Environmental Justice communities, into the facility area design process to promote context sensitive design.



County of San Diego

DEPARTMENT OF PUBLIC WORKS

JOHN L. SNYDER
DIRECTOR

6666 OVERLAND AVE, SUITE 2100
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December 18, 2008

Cesar Perez
Senior Transportation Engineer
Federal Highway Administration
650 Capitol Mall, Suite 4-100
Sacramento, CA 95814

Dear Mr. Perez:

NOTICE OF INTENT FOR STATE ROUTE 11 / PORT OF ENTRY / COMMERCIAL VEHICLE ENFORCEMENT FACILITY - TIER II ENVIRONMENTAL IMPACT STATEMENT

The County of San Diego has reviewed the Notice of Intent (NOI) for the preparation of an Environmental Impact Statement (EIS)/Environmental Impact Report (EIR) for the Tier II State Route 11 (SR-11) highway project, international Port of Entry (POE), and Commercial Vehicle Enforcement Facility (CVEF), issued on October 30, 2008.

County Department of Public Works (DPW) and Department of Planning and Land Use (DPLU) staff have completed their review of the NOI. The comments below are regarding traffic and transportation.

SR-11

1. The EIS/EIR should provide a detailed project description that clearly identifies all of the proposed design/operation features for each project alternative.
2. The EIS/EIR should analyze existing conditions, on opening day for the proposed project, and year 2035, with and without the project. Tier II analysis should consider post-year 2035 build-out/full development forecast projections in developing the ultimate freeway design. The County and City of San Diego should be consulted when determining the build-out potential of future development planned for the Otay Mesa region to determine ultimate right of way (ROW) and design requirements for SR-11.

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Mr. Perez
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3. We encourage continued agency coordination and sharing of data for the development of the traffic analysis.
4. The EIS/EIR should provide a discussion of the project's impacts to local County roads under each of the build-out interchange alternatives.
5. Interim/phased alternatives should also be considered that will maintain access to properties within East Otay Mesa. One such alternative would be provision of an expressway with direct access at Enrico Fermi Road and Siempre Viva Road.
6. The impact of out-of-direction travel to local roadways, in both the unincorporated area and the City of San Diego, should be accounted for in alternatives with limited or no direct access/interchanges to SR-11.
7. The Modified Two-Interchange alternative identified in the Value Analysis Study should be fully assessed and considered in the Tier II EIS/EIR.
8. The EIS/EIR analysis should consider existing interchange spacing and non-standard design issues that were approved for SR-905 and SR-125 when evaluating interchange alternatives for SR-11.
9. The EIS/EIR should verify that the proposed SR-11 project would not preclude the construction of any planned County Circulation Element and Specific Plan roads. The SR-11 design should accommodate all planned County Circulation Element and Specific Plan roads that are proposed to directly connect with and/or traverse SR-11.
10. The EIS/EIR should discuss whether the proposed SR-11 project may require improvements to connecting County roads and/or reconfiguration of County roads. The extent of improvements that may be required to connect and/or parallel County roads should also be discussed.
11. Property owners in the East Otay Mesa Specific Planning area have expressed needs and interest in additional access to the County mesa area in the vicinity of the SR-905/SR-11/SR-125 freeway-to-freeway interchange. Property owners have proposed auxiliary ramps. The EIS/EIR should evaluate and consider additional access alternatives, where feasible, in final design of the freeway-to-freeway interchange. A potential option would be an off-ramp that splits off from the northbound to eastbound SR-905/SR-11 connector, then drops down to connect with the southern terminus of Harvest Road. SR-905 northbound access to Otay Mesa Road should also be considered due to benefit the SR-11/SR-905 connection and access to the East Otay Mesa area.

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12. The County's Guidelines for the Determination of Significance for Transportation and Traffic, adopted September 26, 2006, and revised December 5, 2007, should be used as a guide in preparation of the traffic analysis for impacts to County roads.
13. The EIS/EIR should note encroachment and construction permits would be required for any work performed within the County's ROW.
14. The EIS/EIR should provide a project description that clearly identifies all of the proposed tolling alternatives for SR-11, such as the potential tolling at all of the SR-11 access points and/or tolling at the new POE only.

New Otay Mesa East POE

15. The new Otay Mesa East POE will require an estimated 100 acres for its facilities. The EIS/EIR should identify properties that potentially may be directly impacted by the 100-acre project site.
16. The EIS/EIR should outline the potential process that may be used to acquire the needed 100 acres.
17. The EIS/EIR should provide a detailed project description that clearly identifies all of the proposed POE operational alternatives, such as various passenger and commercial/cargo options, plus the new POE functioning as a toll facility.
18. The EIS/EIR should explain how proposed operations at the new POE would relate to operations at the existing Otay Mesa and San Ysidro POEs.

Commercial Vehicle Enforcement Facility (CVEF)

19. The EIS/EIR should provide map figures that show proposed routes from the new POE to the CVEF, and onto SR-11 or other public roads.
20. The EIS/EIR should identify/assess if truck traffic, especially international commercial trucks, would need to use any County roads to travel from the new POE to the CVEF, and onto SR-11.

PLANNING AND LAND USE

21. The proposed highway, POE and possible CVEF will be on land within the jurisdiction of the County of San Diego. The County is part of the Multiple

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Species Conservation Program (MSCP) and has adopted a sub-area plan (South County Plan) that covers southern San Diego County, including EOM. Tier II EIS/EIR should evaluate a design that minimizes the impacts to the various species that are covered by the MSCP and that inhabit the non-native grasslands and coastal sage scrub within the chosen alignment for SR-11, the chosen location of the POE, and the possible CVEF. The covered species that occur within the proposed project area and its vicinity include:

- Northern harrier (breeding and foraging in non-native grasslands)
 - Swainson's hawk (foraging during winter in non-native grasslands)
 - Ferruginous hawk (foraging in non-native grasslands)
 - Golden eagle (foraging in non-native grasslands) – a pair of golden eagles is known to nest in O'Neal Canyon to the east of the proposed project, and they forage over grasslands on EOM.
 - Burrowing owl (burrows, breeding and foraging in non-native grasslands)
 - Coastal cactus wren (breeding and foraging in cactus patches)
 - California gnatcatcher (breeding and foraging in coastal sage scrub)
 - California rufous-crowned sparrow (breeding and foraging in coastal sage scrub)
 - Mountain lion (foraging)
22. Burrowing owls are of particular concern on EOM. Burrowing owls have declined in San Diego County by about 90% during the past 30 years. At the end of the 1970s and in the early 1980s there were 250-300 breeding pairs, with very few on EOM. Now there are only 40-50 breeding pairs in all of San Diego County, with 25-30 of these pairs on EOM. The proposed SR-11, POE and possible CVEF will impact non-native grassland habitat and possibly burrows. The Tier II EIS should evaluate a design that minimizes impacts to the burrowing owl and its non-native grassland habitat.
23. The County of San Diego, U.S. Fish and Wildlife Service and California Department of Fish and Game have identified two burrowing owl nodes for preserving non-native grassland on EOM. The attached map shows the two burrowing owl nodes (pink circles): one just west of Donovan State Detention Facility along the north side of EOM and one at the very southeastern corner of the mesa. Much of the land in the northern node is already preserved by the County and Caltrans and includes the Caltrans restoration site for SR-125. Other portions are being purchased by other developers needing mitigation on East Otay Mesa. In the southeastern node, none of the land has been designated for preservation yet. The County encourages Caltrans and the Department of General Services to consider preservation of lands in these areas as mitigation for impacts to non-native grasslands and possibly coastal sage scrub by the proposed project.

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24. The County is concerned about access from SR-11 to commercial and industrial lands on East Otay Mesa. These land uses are important to traffic coming north from Mexico and include loading and unloading facilities, truck parking and container storage, and other necessities of international commerce. The County requests that Caltrans contact the Department of Planning and Land Use and the Department of Public Works to coordinate the location of interchanges on SR-11 that will provide access to East Otay Mesa.

The County of San Diego appreciates the opportunity to participate in the development and environmental review process for this project, and close coordination and partnership in the planning and development of the SR-11/POE/CVEF project. We look forward to receiving future meeting correspondence, environmental documents and/or providing additional assistance at your request related to this project. If you have any questions regarding these comments, please contact Richard Chin, Associate Transportation Specialist at (858) 874-4203.

Sincerely,



JOHN L. SNYDER, Director
Department of Public Works

JLS:DKT:le

cc: Susanne Glasgow, Deputy District Director, Environmental Division, Caltrans – California Department of Transportation, 4050 Taylor Street, San Diego, CA 92110
Kelly Finn, Caltrans – Caltrans, 4050 Taylor Street, San Diego, CA 92110
Richard Chin, Michael Robinson, Bob Goralka, Francisco "Nick" Ortiz – Department of Public Works
Bobbie Stephenson, Leann Carmichael, Tom Oberbauer, Bob Citrano – Department of Planning and Land Use



DEPARTMENT OF THE ARMY

Los Angeles District, Corps of Engineers
San Diego Section, Carlsbad Field Office
6010 Hidden Valley Road, Suite 105
Carlsbad, California 92011

October 23, 2009

REPLY TO ATTENTION OF:

Office of the Chief
Regulatory Division

Susanne Glasgow
Deputy District Director, Environmental
Department of Transportation, District 11
4050 Taylor Street, MS-242
San Diego, California 92110

Dear Ms. Glasgow: 

In response to your request on September 30, 2009, the U. S. Army Corps of Engineers (USACE) was asked to provide comments for the Purpose and Need Statement and Project Alternatives for the State Route 11/Otay Mesa East Port of Entry (Project). We, as a cooperating agency, pursuant to the National Environmental Policy Act (NEPA), Clean Water Act Section 404 Memorandum of Understanding (404 MOU) for Federal Aid Surface Transportation Projects in California, and Section 6002 of the Safe, Accountable, Flexible, and Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), are providing our comments in the following paragraphs.

Caltrans indicated during the Programmatic Environmental Impact Statement (PEIS) that NEPA for a 404(b)(1) permit would not be triggered because less than 5 acres of impacts would occur to waters of the U.S. and because the early coordination would occur through SAFETEA-LU. We note that under USACE permit requirements, impacts to vernal pools require an Standard Individual Permit (IP), which in addition to a 404(b)(1) analysis, necessitate development, publishing, and adopting either an Environmental Assessment (EA) or an EIS. Therefore, the USACE anticipates adoption of the EIS for this project as a cooperating agency as long as the document meets USACE criteria for an IP. At this time, it appears that a Project Purpose Statement has not been included in the *Draft Purpose and Need for the Project* memorandum dated September 9, 2009. Therefore, we are providing comments to Caltrans for the objectives stated under the heading *Purpose of the Project* on page 2 of the memorandum and anticipate that these objectives would be used in the future to prepare a narrative Project Purpose Statement.

The Project Purpose objectives are stated as follows:

- *Increase inspection processing capacities for commercial and personal vehicles and pedestrians in San Diego/Tijuana region;*
- *Reduce northbound vehicle and pedestrian queues and wait times to cross the border at other POEs in the region;*

-2-

- Accommodate projected increases in international trade and personal cross-border travel in the region;
- Contribute to reductions in congestion at existing POEs and along regional transportation infrastructure; and
- Allow southbound vehicle and pedestrian trips.

To meet USACE requirements under a NEPA analysis, a Project Purpose Statement needs to support avoidance or minimization analysis for impacts to vernal pools and other waters of the U.S. By providing an additional objective to the Project Purpose Statement, the Project Alternatives can be fully analyzed to meet the objective. We suggest the addition of an objective that includes minimizing impacts to the aquatic environment.

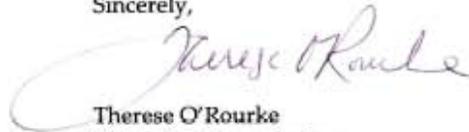
We note that the Project Alternatives appear incomplete and generally discuss the differences between the interchange structures (IC). Additional biological and project design information should be included in each Project Alternative. For example, we should include which alternatives avoid or minimize impacts to waters of the U.S., the design and number of stream crossings (e.g., soft-bottomed crossings, half culverts or box crossings with no cement bottom), and other pertinent water related concerns. Sometimes it is helpful to include a Conservation Alternative for the decision maker to be able to draw on to ensure avoidance and minimization of impacts to the environment.

In the past, we have found it helpful to develop a Project matrix summary document to be able to capture and describe the differences between Project Alternatives. Matrices are sometimes included in the first chapter of an EIS. We suggest that one be prepared and provided to the cooperating agencies for their consideration and review. The agencies could then ensure that all components and biological impacts of the Project are addressed in the selection and description of Alternatives. The project matrix would summarize impacts to biological attributes (e.g., wildlife and vernal pools) of the project.

Finally, we note that the Otay Mesa East Port of Entry Project footprint identified in the figures that were provided to USACE is larger than what was identified in the PEIS. If the Port of Entry footprint is larger, additional surveys, delineations, or other biological data may be required. Two indicators that typically suggest water presence were noted in the larger footprint, soil type and tamarisk scrub. Based on this notation, we need additional biological information regarding the larger Project footprint.

If you have any questions, please contact Michelle Lee Mattson of my staff at 760.602.4835 or via e-mail at Michelle.L.Mattson@usace.army.mil and refer file No. SPL-2006-00486-MLM.

Sincerely,



Therese O'Rourke
Chief, San Diego Section
Regulatory Division

Appendix B Personnel and Survey Dates

This appendix includes information for surveys conducted in 2006, 2008, and 2009 by HELIX Environmental Planning, Inc. in the biological study area (BSA) for SR-11 and the Otay Mesa East Port of Entry project. Additional surveys that were conducted prior to these are listed in Section 2.2, Studies Required, in the main body of this Natural Environment Study.

Table B-1 Map Vegetation/Update Mapped Vegetation		
Date	Personnel	Comments
May 26, 2006	Stacy Nigro	
October 28 and 29, 2008	Larry Sward, Kathy Pettigrew	
September 23, 2009	Stacy Nigro	Between the two U.S.-Mexico international border fences

Table B-2 Jurisdictional Delineation	
Date	Personnel
April 20 and 21, 2006	Stacy Nigro
March 17, 2009	Stacy Nigro, Kimberly Davis

Table B-3 Vernal Pool/Basin Mapping		
Date	Personnel	Comments
Six visits from March 23 to May 24, 2006	Jason Kurnow, Dale Ritenour	During the wet season fairy shrimp survey
Seven visits from December 16, 2008 to March 19, 2009	Jason Kurnow, Amy Mattson	During the wet season fairy shrimp survey

Table B-4 Vernal Pool/Basins with Fairy Shrimp Watershed Mapping		
Date	Personnel	Comments
During the period March 23 to May 24, 2006	Dale Ritenour	During the wet season fairy shrimp survey
During the period December 16, 2008 to March 19, 2009	Jason Kurnow, Dale Ritenour	During the wet season fairy shrimp survey

Table B-5 Special Status Plant Species		
Date	HELIX Biologists	Comments
May 15, 2006	Sally Trnka, Dale Ritenour, Jasmine Watts	General rare plant survey
May 16, 2006	Sally Trnka, Dale Ritenour	General rare plant survey
May 22, 2006	Deborah Leonard, Dale Ritenour, Jasmine Watts	General rare plant survey
June 23, 2006	Sally Trnka, Doug Allen, Dale Ritenour, Jasmine Watts	Focused Otay tarplant (<i>Deinandra conjugens</i>) survey
April 23, 2009	Larry Sward, Deborah Leonard, Dale Ritenour, Kimberly Davis	General rare plant survey
April 24, 2009	Larry Sward, Deborah Leonard, Dale Ritenour, Kimberly Davis	General rare plant survey
June 18, 2009	Larry Sward, Sally Trnka, Dale Ritenour, Jasmine Watts	Focused Otay tarplant survey
June 19, 2009	Larry Sward, Sally Trnka, Dale Ritenour, Jasmine Watts	Focused Otay tarplant survey

Table B-6 Wet Season Fairy Shrimp	
Date	Personnel
Six visits from March 23 to May 24, 2006	Jason Kurnow, Dale Ritenour
Seven visits from December 16, 2008 to March 19, 2009	Jason Kurnow, Amy Mattson

Table B-7 Dry Season Fairy Shrimp	
Date	Personnel
July 11, 2006	Jason Kurnow, Dale Ritenour
October 27, 2008	Jason Kurnow, Dale Ritenour
June 22, 2009	Dale Ritenour, Amy Mattson

**Table B-8
2006 Quino Checkerspot Butterfly**

SITE VISIT DATE (see last column)	SECTION	BIOLOGIST	ACRES	START/END TIMES	WEATHER CONDITIONS*		COMMENTS
					Start	End	
1 4/12/2006	H	Alison Fischer	53	0900/1245	Clear, 68°F, wind 0-5 mph	Clear, 73°F, wind 0-5 mph	First day of Site Visit 1
	I	Deborah Leonard	47	0900/1330	Clear, 72°F, wind 0 mph	Clear, 78°F, wind 0-2 mph	
	J	Jasmine Watts	57	0900/1245	Clear, 68°F, wind 0 mph	Clear, 73°F, wind 0-5 mph	
	K	Kathy Pettigrew	65	0900/1330	Clear, 72°F, wind 0-2 mph	Clear, 78°F, wind 0-2 mph	
	L	Rob Hogenauer	60	0850/1305	Clear, 67°F, wind 0-2 mph	Clear, 74°F, wind 2-4 mph	
	M	Stacy Nigro	53	0925/1330	Clear, 61°F, wind 0-2 mph	Clear, 77°F, wind 0-2 mph	
1† 4/13/2006	N	Roger Ditrick	44	0900/1330	Clear, 68°F, wind 0-5 mph	Clear, 73°F, wind 0-5 mph	Second day of Site Visit 1
	A	Deborah Leonard	35	0845/1115	Clear, 63°F, wind 0-2 mph	Clear, 76°F, wind 0-2 mph	
	B	Kathy Pettigrew	37	0845/1115	Clear, 63°F, wind 0-2 mph	Clear, 76°F, wind 0-2 mph	
	C	Stacy Nigro	41	0830/1210	Clear, 62°F, wind 0 mph	Clear, 82°F, wind 0-3 mph	
	D	Sally Trnka	58	0830/1235	Clear, 62°F, wind 0-2 mph	Clear, 82°F, wind 2-5 mph	
	E	Heather Haney	60	0845/1255	Clear, 66°F, wind 0-2 mph	Clear, 82°F, wind 0-5 mph	
2 4/17/2006	F	Roger Ditrick	60	0845/1255	Clear, 66°F, wind 0-2 mph	Clear, 82°F, wind 2-5 mph	Canceled due to weather
	G	Jasmine Watts	60	0845/1255	Clear, 66°F, wind 0 mph	Clear, 82°F, wind 0-5 mph	
2 4/18/2006	H	Alison Fischer	53	0900/1300	Clear, 60°F, wind 0-5 mph	Clear, 76°F, wind 4-8 mph	First day of Site Visit 2
	I	Brian Parker	47	0900/1320	Clear, 62°F, wind 1-5 mph	Clear, 72°F, wind 2-8 mph	
	J	Doug Allen	57	0900/1300	Clear, 60°F, wind 2-3 mph	Clear, 76°F, wind 4-5 mph	
	K	Kathy Pettigrew	65	0900/1330	Clear, 61°F, wind 0-3 mph	Clear, 78°F, wind 3-5 mph	
	L	Amy Mattson	60	0850/1325	Clear, 62°F, wind 0-2 mph	Clear, 78°F, wind 3-8 mph	
	M	Stacy Nigro	53	0850/1325	Clear, 62°F, wind 0-2 mph	Clear, 78°F, wind 3-8 mph	
	N	Roger Ditrick	44	1345/1700	Clear, 76°F, wind 6-10 mph	Clear, 69°F, wind 3-6 mph	

**Table B-8 (cont.)
2006 Quino Checkerspot Butterfly**

SITE VISIT DATE (see last column)	SECTION	BIOLOGIST	ACRES	START/END TIMES	WEATHER CONDITIONS*		COMMENTS
					Start	End	
2 4/19/2006	A	Brian Parker	35	0915/1145	Clear, 65°F, wind 0-3 mph	Clear, 72°F, wind 3-6 mph	Second day of Site Visit 2
	B	Doug Allen	37	0915/1215	Clear, 65°F, wind 2-3 mph	Clear, 72°F, wind 3-6 mph	
	C	Dale Ritenour	41	0915/1200	Clear, 65°F, wind 2-4 mph	Clear, 72°F, wind 3-6 mph	
	D	Alison Fischer	58	0920/1320	Clear, 66°F, wind 0-2 mph	Clear, 76°F, wind 2-6 mph	
	E	Heather Haney	60	0900/1300	Clear, 66°F, wind 0-6 mph	Clear, 75°F, wind 2-7 mph	
	F	Roger Ditrack	60	0915/1315	Clear, 66°F, wind 2-5 mph	Clear, 75°F, wind 2-7 mph	
	G	Amy Mattson	60	0920/1320	Clear, 66°F, wind 0-2 mph	Clear, 75°F, wind 2-6 mph	
3 4/24/2006	H	Heather Haney	53	0900/1300	Clear, 63°F, wind 0-2 mph	Clear, 70°F, wind 3-10 mph	First day of Site Visit 3
	I	Deborah Leonard	47	0915/1330	Clear, 68°F, wind 3-5 mph	Clear, 72°F, wind 5-15 mph	
	J	Jasmine Watts	57	0900/1300	Clear, 63°F, wind 0-3 mph	Clear, 70°F, wind 3-10 mph	
	K	Kathy Pettigrew	65	0915/1335	Clear, 68°F, wind 3-5 mph	Clear, 72°F, wind 5-18 mph	
	L	Doug Allen	60	0930/1350	Clear, 67°F, wind 2-5 mph	Clear, 68°F, wind 10-14 mph	
	M	Amy Mattson	53	0930/1350	Clear, 67°F, wind 0-5 mph	Clear, 68°F, wind 9-12 mph	
3 4/25/2006							Canceled due to weather
							Canceled due to weather
3 4/29/2006							
	A	Deborah Leonard	35	1130/1400	Clear, 75°F, wind 0-2 mph	Clear, 78°F, wind 3-5 mph	Second day of Site Visit 3
	B	Kathy Pettigrew	37	1130/1400	Clear, 75°F, wind 0-3 mph	Clear, 78°F, wind 3-5 mph	
	C	Stacy Nigro	41	1130/1440	Clear, 74°F, wind 0 mph	Clear, 73°F, wind 2-5 mph	
	D	Dale Ritenour	58	1145/1545	Clear, 76°F, wind 0-2 mph	Clear, 73°F, wind 4-8 mph	
	E	Brian Parker	60	1140/1545	Clear, 75°F, wind 0-2 mph	Clear, 73°F, wind 4-8 mph	
	F	Roger Ditrack	60	1145/1545	Clear, 75°F, wind 2-5 mph	Clear, 73°F, wind 4-8 mph	
G	Doug Allen	60	1145/1545	Clear, 75°F, wind 2-3 mph	Clear, 73°F, wind 4-8 mph		

**Table B-8 (cont.)
2006 Quino Checkerspot Butterfly**

SITE VISIT DATE (see last column)	SECTION	BIOLOGIST	ACRES	START/END TIMES	WEATHER CONDITIONS*		COMMENTS
					Start	End	
4 5/1/2006	H	Sally Trnka	53	1030/1430	Clear, 76°F, wind 0-5 mph	Hazy, 74°F, wind 2-7 mph	First day of Site Visit 4
	I	Deborah Leonard	47	1015/1412	Clear, 86°F, wind 0-3 mph	Hazy, 79°F, wind 3-5 mph	
	J	Jasmine Watts	57	1030/1430	Clear, 76°F, wind 0-5 mph	Hazy, 74°F, wind 2-7 mph	
	K	Heather Haney	65	1015/1435	Clear, 82°F, wind 0-4 mph	Hazy, 79°F, wind 2-5 mph	
	L	Brian Parker	60	1035/1440	Clear, 76°F, wind 4-6 mph	40% Cloudy, 74°F, wind 2-7 mph	
	M	Alison Fischer	53	1035/1435	Hazy, 76°F, wind 0-5 mph	Hazy, 74°F, wind 2-7 mph	
	N	Roger Ditrick	44	1030/1630	10% Cloudy, 73°F, wind 5-8 mph	10% Cloudy, 70°F, wind 6-9 mph	
4 5/3/2006							Canceled due to weather
4 5/4/2006							Canceled due to weather
4 5/5/2006							Canceled due to weather
4 5/7/2006	A	Deborah Leonard	35	1045/1315	Overcast, 72°F, wind 3-5 mph	Overcast, 75°F, wind 3-5 mph	
	B	Kathy Pettigrew	37	1045/1315	Overcast, 72°F, wind 3-5 mph	Overcast, 75°F, wind 3-5 mph	
	C	Heather Haney	41	1045/1340	75% Cloudy, 71°F, wind 3-8 mph	75% Cloudy, 74°F, wind 2-5 mph	
	D	Roger Ditrick	58	1135/1540	80% Cloudy, 71°F, wind 3-8 mph	5% Cloudy, 75°F, wind 3-8 mph	

**Table B-8 (cont.)
2006 Quino Checkerspot Butterfly**

SITE VISIT DATE (see last column)	SECTION	BIOLOGIST	ACRES	START/END TIMES	WEATHER CONDITIONS*		COMMENTS
					Start	End	
4 5/7/2006 (cont.)	E	Brian Parker	60	1050/1450	80% Cloudy, 72°F, wind 6-10 mph	Clear, 77°F, wind 4-7 mph	
	F	Amy Mattson	60	1050/1450	80% Cloudy, 72°F, wind 6-10 mph	Clear, 77°F, wind 7 mph	
	G	Jasmine Watts	60	1050/1450	Cloudy, 72°F, wind 6-10 mph	Hazy, 77°F, wind 4-7 mph	
5 5/9/2006	H	Amy Mattson	53	1110/1515	Hazy, 76°F, wind 0-3 mph	Clear, 75°F, wind 2-5 mph	First day of Site Visit 5
	I	Deborah Leonard	47	1030/1430	Hazy, 75°F, wind 0-5 mph	Clear, 79°F, wind 3-5 mph	
	J	Doug Allen	57	1110/1515	Clear, 76°F, wind 0-3 mph	Clear, 74°F, wind 2-5 mph	
	K	Heather Haney	65	1030/1450	Hazy, 75°F, wind 0-2 mph	20% Cloudy, 80°F, wind 2-4 mph	
	L	Dale Ritenour	60	1115/1515	Clear, 70°F, wind 2-4 mph	Clear, 74°F, wind 4-6 mph	
	M	Stacy Nigro	53	1115/1510	Hazy, 70°F, wind 2-4 mph	10% Cloudy, 74°F, wind 2-4 mph	
5 5/10/2006	N	Brian Parker	44	1120/1425	10% Cloudy, 68°F, wind 0-2 mph	Clear, 75°F, wind 2-4 mph	Second day of Site Visit 5
	A	Deborah Leonard	35	1045/1315	Hazy, 74°F, wind 0-5 mph	Clear, 84°F, wind 3-5 mph	
	B	Kathy Pettigrew	37	1045/1345	Clear, 72°F, wind 0-5 mph	Clear, 84°F, wind 3-5 mph	
	C	Heather Haney	41	1045/1400	Hazy, 76°F, wind 0-3 mph	Clear, 85°F, wind 2-8 mph	
	D	Sally Trnka	58	1100/1500	Clear, 72°F, wind 2-5 mph	Clear, 77°F, wind 3-8 mph	
	E	Brian Parker	60	1100/1500	Clear, 72°F, wind 2-5 mph	Clear, 77°F, wind 2-5 mph	
	F	Alison Fischer	60	1105/1505	Clear, 72°F, wind 2-5 mph	Clear, 78°F, wind 2-5 mph	
G	Dale Ritenour	60	1100/1500	Clear, 72°F, wind 2-4 mph	Clear, 78°F, wind 0-2 mph		

*Temperature was taken on the ground in the shade
†THELIX supervised individual, Shelby Howard, was present during this survey

Table B-9
2009 Quino Checkerspot Butterfly

SITE VISIT	SECTION ¹	BIOLOGIST	ACRES	START/END TIMES	WEATHER CONDITIONS ²		COMMENTS
					Start	End	
1 2/25/09	A	Parker	60.1	1025/1435	20% cloudy, 64°F, wind 2-3 mph	10% cloudy, 61°F, wind 3-8 mph	First day of Site Visit 1
	B	Trnka	62.79	1030/1445	20% cloudy, 64°F, wind 0-3 mph	10% cloudy, 63°F, wind 3-8 mph	
	C	Varner	62.96	1030/1445	20% cloudy, 64°F, wind 0-2 mph	10% cloudy, 63°F, wind 5-10 mph	
	D	Leonard	62.41	1015/1430	Mostly clear, 64°F, wind 0-2 mph	Clear, 62°F, wind 4-8 mph	
	E	Nigro	60.84	1015/1430	Mostly clear, 64°F, wind 0-4 mph	Clear, 62°F, wind 4-8 mph	
1 2/26/09	F	Trnka	60.22	0945/1415	Clear, 65°F, wind 0-2 mph	Clear, 66°F, wind 2-7 mph	Second day of Site Visit 1
	G	Leonard	59.0	0945/1415	Clear, 65°F, wind 0-2 mph	Clear, 66°F, wind 3-8 mph	
	I and J	Varner, Parker, Nigro	99.4	0945/1400	5% cloudy, 65°F, wind 0-4 mph	Clear, 69°F, wind 2-8 mph	
2 3/3/09	A	Ritenour ³	60.1	1010/1430	30% cloudy, 73°F, wind 0-3 mph	10% cloudy, 72°F, wind 2-6 mph	First day of Site Visit 2
	B	Watts	62.79	1010/1430	30% cloudy, 74°F, wind 0-3 mph	15% cloudy, 72°F, wind 3-6 mph	
	C	Varner	62.96	1010/1430	30% cloudy, 74°F, wind 0-3 mph	10% cloudy, 72°F, wind 2-6 mph	
	D	Leonard	62.41	1000/1415	Mostly clear, 71°F, wind 0 mph	Mostly clear, 70°F, wind 5-12 mph	
	E	Mattson	60.84	1000/1410	Mostly clear, 71°F, wind 0 mph	Hazy, 70°F, wind 2-5 mph	
2 3/4/09	F	Trnka	60.22	1015/1420	Clear, 62°F, wind 0-2 mph	20% cloudy, 70°F, wind 0-5 mph	Second day of Site Visit 2
	G	Leonard	59.0	1015/1415	Clear, 69°F, wind 0-2 mph	Mostly clear, 70°F, wind 3-5 mph	
	I and J	Ritenour, Parker, Nigro	99.4	1000/1150 1220/1400	Clear, 65°F, wind 0-3 mph	Clear, 68°F, wind 4-6 mph	

**Table B-9 (cont.)
2009 Quino Checkerspot Butterfly**

SITE VISIT	SECTION ¹	BIOLOGIST	ACRES	START/END TIMES	WEATHER CONDITIONS ²		COMMENTS
					Start	End	
3 3/10/09	A	Parker	60.1	1020/1440	Clear, 62°F, wind 0-4 mph	Clear, 62°F, wind 4-6 mph	First day of Site Visit 3
	B	Mattson	62.79	1020/1435	Clear, 62°F, wind 0-4 mph	Clear, 62°F, wind 5-9 mph	
	C	Varner ³	62.96	1020/1435	Clear, 62°F, wind 0-3 mph	Clear, 62°F, wind 3-6 mph	
	D	Leonard	62.41	1015/1430	Clear, 62°F, wind 0-2 mph	Clear, 64°F, wind 2-6 mph	
	E	Nigro	60.84	1015/1430	Clear, 62°F, wind 0-2 mph	Clear, 64°F, wind 3-5 mph	
3 3/16/09	F	Trnka	60.22	1015/1430	Clear, 66°F, wind 0-2 mph	Clear, 71°F, wind 2-7 mph	Second day of Site Visit 3
	G	Leonard	59.0	1015/1430	Clear, 66°F, wind 0-2 mph	Clear, 71°F, wind 3-10 mph	
	I and J	Mattson, Parker, Nigro	99.4	1015/1420	Clear, 65°F, wind 0-2 mph	Clear, 71°F, wind 4-10 mph	
4 3/17/09	A	Hogenauer	60.1	1020/1435	Clear, 69°F, wind 0-2 mph	Clear, 81°F, wind 5-7 mph	First day of Site Visit 4
	B	Ritenour	62.79	1020/1435	Clear, 69°F, wind 0-2 mph	Clear, 81°F, wind 5-7 mph	
	C	Varner	62.96	1020/1435	Clear, 69°F, wind 0-2 mph	Clear, 81°F, wind 5-7 mph	
	D	Mattson	62.41	1010/1430	Clear, 68°F, wind 0-3 mph	Clear, 82°F, wind 2-7 mph	
	E	Trnka	60.84	1010/1430	Clear, 68°F, wind 0-2 mph	Clear, 82°F, wind 2-7 mph	
4 3/18/09	F	Ritenour ³	60.22	1000/1225 1315/1515	Clear, 69°F, wind 0-2 mph	Clear, 80°F, wind 3-5 mph	Second day of Site Visit 4
	G	Nigro ⁴	59.0	1000/1225 1315/1515	Clear, 69°F, wind 0-2 mph	Clear, 80°F, wind 3-5 mph	
	I and J	Varner, Parker	99.4	1015/1430	Clear, 70°F, wind 2-4 mph	Clear, 76°F, wind 2-6 mph	

**Table B-9 (cont.)
2009 Quino Checkerspot Butterfly**

SITE VISIT	SECTION ¹	BIOLOGIST	ACRES	START/END TIMES	WEATHER CONDITIONS ²		COMMENTS
					Start	End	
5 3/23/09	A	Ritenour	60.1	1050/1505	Clear, 61°F, wind 0-2 mph	Clear, 70°F, wind 8-12 mph	First day of Site Visit 5
	B	Mattson	62.79	1050/1505	Clear, 63°F, wind 0-1 mph	Clear, 70°F, wind 8-12 mph	
	C	Parker	62.96	1050/1510	Clear, 63°F, wind 0-1 mph	Clear, 70°F, wind 8-12 mph	
	D	Leonard	62.41	1030/1445	Clear, 63°F, wind 0-4 mph	Clear, 66°F, wind 3-12 mph	
	E	Nigro	60.84	1030/1445	Clear, 63°F, wind 0-4 mph	Clear, 66°F, wind 4-12 mph	
5 3/25/09	F	Parker	60.22	1000/1405	Clear, 70°F, wind 0-2 mph	Clear, 83°F, wind 3-5 mph	Second day of Site Visit 5
	G	Leonard	59.0	1000/1400	Clear, 70°F, wind 2-4 mph	Clear, 79°F, wind 3-5 mph	
	I and J	Varner, ³ Ritenour ⁴	99.4	1000/1430	Clear, 72°F, wind 0-2 mph	Clear, 83°F, wind 4-8 mph	
6 3/31/09	A	Parker	60.1	1015/1430	Clear, 68°F, wind 4-7 mph	Clear, 73°F, wind 3-6 mph	First day of Site Visit 6
	B	Varner	62.79	1015/1430	Clear, 68°F, wind 4-7 mph	Clear, 73°F, wind 3-6 mph	
	C	Mattson	62.96	1015/1430	Clear, 68°F, wind 4-7 mph	Clear, 73°F, wind 3-6 mph	
	D	Ritenour ³	62.41	1020/1450	Clear, 70°F, wind 0-3 mph	Clear, 76°F, wind 5-8 mph	
	E	Watts	60.84	1020/1435	Clear, 70°F, wind 0-4 mph	Clear, 77°F, wind 3-7 mph	
6 4/1/09	F	Trnka	60.22	1020/1430	20% cloudy, 66°F, wind 2-5 mph	Clear, 73°F, wind 3-7 mph	Second day of Site Visit 6
	G	Varner	59.0	1020/1430	20% cloudy, 66°F, wind 2-5 mph	Clear, 73°F, wind 3-7 mph	
	I and J	Ritenour, ⁴ Parker	99.4	1030/1415	40% cloudy, 66°F, wind 3-6 mph	Clear, 72°F, wind 4-8 mph	

**Table B-9 (cont.)
2009 Quino Checkerspot Butterfly**

SITE VISIT	SECTION ¹	BIOLOGIST	ACRES	START/END TIMES	WEATHER CONDITIONS ²		COMMENTS
					Start	End	
7 4/7/09	A	Parker	60.1	1000/1410	Clear, 68°F, wind 2-5 mph	Clear, 68°F, wind 3-7 mph	First day of Site Visit 7
	B	Mattson	62.79	1000/1415	Clear, 68°F, wind 2-5 mph	Slight haze, 68°F, wind 3-7 mph	
	C	Varner	62.96	1000/1415	Clear, 68°F, wind 2-5 mph	5% cloudy, 68°F, wind 3-7 mph	
	D	Leonard	62.41	1000/1415	Clear, 72°F, wind 2-4 mph	Clear, 70°F, wind 3-5 mph	
	E	Nigro	60.84	1000/1415	Clear, 72°F, wind 2-4 mph	Slight haze, 74°F, wind 4-10 mph	
7 4/16/09	F	Varner	60.22	1030/1435	30% cloudy, 64°F, wind 4-8 mph	Clear, 69°F, wind 2-4 mph	Second day of Site Visit 7
	G	Leonard	59.0	1030/1430	Mostly clear, 67°F, wind 0-4 mph	Clear, 70°F, wind 3-10 mph	
	I and J	Parker, Nigro	99.4	1030/1435	50% cloudy, 64°F, wind 4-8 mph	Clear, 68°F, wind 5-8 mph	

¹Access was denied to Section H.

²Temperature was taken on the ground in the shade. When multiple surveyors were present in a section, the data presented is only from one of the surveyors.

³HELIX supervised individual, Kim Davis, was present during this site visit.

⁴HELIX supervised individual, Jason Kurnow, was present during this site visit.

Table B-10 2006 Coastal California Gnatcatcher			
Survey Date/ Biologists	Start/Stop Times	Acres (ac) Surveyed Per Hr/ Coverage Rate Per Biologist	Weather Conditions Start/Stop
July 12, 2006/ Deborah Leonard Jason Kurnow	0830/1045	28 ac/6.2 ac	Clear, 74°F, wind 3-5 mph / Clear, 80°F, wind 2-4 mph
July 19, 2006/ Deborah Leonard Jason Kurnow	0845/1015	28 ac/9.3 ac	Overcast, 73°F, wind 3-5 mph / Hazy, 76°F, wind 3-5 mph
July 26, 2006/ Deborah Leonard Jason Kurnow	0930/1045	28 ac/11.2 ac	Hazy, 82°F, no wind / Hazy, 89°F, wind 0-2 mph

Table B-11 2009 Coastal California Gnatcatcher				
Survey Date	Biologist	Start/ Stop Times	Approx. Acres Surveyed */Acres per Hour	Weather Conditions
Site Visit 1				
February 27, 2009	Kurnow	0945/1045	4.2 acres/ 4.2 acres	45% cloud cover, 62°F, wind 1-3 mph / 85% cloud cover, 62°F, wind 2-5 mph
Site Visit 2				
March 6, 2009	Kurnow	0845/0945	4.2 acres/ 4.2 acres	40% cloud cover, 61°F, wind 1-3 mph / 40% cloud cover, 64°F, wind 1-3 mph
Site Visit 3				
March 13, 2009	Kurnow	0900/1000	4.2 acres/ 4.2 acres	Clear, 60°F, wind 3-5 mph / Clear, 62°F, wind 3-5 mph

*Does not include Diegan coastal sage scrub located in areas where access was not granted

Date	Biologists	Time*	Weather Conditions
6/14/06	D. Leonard K. Pettigrew H. Haney J. Kurnow	0715-1130	Clear, 21.7-23.9°C (71-75°F), wind 3.2-12.9 km per hour (2-8 mi per hour)
6/15/06	D. Leonard J. Kurnow S. Howard	0715-1000	Clear, 22.2-23.9°C (72-75°F), wind 0-6.4 km per hour (0-4 mi per hour)
6/21/06	D. Leonard K. Pettigrew H. Haney S. Howard	0700-1200	Overcast then clear, 16.7-23.9°C (62-75°F), wind 0-6.4 km per hour (0-4 mi per hour)
6/22/06	D. Leonard H. Haney J. Kurnow J. Watts	0715-1145	Overcast then clear, 17.2-23.3°C (63-74°F), wind 0-6.4 km per hour (0-4 mi per hour)

*Approximate time; biologists surveyed separately.

Survey Number*	Date	Biologists**	Time	Weather Conditions
1	4/30/09	Parker Mattson Davis	0500/1100	Clear, 43-66° F (degrees Fahrenheit), wind 0-5 mph (miles per hour)
1	5/5/09	Leonard Parker Mattson Davis	0500/1100	Clear, 58-74° F, wind 2-4 mph
2	5/13/09	Leonard Parker Kurnow Davis	1330/1930	Clear, 70-64° F, wind 0-6 mph
2	5/14/09	Leonard Ritenour Kurnow Davis	1340/1930	Clear, 71-68° F, wind 3-8 mph
3	5/20/09	Leonard Ritenour Davis	0445/1045	Overcast-clear, 61-75° F, wind 0-4 mph
3	5/21/09	Leonard Davis	0445/1045	Overcast-clear, 60-70° F, wind 0-5 mph

Table B-13 (cont.) 2009 Burrowing Owl				
Survey Number*	Date	Biologists**	Time	Weather Conditions
3	5/23/09	Parker	1430/2030	Clear-partly cloudy, 74-60° F, wind 2-5 mph
4	5/29/09	Leonard Davis	0500/1100	Overcast, 58-63° F, wind 0-2 mph
4	6/1/09	Leonard Parker	0500/1100	Overcast, 59-63° F, wind 0-4 mph
4	6/6/09	Parker	1500/2050	Partly cloudy, 71-62° F, wind 0-6 mph

*Due to the size of the area to be surveyed, each survey was split into two or three site visits.

**The number of biologists was reduced during the latter site visits because the area west of Sanyo Avenue was excluded from the BSA per the direction of Caltrans because it is within the SR-905 approved FEIS/FEIR limits of disturbance.

Table B-14 Wildlife Corridor Study	
Date	Biologists
April 20, 2009	Deborah Leonard, Brian Parker

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Appendix C Plant Species Observed

**Table C-1
PLANT SPECIES OBSERVED**

<u>FAMILY</u>	<u>SCIENTIFIC NAME</u>	<u>COMMON NAME</u>	<u>HABITAT(S)²</u>
DICOTYLEDONES			
Aizoaceae	<i>Carpobrotus edulis</i> *	hottentot-fig	
	<i>Mesembryanthemum crystallinum</i> *	crystalline iceplant	
	<i>Mesembryanthemum nodiflorum</i> *	slender-leaved iceplant	DCSS-D
Amaranthaceae	<i>Amaranthus</i> sp.*	tumbleweed	NNG
Anacardiaceae	<i>Malosma laurina</i>	laurel sumac	DCSS, DCSS-D
	<i>Rhus integrifolia</i>	lemonadeberry	
Apiaceae	<i>Daucus pusillus</i>	rattlesnake weed	NNG
	<i>Eryngium aristulatum</i> var. <i>parishiit</i> †	San Diego button-celery	VP
	<i>Foeniculum vulgare</i> *	fennel	DH, DW, NNG
Asteraceae	<i>Sanicula arguta</i>	sharp-tooth sanicle	NNG
	<i>Achyrachaena mollis</i>	blow-wives	NNG
	<i>Ambrosia psilostachya</i>	western ragweed	DW
	<i>Anthemis cotula</i> *	mayweed	NNG
	<i>Artemisia californica</i>	California sagebrush	DCSS, DCSS-D, NNG
	<i>Baccharis pilularis</i>	coyote bush	DCSS, DCSS-D, DH
	<i>Baccharis salicifolia</i>	mule fat	NNG, MFS-D
	<i>Baccharis sarothroides</i>	broom baccharis	DCSS, DCSS-D, NNG
	<i>Carduus pycnocephalus</i> *	Italian thistle	NNG
	<i>Chamomilla suaveolens</i> *	pineapple weed	NNG
	<i>Centaurea melitensis</i> *	star thistle	DH, NNG
	<i>Centaurea solstitialis</i> *	yellow star-thistle	
	<i>Chrysanthemum coronarium</i> *	garland daisy	
	<i>Cnicus benedictus</i> *	blessed thistle	
	<i>Conyza canadensis</i> *	horseweed	DH, NNG
	<i>Cotula australis</i> *	Australian brass-buttons	NNG
	<i>Cotula coronopifolia</i> *	African brass-buttons	NNG, FWM
	<i>Cynara cardunculus</i> *	cardo	NNG
	<i>Deinandra conjugens</i> †	Otay tarplant	NNG
	<i>Deinandra fasciculata</i>	fascicled tarplant	DCSS, DCSS-D, NNG
	<i>Ericameria</i> sp.	goldenbush	
	<i>Filago californica</i>	California filago	NNG
	<i>Filago gallica</i> *	narrow-leaf filago	NNG
	<i>Gazania linearis</i> *	gazania	DCSS-D, NNG
	<i>Gnaphalium californicum</i>	California everlasting	DCSS, DCSS-D, NNG
	<i>Gnaphalium</i> sp.	cudweed	NNG
	<i>Grindelia camporum</i> var. <i>bracteosum</i>	gum plant	NNG
<i>Hedynois cretica</i> *	Crete hedynois	NNG	
<i>Helianthus annuus</i>	western sunflower	DCSS, DCSS-D, NNG	
<i>Hypochaeris glabra</i> *	smooth cat's-ear	NNG	
<i>Isocoma menziesii</i> var. <i>decumbens</i> †	decumbent goldenbush	DCSS, NNG	

**Table C-1 (cont.)
PLANT SPECIES OBSERVED**

<u>FAMILY</u>	<u>SCIENTIFIC NAME</u>	<u>COMMON NAME</u>	<u>HABITAT(S)²</u>
DICOTYLEDONES (cont.)			
Asteraceae (cont.)	<i>Isocoma menziesii</i> var. <i>menziesii</i>	San Diego goldenbush	DCSS, DCSS-D, NNG
	<i>Iva hayesiana</i> †	San Diego marsh-elder	NNG
	<i>Lactuca serriola</i> *	prickly lettuce	DW, VP
	<i>Lasthenia californica</i>	goldfields	NNG
	<i>Lessingia filaginifolia</i> var. <i>filaginifolia</i>	California-aster	DCSS-D, NNG
	<i>Osmadenia tenella</i>	osmadenia	NNG
	<i>Psilocarphus brevissimus</i> var. <i>brevissimus</i>	dwarf woolly-heads	NNG
	<i>Silybum marianum</i> *	milk thistle	NNG
	<i>Sonchus asper</i> *	prickly sow thistle	NNG
	<i>Sonchus oleraceus</i> *	common sow thistle	DH, NNG
	<i>Stylocline gnaphaloides</i>	everlasting nest straw	NNG
	<i>Viguiera laciniata</i> †	San Diego County viguiera	DCSS, DCSS-D, NNG
	<i>Xanthium strumarium</i> *	cocklebur	DW, MFS-D
	Boraginaceae	<i>Amsinckia menziesii</i> var. <i>intermedia</i>	rancher's fiddleneck
<i>Cryptantha</i> sp.		cryptantha	DCSS, DCSS-D
<i>Heliotropium curvassavicum</i>		salt heliotrope	DW
<i>Pectocarya</i> sp.		pectocarya	
Brassicaceae	<i>Plagiobothrys</i> sp.	popcorn flower	DCSS-D, NNG
	<i>Brassica nigra</i> *	black mustard	DH, NNG
	<i>Brassica rapa</i> *	field mustard	NNG
	<i>Brassica</i> sp.	mustard	MFS-D
	<i>Descurainia pinnata</i>	tansy-mustard	NNG
	<i>Hirschfeldia incana</i> *	perennial mustard	NNG
	<i>Lepidium latifolium</i> *	peppergrass	NNG
	<i>Lepidium nitidum</i>	shining peppergrass	NNG
	<i>Raphanus sativus</i> *	wild radish	NNG
	<i>Sisymbrium irio</i> *	London rocket	
Cactaceae	<i>Sisymbrium orientale</i> *	hare's ear cabbage	
	<i>Cylindropuntia prolifera</i>	coast cholla	
	<i>Ferocactus viridescens</i> †	San Diego barrel cactus	DCSS, DCSS-D, NNG
	<i>Opuntia littoralis</i>	coastal prickly pear	DCSS, DCSS-D
Callitrichaceae	<i>Callitriche marginata</i>	long-stalk water-starwort	
Campanulaceae	<i>Downingia cuspidata</i>	toothed downingia	
Capparaceae	<i>Isomeris arborea</i>	bladderpod	DCSS, DCSS-D, NNG
Caryophyllaceae	<i>Silene gallica</i> *	common catchfly	DCSS-D, NNG
	<i>Spergularia bocconii</i> *	sand-spurry	NNG
	<i>Spergularia</i> sp.*	sand-spurry	NNG
	<i>Spergularia villosa</i> *	villous sand-spurry	
Chenopodiaceae	<i>Atriplex semibaccata</i> *	Australian saltbush	NNG
	<i>Chenopodium album</i> *	pigweed	
	<i>Chenopodium murale</i> *	nettle-leaf goosefoot	NNG
	<i>Chenopodium</i> sp.*	pigweed	DH, DW, NNG
	<i>Salicornia bigelovii</i>	dwarf glasswort	DW
	<i>Salsola tragus</i> *	Russian thistle	DH, NNG, VP

Table C-1 (cont.)
PLANT SPECIES OBSERVED

<u>FAMILY</u>	<u>SCIENTIFIC NAME</u>	<u>COMMON NAME</u>	<u>HABITAT(S)²</u>
DICOTYLEDONES (cont.)			
Convolvulaceae	<i>Calystegia macrostegia</i> ssp. <i>arida</i>	finger-leaf morning-glory	DCSS, DCSS-D, NNG
	<i>Convolvulus arvensis</i> *	bindweed	NNG
	<i>Convolvulus simulanst</i> †	small-flowered morning glory	NNG
Crassulaceae	<i>Crassula aquatica</i>	common pygmy-weed	VP
	<i>Crassula connata</i>	pygmy-weed	NNG
	<i>Dudleya pulverulenta</i>	chalk-lettuce	
	<i>Dudleya variegata</i> †	variegated dudleya	DH, NNG
Cucurbitaceae	<i>Marah macrocarpus</i>	wild cucumber	NNG
Cuscutaceae	<i>Cuscuta</i> sp.	dodder	DCSS, DCSS-D
Euphorbiaceae	<i>Chamaesyce polycarpa</i>	desert sand mat	NNG
	<i>Eremocarpus setigerus</i>	dove weed	DH, NNG
Fabaceae	<i>Astragalus didymocarpus</i> var. <i>didymocarpus</i>	white dwarf locoweed	
	<i>Astragalus gambelianus</i>	Gambell's dwarf locoweed	
	<i>Lotus corniculatus</i> *	birdsfoot trefoil	
	<i>Lotus hamatus</i>	grab lotus	
	<i>Lotus scoparius</i> var. <i>scoparius</i>	coastal deerweed	DCSS, DCSS-D, NNG
	<i>Lotus</i> sp.	lotus	DCSS-D, NNG
	<i>Lotus strigosus</i>	Bishop's lotus	
	<i>Lupinus bicolor</i>	miniature lupine	
	<i>Lupinus concinnus</i>	bajada lupine	
	<i>Lupinus succulentus</i>	arroyo lupine	
	<i>Medicago polymorpha</i> *	bur-clover	NNG
	<i>Medicago sativa</i> *	alfalfa	NNG
	<i>Melilotus alba</i> *	white sweet clover	NNG
	<i>Melilotus indica</i> *	Indian sweet clover	NNG
	<i>Trifolium gracilentum</i>	pin-point clover	
	<i>Trifolium microcephalum</i>	small-headed clover	
	<i>Trifolium</i> sp.	clover	NNG
	<i>Vicia benghalensis</i> *	purple vetch	
	<i>Vicia sativa</i> *	spring vetch	
	<i>Vicia villosa</i> *	winter vetch	NNG
Gentianaceae	<i>Centaurium venustum</i>	canchalagua	DCSS, DCSS-D
Geraniaceae	<i>Erodium botrys</i> *	long-beak filaree	NNG
	<i>Erodium brachycarpum</i> *	short-beak filaree	NNG
	<i>Erodium cicutarium</i> *	red-stem filaree	DH, NNG
	<i>Erodium moschatum</i> *	green-stem filaree	DH, NNG
Hydrophyllaceae	<i>Nemophila menziesii</i>	baby blue-eyes	NNG
	<i>Phacelia cicutaria</i> var. <i>hispida</i>	caterpillar phacelia	
	<i>Phacelia</i> sp.	phacelia	
Lamiaceae	<i>Marrubium vulgare</i> *	horehound	NNG
	<i>Trichostema lanceolatum</i>	vinegar weed	DCSS, DCSS-D
Lythraceae	<i>Lythrum hyssopifolium</i> *	grass poly	
	<i>Lythrum</i> sp.	grass poly	NNG

Table C-1 (cont.)
PLANT SPECIES OBSERVED

<u>FAMILY</u>	<u>SCIENTIFIC NAME</u>	<u>COMMON NAME</u>	<u>HABITAT(S)²</u>
DICOTYLEDONES (cont.)			
Malvaceae	<i>Malacothamnus fasciculatus</i>	chaparral mallow	
	<i>Malva neglecta</i> *	common mallow	NNG
	<i>Malva parviflora</i> *	cheeseweed	DH, NNG
	<i>Malvella leprosa</i>	alkali-mallow	VP
	<i>Sidalcea malviflora</i> ssp. <i>sparsifolia</i>	checker-bloom	NNG
Molluginaceae	<i>Glinus lotoides</i>	carpetweed	
Nyctaginaceae	<i>Mirabilis californica</i>	wishbone bush	DCSS-D, NNG
Onagraceae	<i>Epilobium canum</i> ssp. <i>canum</i>	California fuchsia	DCSS-D
	<i>Epilobium ciliatum</i>	California cottonweed	
	<i>Gaura drummondii</i>	wild honeysuckle	
Oxalidaceae	<i>Oxalis pes-caprae</i> *	Bermuda-buttercup	NNG
Papaveraceae	<i>Eschscholzia</i> sp.	poppy	
Plantaginaceae	<i>Plantago erecta</i>	dwarf plantain	DCSS-D, NNG
Polemoniaceae	<i>Gilia</i> sp.	gilia	DCSS-D, NNG
	<i>Navarretia fossalis</i> †	spreading navarretia	VP
Polygonaceae	<i>Chorizanthe fimbriata</i>	fringed spineflower	
	<i>Eriogonum fasciculatum</i> ssp. <i>fasciculatum</i>	California buckwheat	DCSS, DCSS-D, NNG
	<i>Linanthus dianthiflorus</i>	ground pink	DCSS, DCSS-D
	<i>Polygonum arenastrum</i> *	common knotweed	
	<i>Polygonum</i> sp.	knotweed	DH, NNG
	<i>Rumex crispus</i> *	curly dock	DW, TS, FWM
Portulacaceae	<i>Calandrinia ciliata</i>	red maids	DCSS, DCSS-D, NNG
Primulaceae	<i>Anagallis arvensis</i> *	scarlet pimpernel	NNG, MFS-D
	<i>Dodecatheon clevelandii</i> ssp. <i>clevelandii</i>	shooting star	DCSS-D, NNG
Rhamnaceae	<i>Adolphia californica</i> †	California adolphia	DCSS
Rosaceae	<i>Adenostoma fasciculatum</i>	chamise	
Rubiaceae	<i>Galium angustifolium</i> ssp. <i>angustifolium</i>	narrow-leaved bedstraw	DW
	<i>Galium</i> sp.	bedstraw	DCSS-D
Salicaceae	<i>Salix lasiolepis</i>	arroyo willow	
	<i>Salix goodingii</i>	black willow	MFS-D
Scrophulariaceae	<i>Antirrhinum nuttallianum</i>	Nuttall's snapdragon	
	<i>Castilleja exserta</i>	purple owl's clover	NNG
	<i>Mimulus guttatus</i>	common monkey-flower	
Solanaceae	<i>Lycium californicum</i> †	California box-thorn	NNG
	<i>Nicotiana glauca</i> *	tree tobacco	
	<i>Solanum americanum</i> *	white nightshade	
	<i>Solanum parishii</i>	Parish's nightshade	
Tamaricaceae	<i>Tamarix ramosissima</i> *	French tamarisk	
	<i>Tamarix</i> sp.*	tamarisk	DW, TS, MFS-D
Verbenaceae	<i>Verbena menthifolia</i>	mint-leaved verbena	
	<i>Verbena</i> sp.	verbena	NNG

**Table C-1 (cont.)
PLANT SPECIES OBSERVED**

<u>FAMILY</u>	<u>SCIENTIFIC NAME</u>	<u>COMMON NAME</u>	<u>HABITAT(S)²</u>
DICOTYLEDONES (cont.)			
Cyperaceae	<i>Eleocharis montevidensis</i>	slender creeping spike-rush	FWM
	<i>Eleocharis macrostachya</i>	pale spike-rush	DW, VP
Iridaceae	<i>Sisyrinchium bellum</i>	blue-eyed grass	NNG
Juncaceae	<i>Juncus bufonius</i>	toad rush	NNG
Juncaginaceae	<i>Lilaea scilloides</i>	flowering-quillwort	
Liliaceae	<i>Allium sp.</i>	wild onion	DCSS-D, NNG
	<i>Bloomeria crocea</i> var. <i>crocea</i>	golden star	DCSS-D, NNG
	<i>Brodiaea jolonensis</i>	mesa brodiaea	DCSS-D, NNG
	<i>Calochortus splendens</i>	splendid mariposa lily	DCSS-D
	<i>Chlorogalum parviflorum</i>	small-flowered soap plant	NNG
	<i>Chlorogalum pomeridianum</i>	soap plant	DCSS
	<i>Dichelostemma capitatum</i>	blue dicks	DCSS, DCSS-D, NNG
	<i>Muilla clevelandii</i> †	San Diego goldenstar	NNG
	<i>Muilla maritima</i>	common muilla	NNG
	<i>Zigadenus fremontii</i>	star-lily	NNG
Poaceae	<i>Achnatherum coronatum</i>	giant stipa	NNG
	<i>Avena barbata</i> *	slender wild oat	DCSS, DCSS-D, DH, NG, NNG
	<i>Avena fatua</i> *	wild oat	DCSS-D, DH, NNG
	<i>Bromus diandrus</i> *	common ripgut grass	DCSS, DCSS-D, NNG, DH
	<i>Bromus hordeaceus</i> *	soft chess	NNG
	<i>Bromus madritensis</i> ssp. <i>rubens</i> *	foxtail chess	DCSS, DCSS-D, NNG, DH
	<i>Digitaria sanguinalis</i> *	large crabgrass	
	<i>Distichlis spicata</i>	saltgrass	NG
	<i>Gastridium ventricosum</i> *	nit grass	NNG
	<i>Hordeum marinum</i> ssp. <i>gussoneanum</i> *	Mediterranean barley	DH, NNG
	<i>Lamarckia aurea</i> *	goldentop	DCSS-D, DH, NNG
	<i>Leymus condensatus</i>	giant wild rye	NNG
	<i>Lolium multiflorum</i> *	Italian ryegrass	NNG
	<i>Lolium perenne</i> *	English ryegrass	NNG
	<i>Lolium sp.</i> *	ryegrass	NNG, DH, VP
	<i>Nassella lepida</i>	needlegrass	
	<i>Nassella pulchra</i>	purple needlegrass	NNG
	<i>Phalaris sp.</i> *	canary grass	DW
	<i>Polypogon monspeliensis</i> *	rabbitsfoot grass	DW, DH, NNG, FWM
	<i>Schismus barbatus</i> *	Mediterranean grass	DH, NNG
	<i>Vulpia myuros</i> *	fescue	DCSS, DCSS-D, DH, NNG
Typhaceae	<i>Typha latifolia</i>	broad-leaved cattail	DW, TS, FWM
PTERIDOPHYTA			
Marsileaceae	<i>Pilularia americana</i>	pill-wort	
Selaginellaceae	<i>Selaginella bigelovii</i>	Bigelow's mossfern	
	<i>Selaginella cinerascens</i>	ashy spike-moss	DCSS

¹ Some species were observed outside the Tier II BSA since it has varied over the many years of surveys.

² Habitat acronyms: DCSS=Diegan coastal sage scrub, DCSS-D=Diegan coastal sage scrub-disturbed, DH=disturbed habitat, MFS-D=mule fat scrub-disturbed, DW=disturbed wetland, FWM=freshwater marsh, NG=native grassland, NNG=non-native grassland, TS=tamarisk shrub, VP=vernal pool.

* Non-native species

† Special status species

Table C-2 INVASIVE OR NOXIOUS PLANT SPECIES FOUND IN THE BSA						
Scientific Name	Common Name	Habitat(s) ¹	California Invasive Plant Inventory Negative Ecological Impact Category ²			USDA NRCS Noxious Weed
			High	Moderate	Limited	
<i>Atriplex semibaccata</i>	Australian saltbush	NNG		X		
<i>Brassica nigra</i>	black mustard	DH, NNG		X		
<i>Brassica rapa</i>	field mustard	NNG			X	
<i>Brassica</i> sp.	mustard	MFS-D	Unknown ³			
<i>Bromus diandrus</i>	common ripgut grass	DCSS, DCSS-D, NNG, DH		X		
<i>Bromus hordeaceus</i>	soft chess	NNG			X	
<i>Bromus madritensis</i> ssp. <i>rubens</i>	foxtail chess	DCSS, DCSS-D, NNG, DH	X			
<i>Carduus pycnocephalus</i>	Italian thistle	NNG		X		X
<i>Carpobrotus edulis</i>	hottentot-fig		X			
<i>Centaurea solstitialis</i>	yellow star-thistle		X			X
<i>Chrysanthemum coronarium</i>	garland daisy			X		
<i>Convolvulus arvensis</i>						
<i>Cotula coronopifolia</i>	African brass-buttons	NNG, FWM			X	
<i>Cynara cardunculus</i>	cardoon	NNG		X		X
<i>Erodium cicutarium</i>	red-stem filaree	DH, NNG			X	
<i>Foeniculum vulgare</i>	fennel	DH, DW, NNG	X			
<i>Hirschfeldia incana</i>	perennial mustard	NNG		X		
<i>Hordeum marinum</i> ssp. <i>gussoneanum</i>	Mediterranean barley	DH, NNG		X		
<i>Hypochaeris glabra</i>	smooth cat's-ear	NNG			X	
<i>Lepidium latifolium</i>	peppergrass	NNG	X			X
<i>Lolium multiflorum</i>	Italian ryegrass	NNG		X		
<i>Lythrum hyssopifolium</i>	grass poly				X	
<i>Marrubium vulgare</i>	horehound	NNG			X	
<i>Medicago polymorpha</i>	bur-clover	NNG			X	
<i>Mesembryanthemum crystallinum</i>	crystalline iceplant			X		
<i>Nicotiana glauca</i>	tree tobacco			X		
<i>Oxalis pes-caprae</i>	Bermuda-buttercup	NNG		X		
<i>Phalaris</i> sp.	canary grass	DW	Unknown			
<i>Polypogon monspeliensis</i>	rabbitsfoot grass	DW, DH, NNG, FWM			X	
<i>Raphanus sativus</i>	wild radish	NNG			X	

Table C-2 (cont.) INVASIVE OR NOXIOUS PLANT SPECIES FOUND IN THE BSA						
Scientific Name	Common Name	Habitat(s) ¹	California Invasive Plant Inventory Negative Ecological Impact Category ²			USDA NRCS Noxious Weed
			High	Moderate	Limited	
<i>Rumex crispus</i>	curly dock	DW, TS, FWM			X	
<i>Salsola tragus</i>	Russian thistle	DH, NNG, VP			X	X
<i>Schismus barbatus</i>	Mediterranean grass	DH, NNG			X	
<i>Silybum marianum</i>	milk thistle	NNG			X	
<i>Sisymbrium irio</i>	London rocket			X		
<i>Tamarix ramosissima</i>	French tamarisk		X			
<i>Tamarix</i> sp.	tamarisk	DW, TS, MFS-D	Unknown			
<i>Vulpia myuros</i>	fescue	DCSS, DCSS-D, DH, NNG		X		

¹ Habitat acronyms, where recorded: DCSS=Diegan coastal sage scrub, DCSS-D=Diegan coastal sage scrub-disturbed, DH=disturbed habitat, DW=disturbed wetland,

FWM=freshwater marsh, MFS-D=mule fat scrub-disturbed, NNG=non-native grassland, TS=tamarisk shrub, VP=vernal pool.

² From the California Invasive Plant Inventory Database (California Invasive Plant Council 2006).

³ "Unknown" is used when the species was not identified, but at least one species of the genus is in the California Invasive Plant Inventory Database.

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Appendix D Animal Species Observed

<u>SCIENTIFIC NAME¹</u>	<u>COMMON NAME</u>
INVERTEBRATES	
Coccinellidae – Lady beetles <i>Hippodamia convergens</i>	lady beetle
Crustacea – Crustaceans <i>Branchinecta sandiegonensis</i> † <i>Streptocephalus woottoni</i> †	San Diego fairy shrimp Riverside fairy shrimp
Hymenoptera - Ants, wasps, bees <i>Apis mellifera</i> <i>Bombus terricola occidentalis</i> <i>Pepsis formosa</i>	honeybee bumblebee tarantula hawk
Lepidoptera – Butterflies and Moths Anthocharis sara <i>Sara orangetip</i> <i>Anthocharis cethura</i> <i>Apodemia mormo virgulti</i> <i>Brephidium exilis</i> <i>Chlosyne gabbii</i> <i>Coenonympha californica</i> <i>Colias eurytheme</i> <i>Danaus plexippus</i> <i>Erynnis funeralis</i> <i>Euphydras chalcedona chalcedona</i> <i>Euphydryas editha quino</i> † <i>Glaucopsyche lygdamus australis</i> <i>Junonia coenia</i> <i>Nathalis iole</i> <i>Papilio eurymedon</i> <i>Papilio zelicaon</i> <i>Pieris rapae</i> * <i>Plebejus acmon</i> <i>Pontia protodice</i> <i>Pontia sisymbrii</i> <i>Pyrgus albescens</i> <i>Strymon melinus</i> <i>Vanessa annabella</i> <i>Vanessa atalanta</i> <i>Vanessa cardui</i> <i>Vanessa virginiensis</i>	Felder's orangetip Behr's metalmark western pygmy blue Gabb's checkerspot common California ringlet orange sulfur monarch funereal duskywing chalcedon checkerspot Quino checkerspot butterfly <i>southern blue</i> buckeye dainty sulfur pale swallowtail anise swallowtail cabbage white butterfly acmon blue common white spring white common checkered skipper gray hairstreak west coast lady red admiral painted lady Virginia lady sulfur sp.
Theraphosidae – Tarantulas <i>Aphonopelma chalcodes</i>	desert tarantula

SCIENTIFIC NAME¹**COMMON NAME****VERTEBRATES****Amphibians**

Hylidae – Treefrogs

Pseudacris regilla

Pacific treefrog

Pelobatidae - Spadefoot Toads

Spea hammondi †

western spadefoot

Reptiles

Anguidae – Alligator Lizards

Elgaria multicarinata webbii

Southern alligator lizard

Colubridae – Colubrids

Lampropeltis getula californiae

California kingsnake

Thamnophis hammondi †

two-striped garter snake

Phrynosomatidae – Earless, Spiny, Tree, Side-blotched, and Horned Lizards

Sceloporus occidentalis

western fence lizard

Sceloporus orcutti

granite spiny lizard

Uta stansburiana

side-blotched lizard

Scincidae – Skinks

Eumeces skiltonianus skiltonianus

western skink

Tejidae – Whiptails and Racerunners

Cnemidophorus tigris multiscutatus †

coastal western whiptail

Viperidae – Vipers

Crotalus exsul †

red-diamond rattlesnake

Crotalus viridis

western rattlesnake

Birds

Accipitridae – Hawks, Old World Vultures, Kites, Harriers, and Eagles

Buteo jamaicensis

red-tailed hawk

Circus cyaneus †

northern harrier

Elanus leucurus †

white-tailed kite

Accipiter striatus †

sharp-shinned hawk

Alaudidae – Larks

Eremophila alpestris actia †

California horned lark

Anatidae - Ducks, Geese, and Swans

Anas cyanoptera

cinnamon teal

Anas platyrhynchos

mallard

Anas strepera

gadwall

Apodidae – Swifts

Aeronautes saxatalis

white-throated swift

Caprimulgidae – Goatsuckers

Chordeiles acutipennis

lesser nighthawk

Cardinalidae – Cardinals

Passerina caerulea

blue grosbeak

Cathartidae - New World (American) Vultures

Cathartes aura †

turkey vulture

<u>SCIENTIFIC NAME¹</u>	<u>COMMON NAME</u>
VERTEBRATES (cont.)	
<u>Birds</u> (cont.)	
Charadriidae – Plovers <i>Charadrius vociferus</i>	killdeer
Columbidae – Doves <i>Zenaida macroura</i>	mourning dove
Corvidae – Jays, Magpies, and Crows <i>Corvus brachyrhynchos</i> <i>Corvus corax</i>	American crow common raven
Cuculidae - Cuckoos and Relatives <i>Geococcyx californianus</i>	greater roadrunner
Emberizidae – Sparrows, Longspurs, and Sparrows <i>Aimophila ruficeps canescens</i> † sparrow <i>Ammodramus savannarum</i> † <i>Chondestes grammacus</i> <i>Melospiza melodia</i> <i>Pipilo maculatus</i> <i>Pipilo crissalis</i> <i>Zonotrichia leucophrys</i>	Emberiza Buntings southern California rufous-crowned grasshopper sparrow lark sparrow song sparrow spotted towhee California towhee white-crowned sparrow
Falconidae – Falcons <i>Falco sparverius</i>	American kestrel
Fringillidae – Finches <i>Carpodacus mexicanus</i> <i>Carduelis psaltria</i> <i>Carduelis tristis</i>	house finch lesser goldfinch American goldfinch
Hirundinidae – Swallows <i>Hirundo pyrrhonota</i> <i>Hirundo rustica</i> <i>Stelgidopteryx serripennis</i> <i>Tachycineta bicolor</i>	cliff swallow barn swallow northern rough-winged swallow tree swallow
Icteridae – Orioles, Meadowlarks, Blackbirds, and Relatives <i>Agelaius phoeniceus</i> <i>Euphagus cyanocephalus</i> <i>Icterus bullockii</i> <i>Sturnella neglecta</i>	red-winged blackbird Brewer's blackbird Bullock's oriole western meadowlark
Laniidae - Shrikes <i>Lanius ludovicianus</i> †	loggerhead shrike
Mimidae – Mimic Thrushes <i>Mimus polyglottos</i>	northern mockingbird
Odontophoridae- Quails and Bobwhite <i>Callipepla californica</i>	California quail
Parulidae - Wood-warblers <i>Dendroica coronata</i> <i>Dendroica petechia brewsteri</i> †	yellow-rumped warbler yellow warbler
Passeridae – Old World Sparrows <i>Passer domesticus</i>	house sparrow

SCIENTIFIC NAME¹**COMMON NAME****VERTEBRATES (cont.)****Birds** (cont.)

Rallidae – Rails, Coots, and Gallinules

Fulica americana

American coot

Recurvirostridae – Stilts and Avocets

*Himantopus mexicanus*¹

black-necked stilt

Scolopacidae – Sandpipers

Catoptrophorus semipalmatus

willet

Limnodromus scolopaceus

long-billed dowitcher

Numenius americanus

long-billed curlew

Tringa flavipes

lesser yellowlegs

Strigidae – Owls

Athene cunicularia †

burrowing owl

Tyto alba

barn owl

Sturnidae – Starlings

*Sturnus vulgaris**

European starling

Sylviidae – Gnatcatchers

Polioptila californica californica †

coastal California gnatcatcher

Trochilidae – Hummingbirds

Calypte anna

Anna's hummingbird

Selasphorus sasin

Allen's hummingbird

Tyrannidae – Flycatchers

Myiarchus cinerascens

ash-throated flycatcher

Sayornis nigricans

black phoebe

Sayornis saya

Say's phoebe

Tyrannus verticalis

western kingbird

Tyrannus vociferans

Cassin's kingbird

Canidae – Coyotes, Wolves, Foxes, and Dogs

Canis familiaris

feral dog

Canis latrans

coyote

Felidae - Cats and Relatives

Lynx rufus

bobcat

Geomyidae – Gophers

Thomomys bottae

Botta's pocket gopher

Leporidae – Rabbits and Hares

Lepus californicus bennetti †

San Diego black-tailed jackrabbit

Sylvilagus audubonii

desert cottontail

Sciuridae – Squirrels, Chipmunks, and Marmots

Spermophilus beecheyi

California ground squirrel

¹Some species were observed outside the Tier II BSA since it has varied over the many years of surveys.

†Special status species

*Non-native

species

Appendix E Status Codes

EXPLANATION OF STATUS CODES FOR PLANT AND ANIMAL SPECIES

U.S. FISH AND WILDLIFE SERVICE

- FE Federally listed endangered
 FT Federally listed threatened
 BCC Birds of Conservation Concern (BCC) is a designation used by the U.S. Fish and Wildlife Service to identify migratory and non-migratory bird species (beyond those already designated as federally threatened or endangered) that represent their highest conservation priorities and draw attention to species in need of conservation action. While all of the BCC-designated bird species are priorities for conservation action, this designation makes no finding with regard to whether they warrant consideration for federal Endangered Species Act (ESA) listing. The goal is to prevent or remove the need for additional federal ESA bird listings by implementing proactive management and conservation actions

CALIFORNIA DEPARTMENT OF FISH AND GAME

- SE State listed endangered
 ST State listed threatened
 SSC State species of special concern
 FP Fully Protected species may not be taken or possessed at any time, and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research and relocation of bird species for protection of livestock.

COUNTY OF SAN DIEGO MULTIPLE SPECIES CONSERVATION PROGRAM (MSCP)

- Narrow Endemic Species listed in Attachments D and E of the MSCP Biological Mitigation Ordinance (Ordinance No. 8845).
 County Sensitive A Group 1 or Group 2 sensitive animal on the Sensitive Animal List or a List A, B, C, or D sensitive plant on the Sensitive Plant List

California Native Plant Society List

List Extensions

- | | |
|---|---|
| 1A = Presumed extinct. | .1 – Seriously endangered in California (more than 80 percent of occurrences threatened/high degree and immediacy of threat). |
| 1B = Rare, threatened, or endangered in California and elsewhere. Eligible for state listing. | .2 – Fairly endangered in California (20 to 80 percent of occurrences threatened). |
| 2 = Rare, threatened, or endangered in California but more common elsewhere. Eligible for state listing. | .3 – Not very endangered in California (less than 20 percent of occurrences threatened or no current threats known). |
| 3 = Distribution, endangerment, ecology, and/or taxonomic information needed. Some eligible for State listing. | |
| 4 = A watch list for species of limited distribution. Needs monitoring for changes in population status. Few (if any) eligible for state listing. | |

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