NATURAL ENVIRONMENT STUDY

San Diego Freeway (I-405) Improvement Project
SR-73 to I-605

Orange and Los Angeles Counties

12-ORA-405 PM 9.3/24.2 / 07-LA-405 PM 0.0/1.2
12-ORA-22 PM R0.7/R3.8 / 12-ORA-22 PM R0.5/R0.7
12-ORA-73 PM R27.2/R27.8 / 12-ORA-605 PM 3.5/R1.6
07-LA-605 PM R0.0/R1.2

EA 0H1000
EFIS ID 1200000180

March 2012

STATE OF CALIFORNIA
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August 2011

STATE OF CALIFORNIA
Department of Transportation

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Caltrans
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Revised March 2012

Summary

The California Department of Transportation (Caltrans), in cooperation with the Orange County Transportation Authority (OCTA), proposes to improve mainline freeway and interchanges on Interstate 405 (I-405) for approximately 16 miles (mi). The proposed project is primarily located in Orange County, California, on I-405 (ORA PM 9.3/24.2; LA PM 0.0/1.2) between State Route (SR)-73 (ORA PM R27.2/R27.8) and Interstate 605 (I-605) (ORA PM 3.5/R1.6; LA PM R0.0/R1.2). Encroachments into Los Angeles County and work on SR-22 (ORA PM R0.7/R3.8 and R0.5/R0.7) are associated with signing and striping to accommodate the transition from the existing to proposed facility (hereafter referred to as the "Project"). The proposed project would relieve congestion and improve operational efficiency on I-405 between SR-73 and I-605. The proposed Project Alternatives, as well as the associated common and unique design features, are described in detail in Section 1 of this Natural Environment Study (NES). The purpose and intended use of this NES is to evaluate biological resources and determine the potential for occurrence of common and special-status species, their habitats, and special aquatic resource areas within the proposed project's Biological Study Area (BSA). For the purposes of this analysis, the BSA is defined as the project's proposed limits of physical ground disturbance (i.e., project footprint), plus an approximate 150-foot (ft) buffer that includes sufficient adjacent area to adequately assess the direct, indirect, and cumulative effects of the proposed action on the listed species. The 150-ft buffer was determined by a qualified biologist[1] prior to initiating field surveys as a consequence of the urban and anthropogenic influences adjacent to the project footprint. The buffer is also intended to provide the Design Engineer with some flexibility to account for potential changes in engineering alignments, where practical, as the proposed project moves toward development of final plans and specifications. The proposed project's BSA is predominately confined to heavily developed, anthropogenically disturbed areas containing public and private infrastructure. Vegetation communities observed within the BSA include agriculture, developed, riparian, and drainage. Most of the impacts would occur to developed areas; however, some impacts are expected to occur to agriculture and drainage. The temporary and permanent impacts expected to these vegetation communities for each alternative include the following:

Vegetation Community	Alternative 1		Alternative 2		Alternative 3	
	Temporary (Acres)	Permanent (Acres)	Temporary (Acres)	Permanent (Acres)	Temporary (Acres)	Permanent (Acres)
Agriculture	0	0	0	0	0	0
Developed	189.1	79.3	179.7	91.3	202.1	101.2
Riparian	0	0	0	0	0	0
Drainage	5.7	1.6	5.6	1.9	6.8	2
Total	194.8	80.9	185.3	93.2	208.9	103.2

Where potential impacts to biological resources have been identified within this document, implementation of specific compensation programs have been recommended to avoid, minimize, and offset impacts. Based on field surveys and a review of pertinent literature, the proposed project is not anticipated to adversely impact special-status species or their habitats. More specifically, the proposed project is not expected to result in a trend toward additional state or federal protection, loss of viability, or to substantially modify

[1] A qualified biologist is an individual with sufficient education and field experience in local California ecology and biology to adequately identify local plant and wildlife species.

regional habitat availability for any common or special-status species. Invasive species would be removed from the project work area and controlled during construction to ensure compliance with Executive Order (EO) 13112. The proposed project is a “Major Action” and must meet the requirements for Section 7. As the Federal Lead Agency, Caltrans will consult with the U.S. Fish and Wildlife Service (USFWS) regarding Federal Endangered Species Act Section 7 compliance.

The BSA includes water conveyance and drainage features under the jurisdiction of U.S. Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), and California Department of Fish and Game (CDFG). In summary, the proposed project has the potential to impact special aquatic resource areas and would likely require Clean Water Act (CWA) Sections 404 and 401 permitting and a Lake and Streambed Alteration Agreement (LSAA) from CDFG.

The information contained in this document includes summarized technical data, maps, and similar relevant information to facilitate efficient review of the biological consequences associated with implementation of the proposed project. The results presented in this NES are based on recent literature searches and biological resource surveys conducted in 2009 and 2010.

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LIST OF ABBREVIATED TERMS

BMPs	Best Management Practices
BSA	Biological Study Area
Cal-IPC	California Invasive Plant Council
Caltrans	California Department of Transportation
CBOC	California Burrowing Owl Consortium
CCR	California Code of Regulations
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFG Code	California Fish and Game Code
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CSS	coastal sage scrub
CZMA	Coastal Zone Management Act
CWA	Clean Water Act
CWC	California Water Code
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act of 1973
FHWA	Federal Highway Administration
ft	feet or foot
GP	General Purpose
HOV	High-Occupancy Vehicle
HP	Habitat Present
I-405	Interstate 405
I-605	Interstate 605
ISCC	Invasive Species Council of California
km	kilometer
LSAA	Lake and Streambed Alteration Agreement
m	meters
mi	miles
NEPA	National Environmental Policy Act
NES	Natural Environment Study
NMFS	National Marine Fisheries Service
MBTA	Migratory Bird Treaty Act
MVP	Maintenance Vehicle Pullout
OCTA	Orange County Transportation Authority
OHWM	Ordinary High Water Mark
Porter-Cologne	Porter-Cologne Water Quality Control Act
Project	I-405 Improvement Project
PS&E	Plans, Specifications, and Estimate
ROW	right-of-way
RPW	Relatively Permanent Water

RWQCB	Regional Water Quality Control Board
SR	State Route
SWPPP	Storm Water Pollution Prevention Plan
TNW	Traditional Navigable Water
UPRR	Union Pacific Railroad
USACE	U.S. Army Corps of Engineers
U.S.C.	United States Code
USFWS	United States Fish and Wildlife Service
USGS	U.S. Geological Survey
WoS	Waters of the State
WoUS	Waters of the United States

1. INTRODUCTION

1.1. Project History

The purpose of the proposed project is to:

- Add capacity and reduce congestion on the general purpose (GP) and high-occupancy vehicle (HOV) lanes along the entire Interstate 405 (I-405) corridor from State Route (SR)-73 to Interstate 605 (I-605);
- Enhance interchange operations;
- Increase mobility, improve trip reliability, maximize throughput, and optimize operations;
- Implement strategies that ensure the earliest project delivery; and
- Enhance safety.

In furtherance of the project's purpose, the following objectives are established:

- Minimize right-of-way (ROW) acquisition;
- Ensure financial viability;
- Meet, at a minimum, the commitments of Orange County's Renewed Measure M transportation sales tax initiative to add capacity to the I-405 within the project area;
- Maintain or improve future traffic performance within the corridor; and
- Improve the corridor to ensure the facility is maintained as an effective link in the National Strategic Highway Network.

Need for the Project

Current deficiencies of I-405 within the project limits are summarized below:

- The I-405 mainline GP lanes peak-period traffic demand exceeds available capacity;
- The I-405 mainline HOV lanes peak-period traffic demand exceeds available capacity;
- The I-405 mainline GP traffic lanes have operational and geometric deficiencies; and
- The interchanges along I-405 within the Biological Study Area (BSA) have geometric, storage, and operational capacity deficiencies.

1.2. Project Description

The proposed project is primarily located in Orange County, California, on I-405 (ORA PM 9.3/24.2; LA PM 0.0/1.2) between SR-73 (ORA PM R27.2/R27.8) and I-605 (ORA PM 3.5/R1.6; LA PM R0.0/R1.2). Encroachments into Los Angeles County and work on SR-22 (ORA PM R0.7/R3.8 and R0.5/R0.7) are associated with signing and striping to accommodate the transition from the existing to proposed facility. The proposed project covers a distance of approximately 16 miles (mi). The proposed project would relieve congestion and improve operational efficiency on I-405 between SR-73 and I-605. The California Department of Transportation (Caltrans) is the Lead Agency for compliance with the California

Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA). The environmental review, consultation, and any other action required in accordance with applicable federal laws for this project is being or has been carried out by Caltrans under its assumption of responsibility pursuant to 23 United States Code (U.S.C.) 327. The Orange County Transportation Authority (OCTA) is the local agency sponsor and a Responsible Agency under CEQA and NEPA; the Unites States Army Corps of Engineers (USACE) is a Cooperating Agency under NEPA.

Project-operational impacts may include intermittent air emissions, noise, light, and vibration. Post-construction maintenance and operations could temporarily displace common species from the BSA and impair their ability to establish territories at those times. Noise, light, vibration, trash, and human activities may even cause some species to avoid an area until the disturbance conditions are eliminated or the individuals become accustomed to the disturbance. Furthermore, the project footprint includes all permanent and temporary impact areas required to construct the proposed project, including staging areas (identified in Attachments D, E, and F of the Project Report); however, it should be noted that unless access for the contractor is restricted, the contractor would be allowed to use all areas within the project footprint to accommodate construction access. No borrow or disposal areas have been included; it is assumed that the contractor would provide evidence that any proposed borrow or disposal areas are consistent with Caltrans policy, state and federal law, and local regulation. It is also anticipated that utility relocation would occur within the project footprint. Detours for use during construction are currently being developed and would utilize existing local streets. Detour plans will be finalized as part of the project's Transportation Management Plan, in accordance with Caltrans policy and local jurisdiction approval. It is estimated that the proposed project would be constructed in phases over a duration of approximately 54 months.

Project Alternatives

Common Design Features of the Build Alternatives[2]

Build Alternatives 1, 2, and 3 would include the following features:

- One GP lane would be added in each direction of I-405 from Euclid Street to the I-605 interchange.
- Travel lanes on the I-405 mainline would be 12 feet (ft) wide, and right side shoulders would be 10 ft wide.
- The pedestrian bridge and local street overcrossings proposed for complete replacement under Alternatives 1, 2, and 3 are the following:
    - Ward Street
    - Talbert Avenue
    - Brookhurst Street
    - Slater Avenue
    - Bushard Street
    - Warner Avenue

[2] Maintenance vehicle pullouts (MVP) are included within the current project plans, and associated impacts are included within the permanent impact areas for the project. For example, within the Alternative 3 project area, there are 124 existing MVPs. 106 of the MVPs would be replaced in kind, and 28 new MVPs are included in the plans (included in the Project Report) for a total of 134 MVPs for the proposed Alternative 3.

- Magnolia Street
- Pedestrian overcrossing near Heil Avenue
- Newland Street
- Edinger Avenue
- McFadden Avenue
- Bolsa Avenue
- Goldenwest Street
- Edwards Street
- Westminster Boulevard
- Springdale Street
- Bolsa Chica Road

- The Euclid Street/Ellis Avenue undercrossing bridge would be modified and extended.
- Two railroad overheads would be modified and extended.[3]
- Each build alternative would include interchange reconfigurations at Euclid Street, Ellis Avenue, Brookhurst Street, Magnolia Street, Warner Avenue, Beach Boulevard, and Westminster Boulevard.
- Maintenance vehicle pullouts (MVP) would be included in various locations under each build alternative.

Unique Features of Build Alternatives

Alternative 1 – Add One GP Lane in Each Direction

Alternative 1 would add a single GP lane in each direction of I-405 from Euclid Street to the I-605 interchange.

Alternative 1 would provide a full standard highway cross section with 12-ft-wide mainline travel lanes, as well as 10-ft-wide shoulders on the left (inside) and right (outside) sides in both directions.

Alternative 2 – Add Two GP Lanes in Each Direction

Alternative 2 would add one GP lane in each direction of I-405 from Euclid Street to the I-605 interchange (as in Alternative 1), plus add a second GP lane in the northbound direction from Brookhurst Street to the SR-22/7th Street interchange and a second GP lane in the southbound direction from the Seal Beach Boulevard on-ramp to Brookhurst Street.

Alternative 2 would provide a full standard highway cross section with 12-ft-wide mainline travel lanes and shoulders on the left and right sides in both directions. Right-side (outside) shoulders would be 10 ft wide, while left-side (inside) shoulders would have a maximum width of 10 ft with a provision for a widened left shoulder for HOV enforcement areas under consideration.

[3] The freeway passes over the Union Pacific Railroad (UPRR) on the Bolsa Overhead (Bridge No. 55-269 at PM 17.21) and the U.S. Navy Railroad on the Navy Overhead (Bridge No. 55-272 at PM 18.36).

Alternative 3 – Express Facility

Alternative 3 would add one GP lane in each direction of I-405 from Euclid Street to the I-605 interchange (as in Alternatives 1 and 2), plus add a tolled express lane in each direction of I-405 from SR-73 to I-605. The tolled express lane would be placed beside the existing HOV lane in each direction. The existing HOV lanes and new toll lanes would be managed jointly as an Express Lane Facility with two lanes in each direction.

Alternative 3 would provide a full standard highway cross section, with 12-ft-wide mainline travel lanes and shoulders on the left and right sides in both directions. Right-side (outside) shoulders would be 10 ft wide, while left-side (inside) shoulders would have a maximum width of 10 ft with a provision for a widened left shoulder for enforcement areas under consideration. The joint HOV/toll lane Express Lane Facility would be separated from the GP lanes by a 1- to 4-ft-wide buffer.

No Build (No Action) Alternative

The No Build Alternative provides a "baseline" for comparing impacts associated with the build alternatives because environmental review must consider the effects of not implementing the proposed project. The project baseline conditions under the No Build Alternative would provide no additional lanes or interchange improvements to the I-405 corridor. The project area would continue to operate with no additional improvements and would not achieve the project's stated purpose and need.

FIGURE 1-1. REGIONAL LOCATION

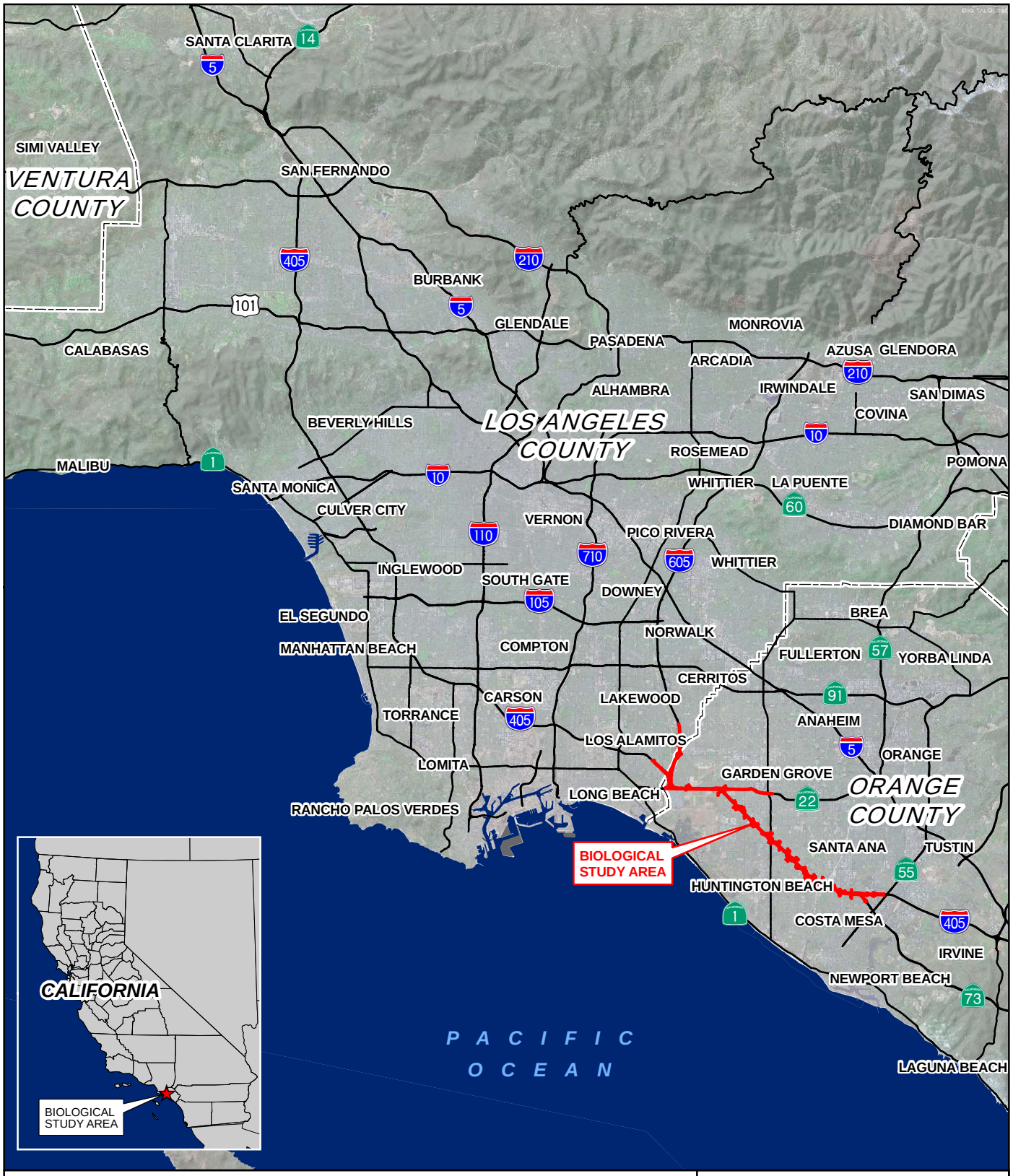


FIGURE 1

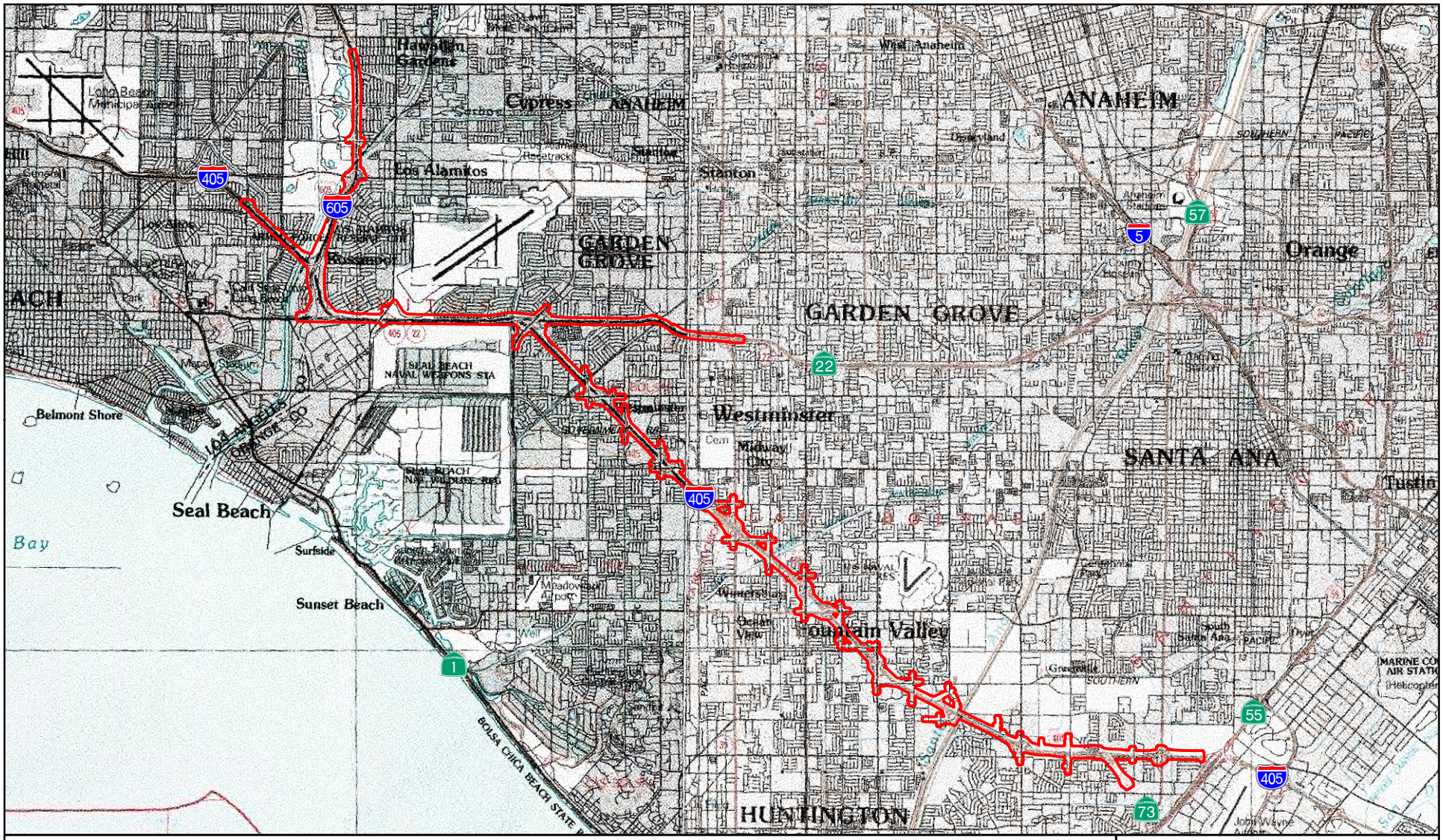
REGIONAL LOCATION

INTERSTATE 405 IMPROVEMENT PROJECT

Project No.: 29866416

Date: February 2011

FIGURE 1-2. PROJECT VICINITY



Legend

Biological Study Area

N

0 1 2

Miles

FIGURE 2

PROJECT VICINITY

INTERSTATE 405 IMPROVEMENT PROJECT

Project No.: 29866416

Date: February 2011

Source: USGS 1:100,000 Topographic Quadrangle Series, Long Beach (1981) and Santa Ana (1985)

2. STUDY METHODS

2.1. Regulatory Requirements

This section describes the laws, policies, and regulations that are applicable to the proposed project's biological resources[4].

FEDERAL

Endangered Species Act of 1973 (16 U.S.C. Sections 1531 to 1543)

The Endangered Species Act of 1973 (ESA) and subsequent amendments provide guidance for the conservation of federally listed species and the habitats upon which they depend. Section 9 prohibits the "take" of any fish or wildlife species listed under ESA as threatened or endangered, unless otherwise authorized by federal regulations. "Take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. There are two processes, Section 7 and Section 10, whereby take can be allowed for activities when they are incidental to an otherwise legal activity.

Section 7 provides a means for authorizing take of threatened or endangered species by federal agencies and applies to actions that are conducted, permitted, or funded by a federal agency. It requires federal agencies to consult with the U.S. Fish and Wildlife Service (USFWS) or National Marine Fisheries Service (NMFS), as appropriate, to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of threatened or endangered species or result in the destruction or adverse modification of critical habitat for these species. If a proposed project "may affect" a listed species or destroy or modify critical habitat, the lead agency is required to prepare a biological assessment evaluating the nature and severity of the potential effect.

Habitat Conservation Plans (Section 10)

Section 10 requires obtaining an Incidental Take Permit from USFWS for nonfederal activities that might incidentally harm (or "take") endangered or threatened wildlife. To obtain a permit, a Habitat Conservation Plan must be developed to offset any harmful effects the proposed activity might have on the species.

Section 404 of the Clean Water Act of 1977 (33 U.S.C. Sections 1251 to 1376)

The Clean Water Act (CWA) serves as the primary federal law protecting the quality of the nation's surface waters, including wetlands. Under Section 404, USACE and the U.S. Environmental Protection Agency (EPA) regulate the discharge of dredged and fill materials into Waters of the United States (WoUS). These waters are primarily defined as navigable waterways or water features (including wetlands) that have a significant nexus to navigable waters. Project sponsors must obtain authorization from USACE for all discharges of dredged or fill materials into WoUS before proceeding with a proposed activity. Section 404 permits may only be issued for a least environmentally damaging practicable alternative. Compliance with CWA Section 404 requires compliance with several other environmental laws and regulations. USACE cannot issue an individual permit or verify the use of a general permit until the requirements of NEPA, ESA,

[4] For the purposes of this document, "biological resources" include the plants, wildlife, and habitats that occur, or have the potential to occur, within the proposed project's BSA.

the Coastal Zone Management Act (CZMA), and the National Historic Preservation Act have been met. Additionally, no permit can be issued or verified until a water quality certification, or waiver of certification, has been issued pursuant to CWA Section 401.

Protection of Wetlands (Executive Order 11990)

Executive Order (EO) 11990 (*Federal Register,* Volume 42, Number 26 [May 24, 1977], p. 3) aims to avoid direct or indirect support of new construction in wetlands when a practicable alternative is available. If wetland effects cannot be avoided, all practicable measures to minimize harm must be included.

Coastal Zone Management Act (16 U.S.C. § 1451 *et seq*.)

The CZMA encourages states to preserve, protect, develop, and where possible, restore or enhance valuable natural coastal resources such as wetlands, floodplains, estuaries, beaches, dunes, barrier islands, and coral reefs, as well as the fish and wildlife using those habitats. Participation in the CZMA is voluntary; however, it makes federal financial assistance available to any coastal state, tribe, or territory that is willing to develop and implement a comprehensive coastal management program.

Fish and Wildlife Coordination Act (16 U.S.C. Sections 661 to 667e *et seq*.)

The Fish and Wildlife Coordination Act applies to any federal project where any body of water is impounded, diverted, deepened, or otherwise modified. Project proponents are required to consult with USFWS and the appropriate state wildlife agency.

Migratory Bird Treaty Act (16 U.S.C. Sections 703 to 712)

The Migratory Bird Treaty Act (MBTA) protects migratory birds and their parts, including eggs, nests, and feathers. The MBTA prohibits killing, possessing, or trading in migratory birds, except in accordance with regulations prescribed by the Secretary of the Interior. Projects that are likely to result in the taking of birds protected under the MBTA require the issuance of take permits from USFWS. Activities that would require such a permit include, but are not limited to, removal of nests, eggs, and feathers.

Protection of Migratory Bird Populations (EO 13186)

EO 13186 (*Federal Register*, Volume 66, Number 11 [January 17, 2001], p. 4) directs each federal agency taking actions that have or may have adverse impact on migratory bird populations to work with USFWS to develop a memorandum of understanding that promotes the conservation of migratory bird populations. This includes avoiding and minimizing adverse impacts on migratory bird resources when conducting agency actions, restoring and enhancing migratory bird habitats, and preventing or abating the pollution or detrimental alteration of the environment for the benefit of migratory birds.

Bald and Golden Eagle Protection Act (16 U.S.C. Sections 668 to 668d, 54 Statute 250)

The Bald and Golden Eagle Protection Act prohibits the destruction of bald and golden eagles and their occupied and unoccupied nests.

Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. Section 1801 *et seq*.)

The Magnuson-Stevens Fishery Conservation and Management Act requires all federal agencies to consult with NMFS on all actions or proposed actions (permitted, funded, or undertaken by the agency) that may adversely affect fish habitats, and it requires cooperation among NMFS, the councils, fishing participants, and federal and state agencies to protect, conserve, and enhance Essential Fish Habitat, which is defined as those waters and substrates necessary to fish for spawning, breeding, feeding, and growth to maturity.

Invasive Species (EO 13112)

EO 13112 (Invasive Species) requires federal agencies to combat the introduction or spread of invasive species in the United States. This EO 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." Federal Highway Administration (FHWA) guidance issued August 10, 1999, directs the use of the State's noxious weed list to define the invasive plants that must be considered as part of the CEQA analysis for a proposed project in California.

STATE

California Coastal Act (Public Resource Code Division 20, Section 30000 *et seq*.)

The California Coastal Act is the State's Coastal Zone Management Program, as referenced under the CZMA above. The California Coastal Act defines the "coastal zone" of California as extending generally 1,000 ft (305 meters [m]) inland from the coast and 3 mi (5 kilometers [km]) seaward. In certain areas, the inland boundary can extend up to 5 mi (8 km). The California Coastal Act requires a coastal development permit from either the Coastal Commission or a local government that has a certified Local Coastal Program.

Porter-Cologne Water Quality Control Act (California Water Code Division 7)

The Porter-Cologne Water Quality Control Act (Porter-Cologne) established nine Regional Water Quality Control Boards (RWQCB). These boards oversee water quality on a day-to-day basis at the local and/or regional level, and they prepare and update water quality control plans. The RWQCB also issues Section 401 water quality certifications. Porter-Cologne also grants ultimate authority to the State Water Resources Control Board over State water rights and water quality policy.

California Endangered Species Act (Sections 2050 to 2085)

The California Endangered Species Act (CESA) establishes the policy of the State to conserve, protect, restore, and enhance threatened or endangered species and their habitats by protecting "all native species of fishes, amphibians, reptiles, birds, mammals, invertebrates, and plants, and their habitats, threatened with extinction and those experiencing a significant decline which, if not halted, would lead to a threatened or endangered designation." It mandates that state agencies do not approve a project that would jeopardize the continued existence of these species if reasonable and prudent alternatives are available that would avoid a jeopardy finding. There are no state agency consultation procedures under CESA. For projects that would affect species that are federally and state listed, compliance with the federal ESA satisfies CESA if the California Department of Fish and Game (CDFG) determines that the federal incidental take

authorization is consistent with CESA under Section 2080.1. For projects that would result in take of a species that is state listed only, the project sponsor must apply for a take permit in accordance with Section 2081(b).

California Native Plant Protection Act (Sections 1900 to 1913)

The California Native Plant Protection Act requires all state agencies to utilize their authority to carry out programs to conserve endangered and rare native plants. It prohibits importation, take, and sale of such plants. The CESA defers to the California Native Plant Protection Act of 1977 (California Fish and Game Code [CFG Code] Sections 1900–1913), which ensures that state-listed plant species are protected.

Lake and Streambed Alteration Program (Section 1600 *et seq*.)

The Lake and Streambed Alteration Program requires notifying CDFG prior to any project activity that would substantially divert or obstruct the natural flow of any river, stream, or lake; substantially change or use any material from the bed, channel, or bank of any river, stream, or lake; or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake. This includes ephemeral streams, desert washes, and watercourses with a subsurface flow. It may also apply to projects that occur within the floodplain of a body of water.

Natural Communities Conservation Planning Act (Sections 2800 to 2835)

The Natural Communities Conservation Planning Act was enacted to encourage broad-based planning to provide effective protection and conservation of the state's wildlife resources while continuing to allow appropriate development and growth. Natural Community Conservation Plans may be implemented that identify measures necessary to conserve and manage natural biological diversity within the planning area while allowing compatible and appropriate economic development, growth, and other human uses.

Bird Nesting Protections (Sections 3503 and 3503.5)

The Bird Nesting Protections states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto. To avoid violation of the take provisions, it is generally required that project-related disturbance at active nesting territories be reduced or eliminated during the nesting cycle.

Fully Protected Species (Sections 3511, 4700, 5050, 5515)

Four sections of the CFG Code list 37 fully protected species (CFG Code Sections 3511, 4700, 5050, and 5515) and prohibit take or possession "at any time" of the species listed, with few exceptions, and state that "no provision of this code or any other law shall be construed to authorize the issuance of permits or licenses to 'take' the species," and that no previously issued permits or licenses for take of the species "shall have any force or effect" for authorizing take or possession.

2.2. Studies Required

For the purposes of this analysis, the BSA is defined as the project's proposed limits of physical ground disturbance (i.e., project footprint), plus an approximate 150-ft buffer that includes sufficient adjacent area to adequately assess the direct, indirect, and cumulative effects of the proposed action on the listed species. The 150-ft buffer was determined by a qualified biologist prior to initiating field surveys as a

consequence of the urban and anthropogenic influences adjacent to the project footprint. The buffer is also intended to provide the Design Engineer with some flexibility to account for potential changes in engineering alignments, where practical, as the proposed project moves toward development of final plans and specifications.

Surveys of the BSA were performed to assess biological resources and determine the potential for occurrence of common and special-status species[5], their habitats, and special aquatic resource areas[6] where practical. Where access to the entire BSA was not possible as a result of inaccessible areas (e.g., interior portions of major interchanges, private property, topographic relief, or other physical barriers), observations were made from the nearest appropriate vantage points within public ROWs with binoculars and via aerial photographic interpretation.

Prior to beginning the field surveys, available information was reviewed from resource management plans, local resource experts, and relevant documents to determine locations and types of biological resources that have the potential to exist within and adjacent to the BSA. Primary data sources included:

- May 2009 and April 2010 California Natural Diversity Database (CNDDB) maintained by CDFG and California Native Plant Society (CNPS) Electronic Inventory of Rare and Endangered Plants of California, which were queried for records of occurrence of special-status species and their habitats within the Los Alamitos, Seal Beach, and Newport Beach, California U.S. Geological Survey (USGS) 7.5-Minute topographic quadrangles (CDFG 2009, CDFG 2010, CNPS 2009, CNPS 2010, USGS 1981);
- USFWS Carlsbad Field Office List of Proposed, Threatened, and Endangered Species, and Critical Habitats for the I-405 Widening Project from 405/73 Interchange to 405/605 Interchange, Orange County, CA (USFWS 2009a);
- National Wetlands Inventory (USFWS 2009b);
- USFWS Critical Habitat Portal and File Data (USFWS 2009c, USFWS 2010b); and
- USFWS Ventura Field Office Online Species List for Orange and Los Angeles County (USFWS 2010a).

Field surveys of the BSA assessed general and dominant vegetation types, plant community sizes, habitat types, and species present within existing communities. Vegetation community characterizations within the BSA were derived from the criteria and definitions of Holland (1986) and Sawyer and Keeler-Wolf (1995). Plants were identified to the taxonomic level sufficient to determine whether plant species observed were nonnative, native, or special-status. Plants of uncertain identity were subsequently identified from

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[5] For the purposes of this analysis, "special-status species" include any species that has been afforded special recognition by federal, state, or local resources agencies (e.g., USFWS, CDFG), and/or resource conservation organizations (e.g., California Native Plant Society [CNPS]). The term "special-status species" excludes those avian species solely identified under Section 10 of the MBTA for federal protection. MBTA Section 10 protected species are afforded avoidance and minimization measures per state and federal requirements.

[6] For the purposes of this analysis, "special aquatic resource areas" are defined as potential USACE jurisdiction pursuant to Section 404 of the CWA; RWQCB legal authority in accordance with Section 401 of the CWA and as defined within Section 13050(e) *(et seq.)* of the California Water Code (CWC) via the Porter-Cologne Water Quality Control Act (Porter-Cologne); and CDFG jurisdiction pursuant to Section 1600 *(et seq.)* of the CFG Code.

taxonomic keys (Hickman 1993). Scientific and common species names follow Hickman (1993). A list of observed plant species is provided in Appendix B.

Wildlife observations were also documented within the BSA. The presence of a wildlife species was based on direct observation, wildlife sign (e.g., tracks, burrows, nests, scat), or vocalization. Field data compiled for observed wildlife included the scientific name, common name, habitat, and evidence of sign when no direct observations were made. A list of observed wildlife species is provided in Appendix C.

Wildlife corridors were also evaluated. This evaluation included a literature review to identify any previously recognized regional[7] and/or local[8] wildlife corridors or linkages within the BSA (Rosenberg *et al.* 1997, South Coast Wildlands 2008).

Additionally, the BSA was assessed for its potential to support special-status species based on habitat suitability comparisons with reported occupied habitats and past reported occurrences of species within the region. The following potential for occurrence definitions were derived from Caltrans Standard Environmental Reference (Caltrans 2009):

- *Absent [A]* – Species distribution is restricted by substantive habitat requirements that do not occur or are negligible within the BSA, and no further survey or study is obligatory to determine likely presence or absence of this species.
- *Habitat Present* [HP] – Species distribution is restricted by substantive habitat requirements that occur within the BSA, and further survey or study may be necessary to determine likely presence or absence of species.
- *Present* [P] – Species or species sign were observed within the BSA.
- *Critical Habitat* [CH] – The BSA is located within a designated critical habitat unit.

USGS 7.5-minute Topographic Quadrangle maps were also examined to determine the locations of potential special aquatic resource areas within the BSA. Those portions of the BSA suspected of containing potential special aquatic resource areas (e.g., WoUS, Waters of the State [WoS], wetlands and riparian habitats) were subsequently assessed by visual observation in the field (see additional methods for *Special Aquatic Resource Areas* below).

Focused Surveys

As a result of the above-referenced literature reviews and general biological surveys of the BSA, the following focused surveys were conducted:

- Southern Tarplant Focused Surveys;
- Burrowing Owl Focused Surveys; and
- Areas suspected of being special aquatic resource areas were formally delineated.

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[7] Regional corridors link two or more large areas of natural open space and serve to maintain demographic and genetic exchange between wildlife populations residing within these geographically distinct areas (Beier and Loe 1992).

[8] Local corridors give resident animals access to essential resources (e.g., water, food, cover, or den sites) within a large habitat patch and may also function as secondary connections to the regional corridor system (Beier and Loe 1992).

Southern Tarplant Surveys

Botanists conducted focused Southern Tarplant surveys in suitable habitat within the BSA during the appropriate blooming periods in July 2010.

Prior to conducting the surveys, a known Southern Tarplant reference population at Mason Regional Park, Irvine, California, was evaluated. The reference population is within 3.4 mi of the BSA.

The reference population was visited to verify that that the focused plant surveys within the BSA coincided with the local blooming period of this species[9], to ensure that Southern Tarplant was readily identifiable at the time of survey, and to understand local variations in flower phenology prior to survey (CDFG 2010). Focused survey methods were derived from the standardized guidelines issued by USFWS (USFWS 2000), CDFG (CDFG 2000), and CNPS (CNPS 2001).

The focused surveys were completed by professionals walking parallel belt transects spaced at roughly 30-ft intervals throughout suitable habitat within the BSA. The distance between transects was occasionally modified to ensure adequate coverage of the BSA and to account for differences in terrain, vegetation density, access, health and safety considerations, and ground surface visibility. Surveys were targeted within unique portions of the BSA where microhabitats had an increased potential to support Southern Tarplant.

Burrowing Owl Surveys

An initial Burrowing Owl burrow investigation (i.e., habitat assessment) was performed in June and July 2009, and April 2010 in accordance with California Burrowing Owl Consortium (CBOC) (CBOC 1993) requirements. Initial surveys were performed to locate suitable owl habitat and other likely owl nesting substrates. These surveys were performed by searching for habitat typically utilized by Burrowing Owls (e.g., mounds, rubbish piles, drainage ditches, earthen berms, unpaved fields, fallow fields, and agricultural areas, where accessible).

Methodical focused surveys of the BSA and potential owl burrows, including cracks and crevices within man-made structures, were conducted by walking through areas of suitable habitat. Survey transects were spaced approximately 100 ft apart to allow adequate visual coverage of the BSA's terrain to the maximum extent practical. Where necessary, transect spacing was reduced or expanded to account for differences in BSA accessibility, terrain, vegetation density, health and safety considerations, and visibility.

Incidental observations of other wildlife species were recorded as well. The presence of each observed species was based on direct observation or vocalization. Bird scientific nomenclature and common names follows Sibley (2000). Burrow and focused owl surveys were conducted when weather conditions were conducive to observing burrows and owls outside of burrows. The surveys were not performed during rain or within 5 days of precipitation, high winds (greater than 20 miles per hour), dense fog, or temperatures more than 90 degrees Fahrenheit (see Table 2-1 for additional survey details including survey dates, survey personnel, and weather conditions). Where access to the entire BSA was not possible because of private property or physical barriers, observations were made from the nearest appropriate public vantage points from public ROWs with binoculars.

[9] Appropriate blooming period was determined from CNPS's Inventory of Rare and Endangered Vascular Plants of California (CNPS 2001).

TABLE 2-1. BURROWING OWL SURVEY INFORMATION

Date	Personnel*	Temperature (°F)	Wind (mph)	Sky
27 July 2009	DM, KM	65-68	0-5	Cloudy
28 July 2009	DM, KM	64-72	2-5	P. cloudy
29 July 2009	CS, KM	63-73	0-8	Clear
23 July 2010	CS, DM	62-70	0-2	Cloudy
24 July 2010	CS, DM	61-74	2-5	Cloudy
26 July 2010	DM, TW	62-74	2-5	Cloudy
27 July 2010	DM. TW	60-68	0-5	Cloudy
28 July 2010	DM, TW	61-70	2-5	Cloudy

*URS Biologists: Dennis Miller (DM), Ken McDonald (KM), Cara Snellen (CS), Tamara Wynne (TW)

Potential Jurisdictional Areas

A detailed survey was conducted within the BSA for potential jurisdictional areas. Delineation methods for features subject to USACE jurisdiction are provided in Appendix D (Jurisdictional Determination). Delineation methods for features subject to RWQCB or CDFG jurisdiction are provided below.

RWQCB Data Collection Techniques

Any potential feature that was deemed not to be within the jurisdiction of the CWA, but had potential jurisdiction as a WoS under Porter-Cologne (e.g., isolated waters and/or wetlands) was assessed in the field by utilizing those data collection techniques described for CWA Section 404 data collection within Appendix D, except that jurisdiction was not excluded based on an interstate or foreign commerce connection, or through a significant nexus analysis for non-Relatively Permanent Waters (RPWs).

CDFG Data Collection Techniques

Suspected CDFG jurisdictional features were assessed in the field for the presence of definable streambeds (i.e., with bed, bank, and channel) and any associated riparian habitat. Streambeds and suspected riparian habitats were evaluated using the CFG Code Section 1600 *et seq.* and guidance described in A Field Guide to Lake and Streambed Alteration Agreements Sections 1600-1607 (ESD-CDFG 1994).

Pursuant to Division 2, Chapter 6, Sections 1600-1602 *et seq.* of the CFG Code, CDFG regulates any proposed activity that may substantially modify, divert, obstruct, or any activity that causes changes to the flow or bed, channel, or bank of any river, stream, or lake that supports fish or wildlife. According to 14 California Code of Regulations (CCR) 1.72, a "stream" (including creeks and rivers) is defined as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having surface or subsurface flow that supports or has supported riparian vegetation." CDFG's definition of "lake" includes "natural lakes or man-made reservoirs." CDFG jurisdiction within altered or artificial waterways is based upon the value of those waterways to fish and wildlife.

For clarification, the CDFG Legal Advisor has prepared the following opinion (ESD-CDFG 1994):

- Natural waterways that have been subsequently modified and that have the potential to contain fish, aquatic insects, and riparian vegetation will be treated like natural waterways.
- Artificial waterways that have acquired the physical attributes of natural stream courses and that have been viewed by the community as natural stream courses should be treated (by CDFG) as natural waterways.
- Artificial waterways without the attributes of natural waterways should generally not be subject to CFG Code provisions.

Total CDFG jurisdiction limits were delineated for each feature within the BSA containing a defined bed, bank, and channel. The dimensions (i.e., linear length, width, and area) of each feature were determined based on the top-of-bank limits, or in the case of constructed flood-control channels or culverts lacking a natural bank, based on the USACE-defined "ordinary high water mark (OHWM)." If adjacent bank, floodplain, and/or terrace areas were vegetated with riparian species associated with the feature, then the feature, plus any associated riparian vegetation, was mapped and included as part of CDFG jurisdiction. Vegetation communities within and adjacent to features containing a defined bed, bank, or channel were recorded based on Holland (1986) and Sawyer and Keeler-Wolf (1995). Plant species within these communities were recorded based on Hickman (1993).

Jurisdictional Area Impact Calculations

To determine jurisdictional area impact acreages within BSA boundaries, calculations of the quantity of permanent loss and temporary impact were generated by superimposing the project footprint's cut and fill limits from draft design plans dated January 21, 2011, over aerial maps of the BSA. Any placement of permanent aboveground roadway, appurtenances, utilities, facilities, or other permanent cut and/or fill within special aquatic resource areas was considered a permanent loss. Temporary impacts included unpaved road shoulders, access areas, laydown yards, and any other lands that would have temporary vegetation and/or soil disturbance but would be returned to pre-project conditions after construction.

2.3. Personnel and Survey Dates

Surveys of the project's BSA were conducted throughout 2009, 2010, and 2011 by biologists Ken McDonald, Greg Hoisington, Dennis Miller, Cara Snellen, Elizabeth Kempton, Brent Helm, Lenny Malo, and Tamara Wynne. Surveys of the BSA were conducted to assess biological resources during the following months:

- June 2009;
- July 2009;
- August 2009;
- April 2010;
- July 2010; and
- January through February 2011.

Burrowing Owl surveys were conducted in suitable habitat within the BSA on July 23-24, 2010; July 27-29, 2009; and July 26-28, 2010.

2.4. Agency Coordination and Professional Contacts

In June 2009, USFWS provided Caltrans a list of proposed, threatened and endangered species and critical habitat within and adjacent to the BSA. The letter and list are provided in Appendix F. Furthermore, in June 2011, Caltrans requested an updated list of proposed, threatened and endangered species and critical habitat within and adjacent to the BSA, and it has also been included in Appendix F. Based on the surveys and analysis presented in this Natural Environment Study (NES), there is no potential for the project to affect federal or state listed threatened or endangered species. As the Federal Lead Agency, Caltrans will consult with the U.S. Fish and Wildlife Service (USFWS) regarding Federal Endangered Species Act Section 7 compliance.

A delineation of WoUS and WoS was completed and is summarized in this NES. The jurisdictional delineation (see Appendix D) will be submitted to USACE for an approved Jurisdictional Determination to support obtaining a 404 permit and 401 water quality certification during the plans, specifications, and estimate (PS&E) phase of the project. The delineation of WoS will be provided to CDFG to support future mitigation discussion and in support of obtaining a 1602 Streambed Alteration Agreement during the PS&E phase of the project.

2.5. Limitations that may Influence Results

The collection of biological field data is normally subject to environmental factors that cannot be controlled or reliably predicted. Consequently, the interpretation of field data must be conservative and consider the uncertainties and limitations necessarily imposed by the environment; however, due to the experience and qualifications of the consultants involved in the surveys and data analysis, this limitation is not expected to severely influence the results or substantially alter the findings of the work performed within the BSA. The services performed by consultants were conducted in a manner consistent with that level of care and skill ordinarily exercised by other professionals under similar circumstances. No other representations are either expressed or implied, and no warranty or guarantee is included or intended. Opinions relating to presence, absence, or potential for occurrence of biological resources are based on limited data, and actual conditions may vary from those encountered at the times and locations where the data were obtained, despite the use of due professional care.

3.1. Description of the Existing Biological and Physical Conditions

3.1.1. Study Area

The BSA is comprised predominantly of heavily human-influenced and altered habitats associated with roadways, residential, public, and commercial developments. No high-quality native habitats occur within the BSA. Vegetated lands within the BSA are limited to ornamental landscaping on developed lands, agricultural fields, and flood-control facilities. Due to the presence of vehicular traffic and other public/private infrastructure, the BSA is consistently exposed to trash, debris, noise, light, dust, emissions, and roadway maintenance activities. As a result, plant and wildlife species present within the BSA are assumed to be accumulated/adapted to frequent human disturbance.

3.1.2. Physical Conditions

The BSA occurs at an approximate elevation of 8 to 56 ft above mean sea level on gently sloping terrain. The regional climate within the vicinity of the BSA consists of hot and dry summer months with relatively cool and wet winters. Seasonal rainfall occurs predominantly in the winter and spring months (November through April) and was below average prior to the 2009 surveys and near average prior to the 2010 and 2011 surveys. The following precipitation data for the Long Beach Airport were utilized for this analysis (NWS 2011):

- Average annual precipitation measures 16.48 inches (data from 1939-2006);
- Seasonal precipitation prior to fieldwork in 2009 (fall 2008 – spring 2009 season) measured 9.41 inches, which was 60 percent of average precipitation (data from 1971-2000);
- Seasonal precipitation prior to fieldwork in 2010 (fall 2009 – spring 2010 season) measured 15.60 inches, which was 94 percent of average precipitation; and
- Seasonal precipitation prior to fieldwork in 2011 (fall 2010 – winter 2011 season) measured 13.78 inches, which was 84 percent of average precipitation.

3.1.3. Biological Conditions in the Biological Study Area

The BSA includes four vegetation communities, which are listed in Table 3-1. Descriptions of each community are provided below. Figures 3-1 through 5-23 depict the vegetation communities observed within the BSA. A list of plants observed within the entire BSA can be found in Appendix B.

TABLE 3-1. VEGETATION COMMUNITIES OBSERVED WITHIN THE BSA.

Vegetation Community	Total Acres
Agriculture	35.6
Developed	2,529.4
Riparian	1.7
Drainage	72.1
Total	2,638.8

Agriculture

This community includes vegetation found on agricultural lands subject to fruit farming (e.g., strawberries). Agricultural lands are limited to two locations: (1) the northern portion of the BSA, south of I-405 on U.S. Naval Station lands between Seal Beach Boulevard and Bolsa Chica Road, and (2) the southern portion of the BSA north of I-405 between Harbor Boulevard and Fairview Drive.

Developed

Developed areas occur throughout the BSA and include ditches, roadways, parking lots, vacant lots, residences, commercial buildings, and other private/public infrastructure. No high-quality native habitats exist within these developed areas. Developed areas often contain ornamental plantings, most of which are nonnative species. Typical ornamental species include Brazilian pepper tree (*Schinus terebinthifolius*), gum tree (*Eucalyptus spp.),* and iceplant (*Carpobrotus edulis*). Native species are occasionally present and include Freemont cottonwood (*Populus fremontii*) and western sycamore (*Plantanus racemosa*). Developed areas also contain disturbed lands that are either devoid of native vegetation (e.g., dirt lots) or contain areas dominated by ruderal vegetation (e.g., nonnative grasses and annuals). Typical species present within this community include nonnative ripgut grass (*Bromus diandrus*), prickly lettuce (*Lactuca serriola*), common sow thistle (*Sonchus oleraceus*), cheeseweed (*Malva parviflora*), Russian thistle (*Salsola tragus*), red-stemmed filaree (*Erodium cicutarium*), foxtail barley (*Hordeum murinum*), wild oats (*Avena fatua*), and tree tobacco (*Nicotiana glauca*). Typical native species within this community include telegraph weed (*Heterotheca grandiflora*), horseweed (*Conyza canadensis* and *C. bonariensis*), sunflower (*Helianthus annuus),* and dove weed (*Eremocarpus setigerus*).

Riparian

The riparian community that occurs within limited portions of the BSA consists of native riparian habitat that has been heavily impacted by invasive, nonnative species or disturbed by human activities (e.g., trash). The low-quality riparian habitat is limited to the banks of the San Gabriel River. Typical nonnative species within this community include giant reed (*Arundo donax*), castor bean (*Ricinis communis*), Mexican fan palm (*Washingtonia robusta*), tree of heaven (*Ailanthus altissima*), black mustard (*Brassica nigra*), poison hemlock (*Conium maculatum*), and fennel (*Foeniculum vulgare*). Typical native species within this community include mule fat (*Baccharis salicifolia),* umbrella sedge (*Cyperus eragrostis*), and California bulrush (*Scirpus californicus*).

Drainage

Drainages occur throughout the entire BSA and consist of concrete-lined, rock riprap, and/or earthen channels. Many of these channels contain a combination of concrete/rock/earth lining. Vegetation within these channels is either absent or considered to be highly variable from year to year depending on the frequency and volume of storm flows that may scour some or all of the vegetation from within the channel. In drainages that contained vegetation, typical plant species observed included nonnative barnyard grass (*Echinocloa crus-galli*), sprangletop (*Leptocloa uninervia*), annual beard grass (*Polypogon monspeliensis*), umbrella sedge, California bulrush, and cattail (*Typha latifolia* and *T. domengensis*).

Common wildlife species observed within the BSA included a range of avian species such as House Finch (*Carpodacus mexicanus*), Northern Mockingbird (*Mimus polyglottos*), Black Phoebe (*Sayornis nigricans*), and American Crow (*Corvus brachyrhynchos*). Commonly occurring mammals (e.g., opossum [*Didelphis*

virginiana], ground squirrel [*Spermophilus beecheyi*], and raccoon [*Procyon lotor]),* were observed, as were reptiles and invertebrates. Common wildlife species observed within the BSA are listed in Appendix C.

Although no bats were observed within the BSA, there is a potential for bats to occur within bridges, culverts, and other structures that could support roosting. Bridges and other structures offer natural roosts that include thermal buffering, which bats require (Perlmeter 1996, 2004, Pierson *et al.* 1996). Bridges also frequently serve to replace natural roosts in altered landscapes. No historic records of bats roosting or breeding colonies occur within the BSA.

3.2. Regional Species and Habitats of Concern

As a result of the above-referenced literature reviews and biological surveys of the BSA, the following Regional Habitats of Concerns and Species have been identified.

Regional Habitats of Concern

The BSA does not contain designated USFWS critical habitat or any identified regional wildlife corridors. As stated below, no known regional wildlife migration corridors are known to occur within the BSA, and any historic corridors that may have been historically present have since been modified as a result of private and public development.

Nonetheless, four regional habitats of concern are reported to occur within the USGS quadrangles containing the proposed project:

- Southern Cottonwood Riparian Forest;
- Southern Coastal Saltmarsh;
- Southern Dune Scrub; and
- Southern Foredunes.

One historical record of Southern Cottonwood Riparian Forest occurs within 2 mi of the BSA within the Santa Ana River; however, this community type is considered by the CNDDB to be extirpated from the lower Santa Ana River after this portion of the river was channelized.

Southern Coastal Saltmarsh habitat is identified as occurring within portions of Newport Back Bay, Bolsa Chica State Park, Anaheim Bay, and Alamitos Bay, all of which are outside of the BSA. The San Gabriel River within the BSA receives some tidal influence, although habitat within this portion of the BSA is considered to be brackish riverine/estuarine, not Southern Coastal Saltmarsh (USFWS 2009b), due to the presence of perennial freshwater input. Southern Coastal Saltmarsh contains salinity generally at or near coastal oceanic salinity levels. No such vegetation community occurs within the BSA.

Southern Dune Scrub is identified within Bolsa Chica State Park and also along the Pacific Coast Highway near Brookhurst Street; however, this habitat does not occur within the BSA. Similarly, Southern Foredune habitat is identified along potions of the immediate coast from Newport Beach to Surfside Beach, but it does not occur within the BSA.

No regional wildlife migration corridors are known to occur within the BSA (South Coast Wildlands 2008), and any historic regional corridors that may have been present have since been modified. Although specific regional wildlife corridors do not occur within the BSA, constructed flood-control facilities and channels may provide limited localized linkages between isolated native habitat patches beyond the BSA. These include

the San Gabriel River and Santa Ana River, which are both concrete-lined upstream and downstream of the BSA. Wildlife usage within these channels is limited to commonly occurring birds, mammals, reptiles, fish, and amphibians.

Special-Status Plant Species

Twenty-four (24) special-status plant species are reported to occur within the USGS quadrangles surrounding the proposed project. Twenty-three (23) of these special-status plant species were determined to have an *Absent* (A) potential for occurrence designation within the BSA. Appendix A includes a list of all special-status plant species, their habitat descriptions, status, and potential for occurrence.

Habitat for one (1) special-status plant species was identified within the BSA:

- Southern Tarplant (*Centromadia parryi* ssp. *australis*)

Although potential habitat for this species occurs within limited portions of the BSA, general surveys conducted within the BSA in 2009 and focused surveys conducted in 2009 and 2010 concluded that this species was absent from the BSA. Twelve (12) reported populations of Southern Tarplant are reported within the Los Alamitos, Seal Beach, and Newport Beach quadrangles containing the BSA (CDFG 2010). Four of the locations are historical records (i.e., 1920-1930s) and are considered extirpated. The remaining eight populations are considered extant and occur from 1.5 to 2.4 mi from the BSA limits. These extant populations are generally associated with Newport Back Bay or Bolsa Chica State Park, and no populations are reported to occur within the BSA.

Special-Status Wildlife Species

Thirty-five (35) special-status wildlife species are reported to occur within the USGS quadrangles containing the proposed project. Thirty-four (34) of these special-status wildlife species were determined to have an "*A"* potential for occurrence designation within the BSA. Appendix A includes a list of all of the special-status wildlife species, their habitat descriptions, status, and potential for occurrence.

One wildlife species was determined to have an "*HP"* potential for occurrence designation within the BSA:

- Burrowing Owl (*Athene cunicularia*)

Potential habitat within the BSA includes the following areas:

- Along and within Alamitos Channel south of East Willow Street, west of southbound I-605, and north of the intersection of I-605 and I-405 (map pages 3-3, 3-4, and 3-6);
- Southwest portions of the Seal Beach Boulevard overpass associated with earthen segments of Alamitos Channel (map page 3-8);
- Earthen portions of Bolsa Chica Channel south of I-405 and west of Valley View Street (map pages 3-10 and 3-11);
- Along the I-405 overpass crossing railroad tracks at the northwest corner of Westminster Mall (map page 3-18);

- Northeast of the Newland Street overpass within an earthen detention basin and overpass (map page 3-21),
- Fountain Valley Channel (map page 3-25);
- Greenville Banning Channel (map page 3-27); and
- Earthen portions of Gisler Storm Channel east of Fairview Road (map page 3-29).

General surveys conducted within the BSA in 2009 and focused surveys conducted in 2010 concluded that this species was absent from the BSA. Two reported occurrences of Burrowing Owl have been documented within the quadrangles containing the BSA (CDFG 2010). No occurrences are reported within the BSA. One 1993 report occurs within Bolsa Chica State Park, approximately 4 mi from the BSA, and another report from 2006 occurs in Fairview Park, Costa Mesa, California, located 2 mi from the BSA.

Potential Jurisdictional Areas

USACE jurisdiction within the BSA was based on the presence of an OHWM and whether or not a particular feature was considered a navigable water, a wetland adjacent to navigable water, or a non-navigable tributary that sustained relatively permanent flows to a navigable water. Non-navigable features with non-relatively permanent flows tributary to a navigable water required a significant nexus determination to determine jurisdiction. Non-navigable features with non-relatively permanent flows that did not have a significant nexus with a navigable water, as well as isolated features, were classified as non-jurisdictional.

A total of 115 features within 4 watersheds (i.e., San Gabriel River/Coyote Creek; Anaheim Bay-Huntington Harbour; Santa Ana River; and Newport Bay) were observed within the BSA, consisting of 19 drainages potentially subject to USACE jurisdiction. Total USACE jurisdiction within the BSA is detailed within Table 3-2 and Appendix D.

RWQCB jurisdiction applies to those same features subject to the USACE regulation within the BSA. Accordingly, 19 drainages are subject to RWQCB compliance as well. Total RWQCB jurisdiction within the BSA is included in Table 3-2 and depicted within Appendix E.

Total CDFG jurisdiction within the BSA is detailed in Table 3-2 and depicted within Appendix E. CDFG jurisdiction within the BSA includes 19 drainages that contain a well-defined bed and bank, function as either modified natural drainages, and/or function as artificial drainages that have acquired the physical attributes of natural stream courses and provide values for fish and wildlife. Each of these features contains biological resources that are hydrologically connected to a larger, downstream waterbody and, therefore, provide functions and values for wildlife.

TABLE 3-2. SUMMARY OF POTENTIAL JURISDICTIONAL AREAS WITHIN THE BSA

Feature ID	Feature description	OHWM width (ft)	Length in BSA(ft)	Jurisdiction within BSA(acres)			
				USACE Other Waters	USACE Wetland	RWQCB	CDFG
San Gabriel Rive-Coyote Creek Watershed							
1-1	Flood Control Facility: 8-ft-wide concrete channel; non-RPW with no significant nexus; unvegetated; dry during survey (26 April 2010); drains road runoff south to culvert, then underground southwest to Feature 1-2 (Photo 1-1).	none	168	--	--	--	--
1-2	Flood Control Facility: 16-ft-wide concrete channel; non-RPW with no significant nexus; unvegetated; 1-inch standing water present during survey (26 April 2010); drains road and landscape runoff from developed and park areas to south to Coyote Creek and the San Gabriel River (a Traditional Navigable Water [TNW]) (Photo 1-2).	none	6,085	--	--	--	--
3-1	Ditch: 6-ft-wide concrete v-ditch; non-RPW with no significant nexus; no OHWM; unvegetated; dry during survey (26 April 2010); drains landscape and road runoff south to Alamitos Channel and the San Gabriel River (an RPW) (Photo 3-1).	none	5,489	--	--	--	--
3-2	Ditch: 2-ft-wide concrete v-ditch; non-RPW with no significant nexus; no OHWM; drains road and landscape runoff to Los Alamitos Channel and the San Gabriel River (an RPW); unvegetated (Photo 3-2).	none	397	--	--	--	--
3-3	Ditch: 3-ft-wide concrete v-ditch; non-RPW with no significant nexus; no OHWM; drains road and landscape runoff to Los Alamitos Channel and the San Gabriel River (an RPW); unvegetated (no photo).	none	211	--	--	--	--
3-4	Ditch: 4-ft-wide concrete v-ditch; non-RPW with no significant nexus; no OHWM; drains road and landscape runoff to Feature 3-5 and the San Gabriel River (an RPW); unvegetated (no photo).	none	357	--	--	--	--
3-5*	Flood Control Facility: 30-ft-wide concrete channel; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff to Los Alamitos Channel and the San Gabriel River (a TNW) (Photo 3-5).	none	483	--	--	--	--
3-6*	Flood Control Facility: Coyote Creek; 150-ft-wide concrete channel; blue line; RPW; unvegetated; drains commercial, residential, and road runoff to San Gabriel River (an RPW) (Photo 3-6).	150	333	1.22	--	1.22	1.22
4-1*	Flood Control Facility and Detention Basin: Los Alamitos Channel; blue line; earthen basin; RPW; 2 inches flowing water during survey (27 April 2010); drains road, residential, and commercial runoff to the San Gabriel River (an RPW); upland vegetated (Photos 4-1a and 4-1b).	220	4,878	12.45	--	12.45	12.45

TABLE 3-2. SUMMARY OF POTENTIAL JURISDICTIONAL AREAS WITHIN THE BSA

Feature ID	Feature description	OHWM width (ft)	Length in BSA(ft)	Jurisdiction within BSA(acres)			
				USACE Other Waters	USACE Wetland	RWQCB	CDFG
4-2*	Flood Control Facility: Rossmoor Storm Channel; blue line; 18-ft-wide concrete channel; unvegetated; drains to Los Alamitos Channel and San Gabriel River (a TNW) (Photo 4-2).	none	18	--	--	--	--
4-3*	Flood Control Facility: Mainway Drive Channel; 15-ft-wide concrete channel; unnamed blue line; RPW; drains west to Los Alamitos Channel and San Gabriel River (an RPW); drains surface water runoff (Photo 4-3).	4	974	0.09	--	0.09	0.09
4-4*	Flood Control Facility and Wetland: San Gabriel River; blue line; RPW; earthen and rock riprap channel with included wetland (see Wetland Data Sheet SGR-W and SGR-U and Photos 4-4a and 4-4b).	258	384	1.30	0.93	2.23	2.61
4-5	Flood Control Facility: 5-ft-wide concrete channel; non-RPW with no significant nexus; unvegetated; drains irrigation runoff to Mainway Drive Channel, Los Alamitos Channel, and San Gabriel River (a TNW) (no photo).	none	1,103	--	--	--	--
4-6	Flood Control Facility: 11-ft-wide concrete channel; non-RPW with no significant nexus; unvegetated; drains storm and irrigation runoff to Los Alamitos Channel and San Gabriel River (a TNW) (no photo).	none	620	--	--	--	--
5-1*	Flood Control Facility: Los Cerritos Channel; 94-ft-wide; blue line; concrete channel; RPW, 1-inch flowing water during survey (27 April 2010); unvegetated; drains residential, industrial, and road runoff to Los Cerritos Channel and Alamitos Bay (both RPWs) (Photo 5-1).	94	237	0.50	--	0.50	0.50
5-2	Ditch: 4-ft-wide concrete v-ditch; non-RPW with no significant nexus; no OHWM; unvegetated; dry during survey (26 April 2010); drains stormwater from residential lands to street gutter that drains to Los Cerritos Channel (an RPW) (Photo 5-2).	none	390	--	--	--	--
5-3	Ditch: 4-ft-wide concrete v-ditch; non-RPW with no significant nexus; unvegetated; dry during survey (26 April 2010); drains residential and roadway runoff to street gutter that drains to Los Cerritos Channel (an RPW) (Photo 5-3).	none	608	--	--	--	--
5-4	Ditch: 1-ft-wide concrete v-channel; non-RPW with no significant nexus; unvegetated; dry during survey (27 April 2010); drains commercial and residential runoff to Los Cerritos Channel (an RPW) (Photo 5-4).	none	565	--	--	--	--
5-5	Ditch: 2-ft-wide concrete v-channel; non-RPW with no significant nexus; unvegetated; dry during survey (27 April 2010); drains roadway and landscape runoff to street gutter and Los Cerritos Channel (an RPW) (Photo 5-5).	none	263	--	--	--	--
6-1	Ditch: 2-ft-wide concrete v-ditch; non-RPW with no significant nexus; unvegetated; dry during survey (27 April 2010); drains roadway and landscape runoff to street gutter that drains to Los Cerritos Channel (an RPW) (Photo 6-1).	none	1113	--	--	--	--

TABLE 3-2. SUMMARY OF POTENTIAL JURISDICTIONAL AREAS WITHIN THE BSA

Feature ID	Feature description	OHWM width (ft)	Length in BSA(ft)	Jurisdiction within BSA(acres)			
				USACE Other Waters	USACE Wetland	RWQCB	CDFG
6-2	Flood Control Facility: 16-ft-wide concrete channel; non-RPW with no significant nexus; unvegetated; dry during survey (27 April 2010); drains road runoff to San Gabriel River (an RPW) (Photo 6-2).	none	756	--	--	--	--
6-3	Flood Control Facility: 8-ft-wide concrete channel; non-RPW with no significant nexus; unvegetated; dry during survey (26 April 2010); drains road runoff to Los Alamitos Channel and San Gabriel River (a TNW) (no photo).	none	417	--	--	--	--
6-4	Ditch: 8-ft-wide concrete v-channel; non-RPW with no significant nexus; unvegetated; drains irrigation and road runoff to Copa De Oro Channel, Los Alamitos Channel and the San Gabriel River (an RPW) (no photo).	none	3,858	--	--	--	--
7-1	Ditch: 8-ft-wide concreted v-ditch; non-RPW with no significant nexus; unvegetated; dry during survey (28 April 2010); drains road runoff to Los Alamitos Channel and the San Gabriel River (an RPW) (Photo 7-1).	none	1,127	--	--	--	--
7-2*	Flood Control Facility: Copa De Oro Channel; 12-ft-wide concrete (east of I-405) and 40-ft-wide earthen (west of I-405); unnamed blue line; RPW; drains surface water and irrigation runoff to Los Alamitos Channel and San Gabriel River (an RPW) (Photos 7-2a and 7-2b).	3-25	2,233	1.02	--	1.02	1.02
7-3	Ditch: 4-ft-wide concrete v-ditch; non-RPW with no significant nexus; unvegetated; dry during survey (27 April 2010); drains landscape runoff to Copa De Oro Channel (Photo 7-3).	none	374	--	--	--	--
7-4	Ditch: 2-ft-wide concrete v-ditch; non-RPW with no significant nexus; unvegetated; drains surface and irrigation runoff to Los Alamitos Channel and San Gabriel River (an RPW) (no photo).	none	5,210	--	--	--	--
7-5	Ditch: 6-ft-wide concrete v-ditch; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff to Los Alamitos Channel and the San Gabriel River (an RPW) (Photo 7-5).	none	1,683	--	--	--	--
7-6	Ditch: 2-ft-wide concrete v-ditch; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff to Los Alamitos Channel and the San Gabriel River (an RPW) (no photo).	none	1,512	--	--	--	--
7-7*	Flood Control Facility: Seal Beach Boulevard Channel; 12-ft-wide concrete channel; unnamed blue line; RPW; unvegetated; drains surface water and irrigation runoff to Copa De Oro Channel, Los Alamitos Channel, and the San Gabriel River (an RPW) (Photo 7-7).	none	577	--	--	--	--
8-1	Ditch: 8-ft-wide concrete v-ditch; non-RPW with no significant nexus; unvegetated; drains surface and irrigation runoff to street gutter, Los Alamitos Channel, and the San Gabriel River (an RPW) (Photo 8-1).	none	466	--	--	--	--

TABLE 3-2. SUMMARY OF POTENTIAL JURISDICTIONAL AREAS WITHIN THE BSA

Feature ID	Feature description	OHWM width (ft)	Length in BSA(ft)	Jurisdiction within BSA(acres)			
				USACE Other Waters	USACE Wetland	RWQCB	CDFG
8-2[1]	Flood Control Facility: 7-ft-wide concrete channel; non-RPW with significant nexus; unvegetated; drains irrigation and surface runoff to Los Alamitos Channel and San Gabriel River (an RPW). (Photo 8-2).	2	9306	0.43	-	0.43	0.43
8-3	Flood Control Facility: 6-ft-wide concrete channel; non-RPW with significant nexus; unvegetated; drains irrigation and surface runoff underground through culvert to Los Alamitos Channel and the San Gabriel River (an RPW).	none	1,092	--	--	--	--
9-1	Flood Control Facility and Detention basin: 6-ft-wide concrete v-channel; non-RPW with no significant nexus; upland vegetated detention basin; drains road and irrigation runoff to Los Alamitos Channel and the San Gabriel River (an RPW) (Photo 9-1).	none	1,366	--	--	--	--
9-2	Flood Control Facility: 2-ft-wide concrete box channel; non-RPW with no significant nexus; unvegetated; drains irrigation and road runoff underground through culvert to Los Alamitos Channel and the San Gabriel River (an RPW) (no photo).	none	6,463	--	--	--	--
Anaheim Bay-Huntington Harbour Watershed							
10-1*	Flood Control Facility: Bolsa Chica Channel; 38-ft-wide; blue line; RPW; concrete/earthen/rock riprap south of I-405; drains to tidally influenced portion of Bolsa Chica Channel (an RPW) (Photo 10-1).	38	583	0.50	--	0.50	0.50
10-2[2]	Flood Control Facility: 12-ft-wide concrete channel; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff to Bolsa Chica Channel (an RPW) (no photo).	none	1,706	--	--	--	--
10-3	Flood Control Facility: 15-ft-wide concrete channel; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff to Bolsa Chica Channel (an RPW) (Photo 10-3).	none	590	--	--	--	--
10-4	Ditch: 8-ft-wide concrete v-ditch; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff to Bolsa Chica Channel (an RPW) (no photo).	None	444	--	--	--	--
10-5	Flood Control Facility: 27-ft-wide concrete channel; unvegetated; drains irrigation and surface runoff to Bolsa Chica Channel (an RPW) (Photo 10-5).	none	1,102	--	--	--	--
11-1*	Flood Control Facility: 22-ft-wide concrete channel; 1-inch standing water during survey (28 April 2010); unvegetated; drains roadside and landscape runoff to Bolsa Chica Channel (an RPW) (Photo 11-1).	none	2,781	--	--	--	--
11-2	Flood Control Facility: 12-ft-wide concrete channel; non-RPW with no significant nexus; unvegetated; dry during survey (28 April 2010); drains landscape and road runoff to Bolsa Chica Channel (an RPW) (Photo 11-2).	none	5,633	--	--	--	--
11-3	Flood Control Facility: 8-ft-wide concrete channel; non-RPW with no significant nexus; drains road runoff to Feature 11-1 and Bolsa Chica Channel (an RPW) (Photo 11-3).	none	30	--	--	--	--

TABLE 3-2. SUMMARY OF POTENTIAL JURISDICTIONAL AREAS WITHIN THE BSA

Feature ID	Feature description	OHWM width (ft)	Length in BSA(ft)	Jurisdiction within BSA(acres)			
				USACE Other Waters	USACE Wetland	RWQCB	CDFG
11-4	Flood Control Facility: 12-ft-wide concrete v-channel; non-RPW with no significant nexus; unvegetated; dry during survey (28 April 2010); drains landscape and road runoff to Bolsa Chica Channel (an RPW) (Photo 11-4).	none	1,382	--	--	--	--
11-5	Flood Control Facility: 7-ft-wide concrete channel; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff to Bolsa Chica Channel (an RPW) (no photo).	none	574	--	--	--	--
11-6	Flood Control Facility: 15-ft-wide concrete channel; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff to Bolsa Chica Channel (an RPW) (no photo).	none	1,013	--	--	--	--
11-7	Flood Control Facility: 7-ft-wide concrete channel; non-RPW with no significant nexus; unvegetated; drains irrigation and commercial surface runoff to Bolsa Chica Channel (an RPW) (Photo 11-7).	none	5,141	--	--	--	--
12-1	Ditch: 2-ft-wide concrete v-ditch; non-RPW with no significant nexus; unvegetated; dry during survey (26 April 2010); drains irrigation and road runoff to Anaheim Barber City Channel and Bolsa Chica Channel (an RPW) (Photo 12-1).	none	6,005	--	--	--	--
14-1	Ditch: 4-ft-wide concrete v-ditch; no OHWM; non-RPW with no significant nexus; dry during survey (26 April 2010); unvegetated; drains irrigation and road runoff to Anaheim Barber City Channel (Photo 14-1).	none	132	--	--	--	--
14-2	Flood Control Facility: 6-ft-wide concrete channel; non-RPW with no significant nexus; unvegetated; dry during survey (26 April 2010); drains landscape, commercial, and road runoff underground to Anaheim Barber City Channel and Bolsa Chica Channel (an RPW) (Photo 14-2).	none	1,484	--	--	--	--
16-1	Flood Control Facility: 16-ft-wide concrete channel; non-RPW with significant nexus; unvegetated; drains irrigation and residential surface runoff to Anaheim Barber City Channel and Bolsa Chica Channel (an RPW) (no photo).	2	242	0.01	--	0.01	0.01
16-2*	Flood Control Facility: Anaheim Barber City Channel; 40-ft-wide concrete box channel; RPW; blue line; unvegetated; drains surface runoff to Bolsa Chica Channel (an RPW) (Photo 16-2).	40	483	0.47	--	0.47	0.47
16-3*	Flood Control Facility: Westminster Avenue Channel; 34-ft-wide concrete channel; RPW; blue line; unvegetated; drains irrigation and surface runoff to Anaheim Barber City Channel and Bolsa Chica Channel (an RPW) (Photo 16-3).	5	1,218	0.14	--	0.14	0.14
16-4	Flood Control Facility: 15-ft-wide concrete channel; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff to Westminster Avenue Channel, Anaheim Barber City Channel and Bolsa Chica Channel (an RPW) (no photo).	none	1,920	--	--	--	--

TABLE 3-2. SUMMARY OF POTENTIAL JURISDICTIONAL AREAS WITHIN THE BSA

Feature ID	Feature description	OHWM width (ft)	Length in BSA(ft)	Jurisdiction within BSA(acres)			
				USACE Other Waters	USACE Wetland	RWQCB	CDFG
16-5	Flood Control Facility: 6-ft-wide concrete channel; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff underground through culvert to Anaheim Barber City Channel and Bolsa Chica Channel (an RPW) (Photo 16-5).	none	644	--	--	--	--
16-6	Ditch: 2-ft-wide concrete v-ditch; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff underground through culvert to Anaheim Barber City Channel and Bolsa Chica Channel (an RPW) (Photo 16-6).	none	3,084	--	--	--	--
17-1	Ditch: 2-ft-wide concrete v-ditch; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff to Anaheim Barber City Channel and Bolsa Chica Channel (an RPW) (Photo 17-1).	none	429	--	--	--	--
17-2	Flood Control Facility: 4-ft-wide concrete v-channel; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff to street gutter (Photo 17-2).	none	1,704	--	--	--	--
17-3	Ditch: 4-ft-wide concrete v-ditch; no OHWM; non-RPW with no significant nexus; unvegetated; drains surface runoff underground through culvert to Bolsa Chica Channel (an RPW) (Photo 17-3).	none	1,313	--	--	--	--
17-4	Ditch: 4-ft-wide earthen ditch; no OHWM; non-RPW with no significant nexus; upland vegetated; drains surface runoff to Bolsa Chica Channel (an RPW) (Photo 17-4).	none	451	--	--	--	--
17-5	Ditch: 4-ft-wide concrete v-ditch; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff to Bolsa Chica Channel (an RPW) (Photo 17-5).	none	1,004	--	--	--	--
18-1	Ditch: 4-ft-wide concrete and earthen v-channel; non-RPW with no significant nexus; unvegetated; drains surface runoff underground through culvert to Westminster Channel (an RPW) (Photo 18-1).	none	2,547	--	--	--	--
18-2	Ditch: 4-ft-wide concrete v-ditch; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff underground through culvert to Westminster Channel (an RPW) (Photo 18-2).	none	2,458	--	--	--	--
18-3	Flood Control Facility: 4-ft-wide concrete channel; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff to Westminster Channel (an RPW) (Photo 18-3).	none	810	--	--	--	--
18-4*	Flood Control Facility: Westminster Channel; concrete box channel; blue line; RPW; unvegetated; drains surface runoff to tidal portions of the channel (a TNW) (Photo 18-4).	30	658	0.50	--	0.50	0.50
18-5	Flood Control Facility: 12-ft-wide concrete channel; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff underground through culvert to Westminster Channel (an RPW) (Photo 18-5).	none	1,052	--	--	--	--

TABLE 3-2. SUMMARY OF POTENTIAL JURISDICTIONAL AREAS WITHIN THE BSA

Feature ID	Feature description	OHWM width (ft)	Length in BSA(ft)	Jurisdiction within BSA(acres)			
				USACE Other Waters	USACE Wetland	RWQCB	CDFG
18-6	Ditch: 1-ft-wide concrete ditch; no OHWM; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff underground to Westminster Channel (an RPW) (Photo 18-6).	none	564	--	--	--	--
18-7	Ditch: 3-ft-wide concrete v-ditch; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff underground through culvert to Westminster Channel (an RPW) (no photo).	none	1,159	--	--	--	--
18-8	Flood Control Facility: 4-ft-wide concrete channel; non-RPW with no significant nexus; unvegetated; drains irrigation runoff underground through culvert to Westminster Channel (an RPW) (Photo 18-8).	none	2,629	--	--	--	--
19-1	Ditch: 4-ft-wide concrete v-ditch; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff underground through culvert to Westminster Channel (an RPW) (Photo 19-1).	none	3,313	--	--	--	--
19-2	Ditch: 5-ft-wide concrete v-ditch; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff underground through culvert to Westminster Channel (an RPW) (Photo 19-2).	none	3,108	--	--	--	--
20-1*	Flood Control Facility: 20-ft-wide concrete channel; unvegetated; drains irrigation and surface runoff to East Garden Grove Wintersburg Channel (an RPW) (Photo 20-1).	none	3,039	--	--	--	--
21-1*	Flood Control Facility: 35-ft-wide rock riprap and concrete channel; 6 inches flowing water during survey (4 August 2009); no significant nexus; low-density hydrophytic vegetation between riprap; drains residential and road runoff to East Garden Grove Wintersburg Channel (an RPW) (Photos 21-1a and 21-1b).	none	1,400	--	--	--	--
21-2*	Flood Control Facility: East Garden Grove Wintersburg Channel; 26- to 65-ft-wide concrete channel north of I-405; 52-ft-wide concrete channel south of I-405; blue line; RPW; 2 inches flowing water present during survey (4 August 2009); unvegetated within study area; drains surface runoff to tidally influenced portion of the Channel (Photo 21-2).	26-65	267	0.14	--	0.14	0.14
21-3	Flood Control Facility: 12-ft-wide concrete channel; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff to East Garden Grove Wintersburg Channel (an RPW) (Photo 21-3).	none	1,994	--	--	--	--
21-4	Flood Control Facility: 10-ft-wide concrete v-channel; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff to East Garden Grove Wintersburg Channel (an RPW) .	none	1,816	--	--	--	--
21-5	Flood Control Facility: Heil Avenue Storm Channel; 18-ft wide concrete box channel; non-RPW with no significant nexus; unvegetated; drains surface runoff to East Garden Grove Wintersburg Channel (an RPW) (Photo 21-5).	none	590	--	--	--	--

TABLE 3-2. SUMMARY OF POTENTIAL JURISDICTIONAL AREAS WITHIN THE BSA

Feature ID	Feature description	OHWM width (ft)	Length in BSA(ft)	Jurisdiction within BSA(acres)			
				USACE Other Waters	USACE Wetland	RWQCB	CDFG
22-1	Ditch: 4-ft-wide concrete v-ditch; non-RPW with no significant nexus; unvegetated; drains irrigation and road runoff to East Garden Grove Wintersburg Channel (an RPW) (Photo 22-1).	none	492	--	--	--	--
22-2	Flood Control Facility: 8-ft-wide concrete channel; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff to East Garden Grove Wintersburg Channel (an RPW) (Photo 22-2).	none	1,953	--	--	--	--
22-3	Flood Control Facility: 4-ft-wide concrete channel; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff to Ocean View Channel and East Garden Grove Wintersburg Channel (an RPW) (Photo 22-3).	none	1,809	--	--	--	--
22-4	Ditch: 5-ft-wide concrete v-ditch; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff underground to East Garden Grove Wintersburg Channel (an RPW) (no photo).	none	573	--	--	--	--
22-5	Ditch: 8-ft-wide concrete v-ditch; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff to Ocean View Channel and East Garden Grove Wintersburg Channel (an RPW) (Photo 22-5).	none	749	--	--	--	--
22-7[2]	Flood Control Facility: 12-ft-wide concrete box channel; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff to Ocean View Channel and East Garden Grove Wintersburg Channel (an RPW) (no photo).	none	1,312	--	--	--	--
23-1*	Flood Control Facility: Ocean View Channel; 25-ft-wide concrete box channel; blue line; RPW; unvegetated; drains irrigation and surface runoff underground to East Garden Grove Wintersburg Channel (an RPW) (Photo 23-1).	20	466	0.86	--	0.86	0.86
Santa Ana River Watershed							
22-6[1]	Flood Control Facility: 5-ft-wide concrete channel; non-RPW with no significant nexus; unvegetated; drains irrigation runoff to Ocean View Channel and East Garden Grove Wintersburg Channel (an RPW) (Photo 22-6).	none	729	--	--	--	--
22-8	Flood Control Facility: 5-ft-wide concrete channel; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff underground to Ocean View Channel and East Garden Grove Wintersburg Channel (an RPW) (no photo).	none	1,174	--	--	--	--
23-2	Flood Control Facility: 8-ft-wide concrete channel; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff to Talbert Channel (an RPW) (Photo 23-2).	none	916	--	--	--	--
23-3	Flood Control Facility: 4-ft-wide concrete v-channel; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff to Talbert Channel (an RPW) (Photo 23-3).	none	540	--	--	--	--

TABLE 3-2. SUMMARY OF POTENTIAL JURISDICTIONAL AREAS WITHIN THE BSA

Feature ID	Feature description	OHWM width (ft)	Length in BSA(ft)	Jurisdiction within BSA(acres)			
				USACE Other Waters	USACE Wetland	RWQCB	CDFG
23-4	Flood Control Facility: 12-ft-wide concrete channel; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff to East Garden Grove Wintersburg Channel (an RPW) (no photo).	none	354	--	--	--	--
23-5	Flood Control Facility: 5-ft-wide concrete channel; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff to East Garden Grove Wintersburg Channel (an RPW) (Photo 23-5).	none	1,309	--	--	--	--
23-6	Flood Control Facility: 12-ft-wide concrete channel; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff to Talbert Channel (an RPW) (Photo 23-6).	none	1,424	--	--	--	--
23-7	Flood Control Facility: 5-ft-wide concrete v-channel; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff to Talbert Channel (an RPW) (no photo).	none	1,348	--	--	--	--
24-1	Flood Control Facility: 12-ft-wide concrete channel; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff to Talbert Channel (an RPW) (Photo 24-1).	none	2,195	--	--	--	--
24-2	Flood Control Facility: 12-ft-wide concrete channel; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff to Talbert Channel (an RPW) (Photo 24-2).	none	1,007	--	--	--	--
24-3	Flood Control Facility: 15-ft-wide concrete channel; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff to Fountain Valley Channel (an RPW) (Photo 24-3).	none	2,457	--	--	--	--
24-4	Flood Control Facility: 18-ft-wide concrete channel; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff to Fountain Valley Channel (an RPW) (Photo 24-4).	none	2,083	--	--	--	--
25-1	Flood Control Facility: 6-ft-wide concrete channel; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff to Fountain Valley Channel (an RPW) (no photo).	2	814	0.04	--	0.04	0.04
25-2	Flood Control Facility: 4-ft-wide concrete channel; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff to Fountain Valley Channel (an RPW) (Photo 25-2).	none	1,449	--	--	--	--
25-3	Flood Control Facility: 5-ft-wide concrete channel; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff to Fountain Valley Channel (an RPW) (no photo).	none	2,186	--	--	--	--
25-4*	Flood Control Facility: Fountain Valley Channel; blue line; 40-ft-wide rock riprap channel; RPW; negligible hydrophytic vegetation; drains to the Huntington Beach Channel (a TNW) (Photo 25-4).	9	357	0.19	--	0.19	0.21
25-5	Flood Control Facility: 6-ft-wide concrete channel; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff to tidal portions of Fountain Valley Channel (an RPW) (Photo 25-5).	none	2,579	--	--	--	--

TABLE 3-2. SUMMARY OF POTENTIAL JURISDICTIONAL AREAS WITHIN THE BSA

Feature ID	Feature description	OHWM width (ft)	Length in BSA(ft)	Jurisdiction within BSA(acres)			
				USACE Other Waters	USACE Wetland	RWQCB	CDFG
26-1*	Flood Control Facility: Santa Ana River; blue line; concrete box channel; RPW; unvegetated; drains to Pacific Ocean (a TNW) (Photo 26-1).	238	998	5.44	--	5.44	5.44
26-2	Ditch: 6-ft-wide concrete v-ditch; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff to the Santa Ana River (an RPW). (Photo 26-2).	2	816	--	--	--	--
27-1*	Flood Control Facility: Greenville Banning Channel; 73-ft-wide concrete/rock riprap channel northeast of I-405; blue line; RPW; unvegetated; 4 inches flowing water during survey (28 April 2010); drains surface runoff to the Santa Ana River (a TNW) (Photo 27-1).	30	677	0.52	--	0.52	0.52
27-2	Flood Control Facility: 8-ft-wide concrete channel; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff to Greenville Banning Channel (an RPW) (no photo).	none	537	--	--	--	--
28-1	Ditch: 4-ft-wide concrete v-ditch; non-RPW with no significant nexus; unvegetated; dry during survey (28 April 2010); drains irrigation and road runoff to street gutter (Photo 28-1).	none	1,204	--	--	--	--
28-2*	Flood Control Facility: Gisler Channel; 56-ft-wide; concrete upslope and earthen/rock riprap downslope; blue line; RPW; unvegetated; drains surface water runoff to Greenville Banning Channel (an RPW) (Photos 28-2a and 28-2b).	20	1237	0.61	--	0.61	0.61
29-1	Ditch: 4-ft-wide concrete v-ditch; non-RPW with no significant nexus; upland vegetation; drains road runoff to Greenville Banning Channel (an RPW) (Photo 29-1).	none	1,676	--	--	--	--
29-2	Flood Control Facility: 4-ft-wide concrete channel; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff drains surface water runoff to Newport Back Bay (a TNW) (no photo).	none	1,829	--	--	--	--
30-1	Flood Control Facility: 5-ft-wide concrete channel; non-RPW with no significant nexus; unvegetated; dry during survey (27 April 2010); drains road, landscape, and commercial surface runoff to Newport Back Bay (a TNW) (Photo 30-1).	none	1919	--	--	--	--
30-2	Ditch: 5-ft-wide concrete v-ditch; non-RPW with no significant nexus; unvegetated; dry during survey (27 April 2010); drains road and landscape runoff to Newport Back Bay (a TNW) (Photo 30-2).	none	1,548	--	--	--	--
31-1	Flood Control Facility: 4-ft-wide concrete channel; non-RPW with no significant nexus; unvegetated; dry during survey (27 April 2010); drains landscape and road runoff to Newport Back Bay (a TNW) (Photo 31-1).	none	1,858	--	--	--	--
Newport Bay Watershed							

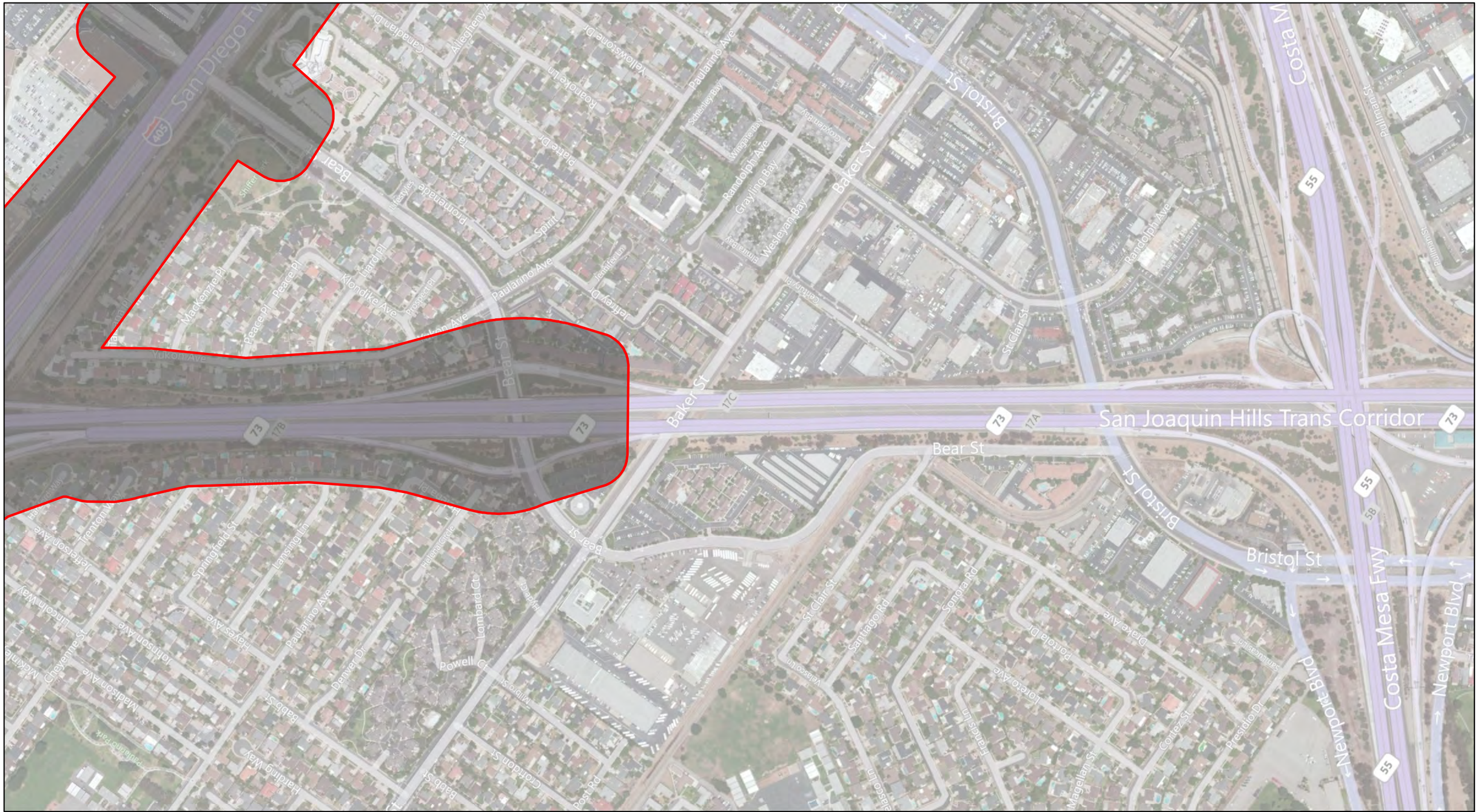
TABLE 3-2. SUMMARY OF POTENTIAL JURISDICTIONAL AREAS WITHIN THE BSA

Feature ID	Feature description	OHWM width (ft)	Length in BSA(ft)	Jurisdiction within BSA(acres)			
				USACE Other Waters	USACE Wetland	RWQCB	CDFG
31-2*	Flood Control Facility: Santa Ana Delhi Channel; 58-ft-wide concrete box channel north of I-405; 42-ft-wide south of I-405; blue line; RPW; unvegetated; 2 inches flowing water present during survey (27 April 2010); drains commercial surface, road, and landscape runoff to Newport Back Bay (a TNW) (Photos 31-2a and 31-2b).	42-58	394	0.41	--	0.41	0.41
31-3	Flood Control Facility: 4-ft-wide concrete channel; non-RPW with no significant nexus; unvegetated; drains landscape and road runoff to Newport Back Bay (a TNW) (Photo 31-3).	none	234	--	--	--	--
31-4	Flood Control Facility: 12-ft-wide concrete channel; non-RPW with no significant nexus; dry during survey (27 April 2010); unvegetated; drains residential and road runoff to Newport Back Bay (a TNW) (Photo 31-4).	none	2,673	--	--	--	--
Total				27.0	0.9	27.9	28.3

[1] Also in Anaheim Bay-Huntington Harbour Watershed
[2] Also in Santa Ana River Watershed

-- No jurisdiction
* Identified as an RPW in Appendix D

FIGURES 3-1 THROUGH 3-23 – VEGETATION COMMUNITIES ALTERNATIVE 1

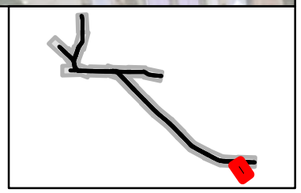


Biological Study Area
Alternative 1 Temporary Impact
Alternative 1 Permanent Impact
Agriculture
Drainage
Developed
Riparian

0 250 500 1,000 Feet

Vegetation Communities
Alternative 1
March 2012

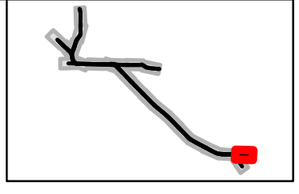
Figure 3-1



Biological Study Area
Alternative 1 Temporary Impact
Alternative 1 Permanent Impact
Agriculture
Drainage
Developed
Riparian

0 250 500 1,000 Feet

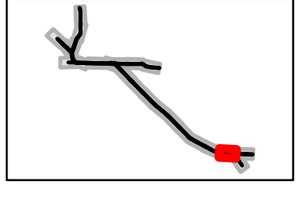
Vegetation Communities
Alternative 1
March 2012
Figure 3-2



Biological Study Area
Alternative 1 Temporary Impact
Alternative 1 Permanent Impact
Agriculture
Drainage
Developed
Riparian

0 250 500 1,000 Feet

Vegetation Communities
Alternative 1
March 2012
Figure 3-3



Biological Study Area
Alternative 1 Temporary Impact
Alternative 1 Permanent Impact
Agriculture
Drainage
Developed
Riparian

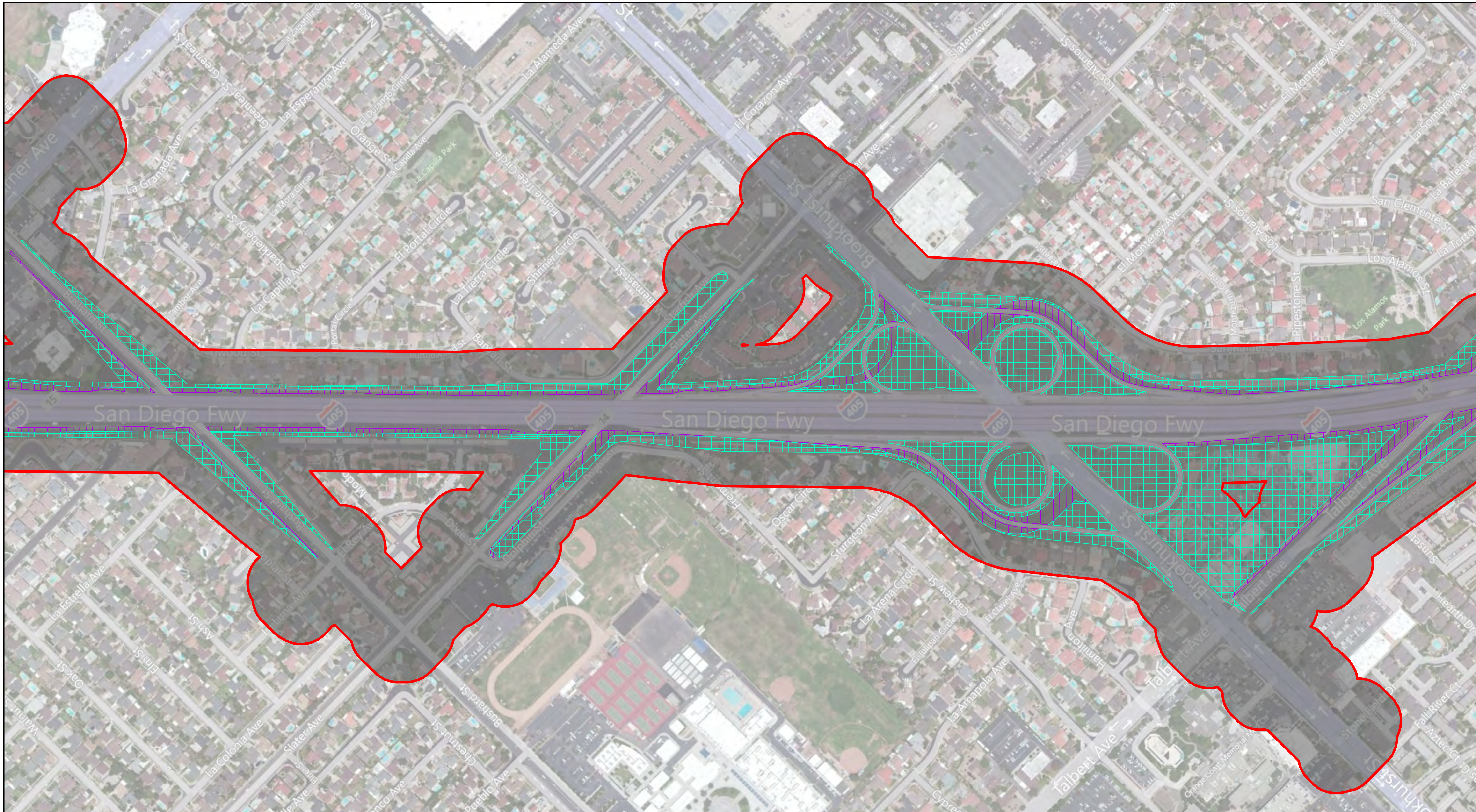
0 250 500 1,000 Feet

Vegetation Communities
Alternative 1
March 2012
Figure 3-4

Biological Study Area
Alternative 1 Temporary Impact
Alternative 1 Permanent Impact
Agriculture
Drainage
Developed
Riparian

0 250 500 1,000 Feet

Vegetation Communities
Alternative 1
March 2012
Figure 3-5



Biological Study Area

Alternative 1 Temporary Impact

Alternative 1 Permanent Impact

Agriculture

Drainage

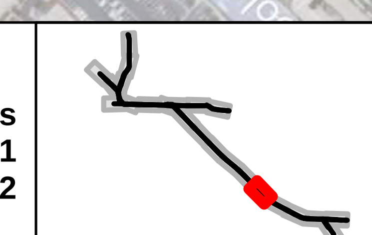
Developed

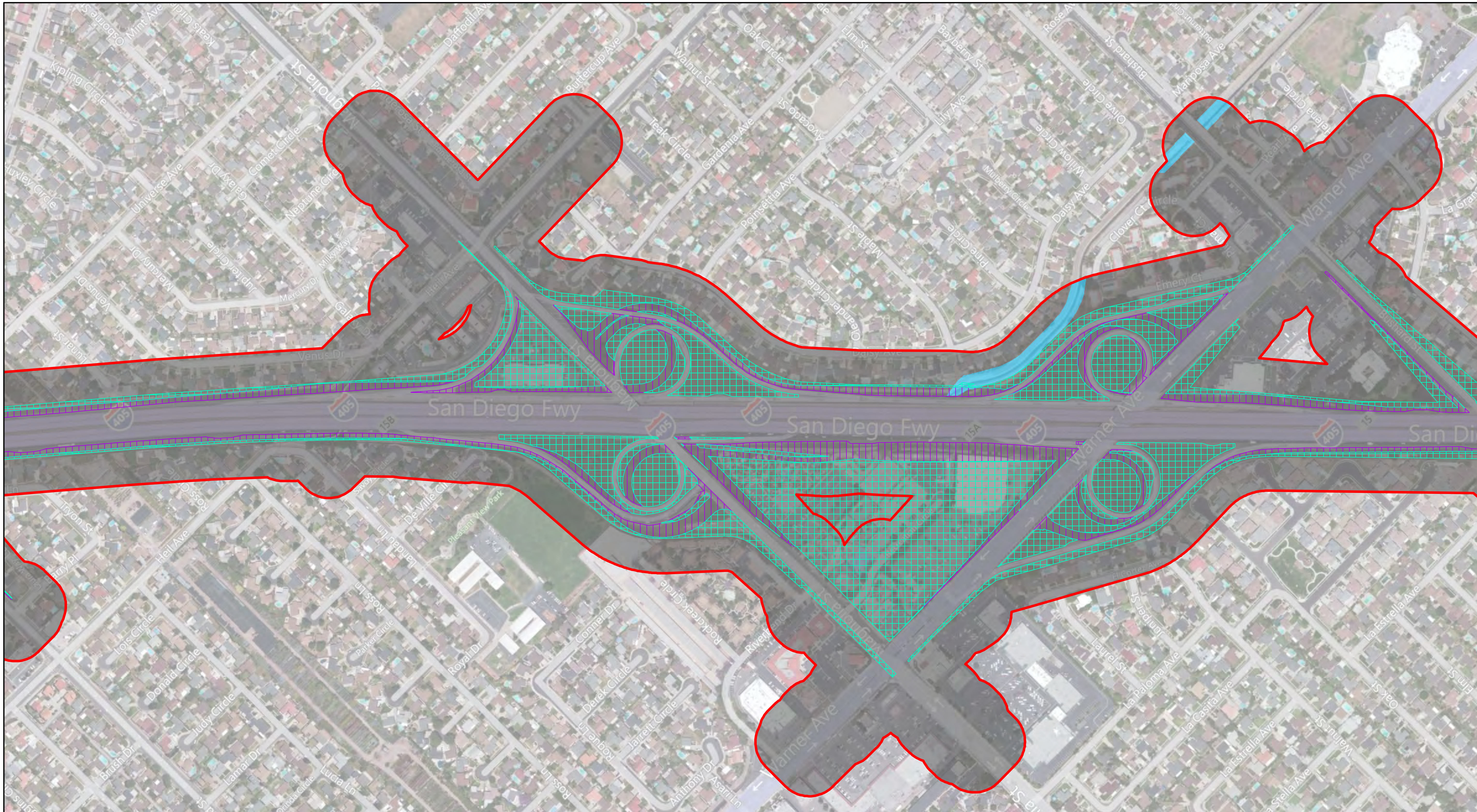
Riparian

0 250 500 1,000 Feet

Vegetation Communities
Alternative 1
March 2012

Figure 3-6





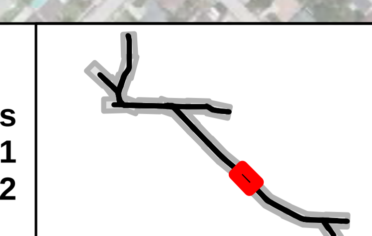
Biological Study Area
Alternative 1 Temporary Impact
Alternative 1 Permanent Impact
Agriculture
Drainage
Developed
Riparian

N

0 250 500 1,000
Feet

Vegetation Communities
Alternative 1
March 2012

Figure 3-7



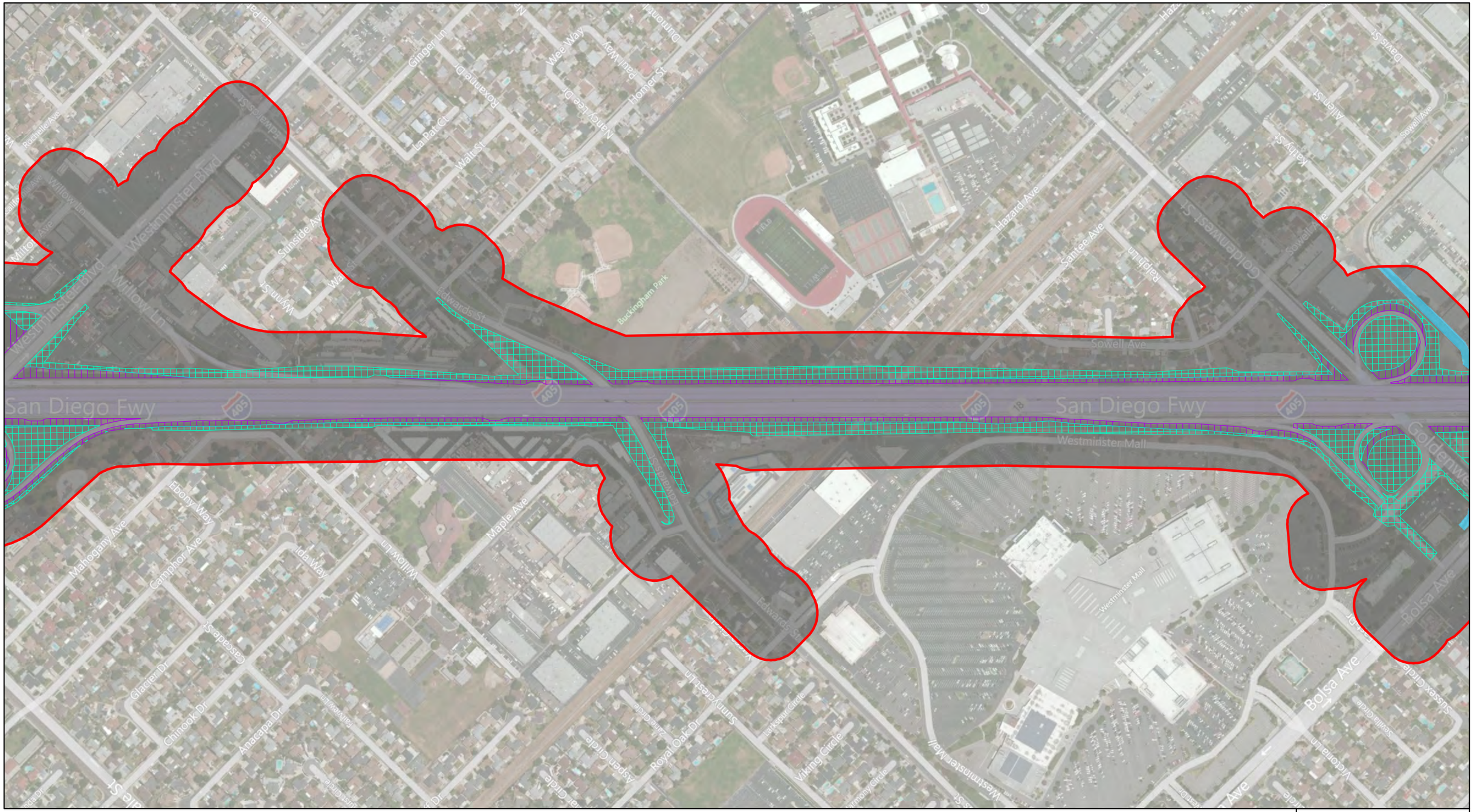
Biological Study Area
Alternative 1 Temporary Impact
Alternative 1 Permanent Impact
Agriculture
Drainage
Developed
Riparian

0 250 500 1,000 Feet

Vegetation Communities
Alternative 1
March 2012
Figure 3-8

Vegetation Communities
Alternative 1
March 2012

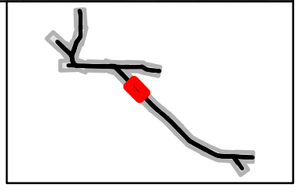
Figure 3-9

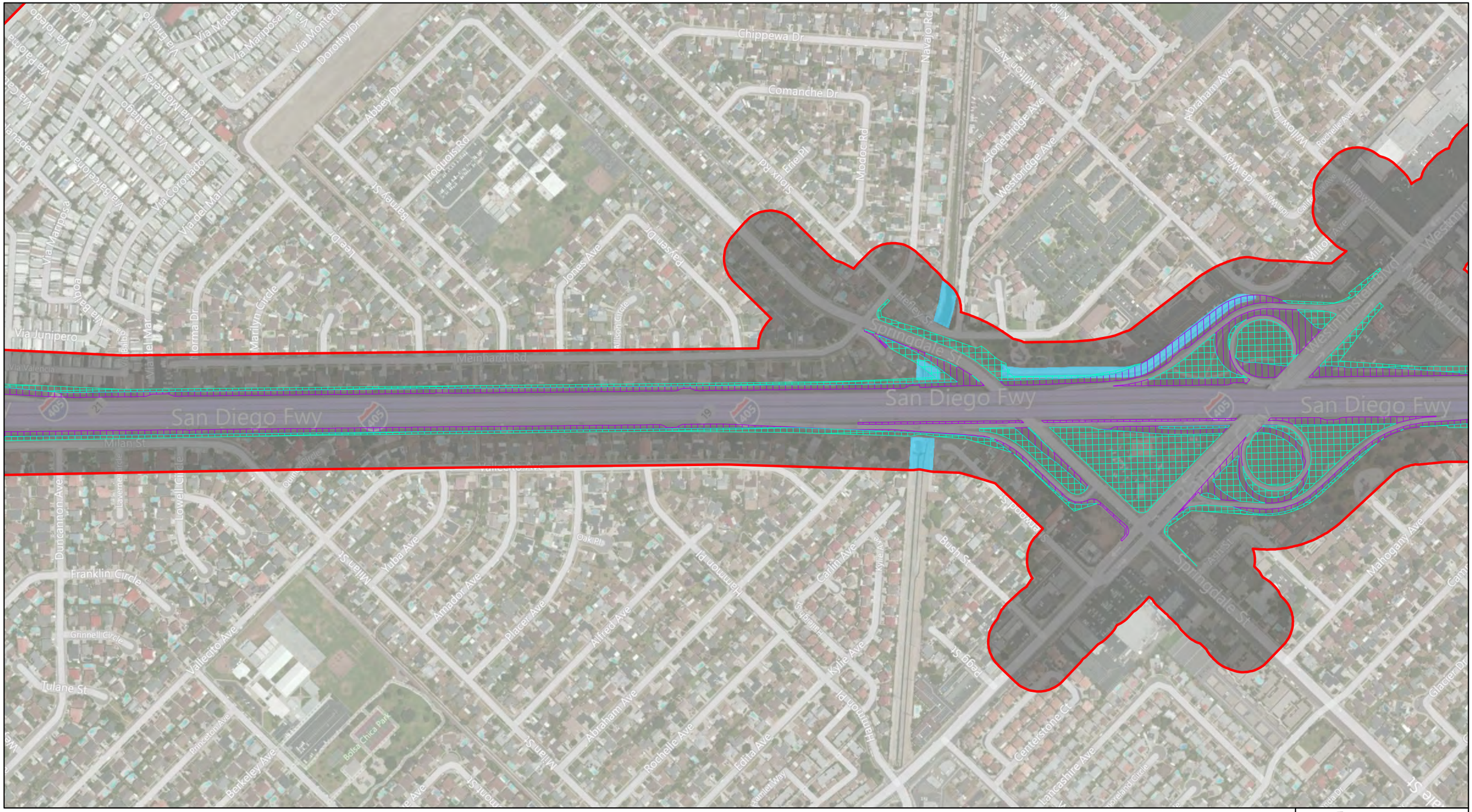


Biological Study Area
Alternative 1 Temporary Impact
Alternative 1 Permanent Impact
Agriculture
Drainage
Developed
Riparian

0 250 500 1,000 Feet

Vegetation Communities
Alternative 1
March 2012
Figure 3-10

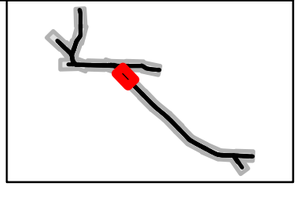




Biological Study Area
Alternative 1 Temporary Impact
Alternative 1 Permanent Impact
Agriculture
Drainage
Developed
Riparian

0 250 500 1,000 Feet

Vegetation Communities
Alternative 1
March 2012
Figure 3-11



Biological Study Area
Alternative 1 Temporary Impact
Alternative 1 Permanent Impact
Agriculture
Drainage
Developed
Riparian

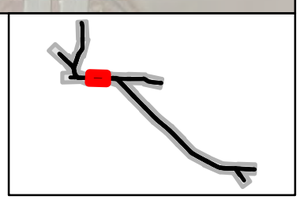
0 250 500 1,000 Feet

Vegetation Communities
Alternative 1
March 2012
Figure 3-12

Biological Study Area
Alternative 1 Temporary Impact
Alternative 1 Permanent Impact
Agriculture
Drainage
Developed
Riparian

0 250 500 1,000 Feet

Vegetation Communities
Alternative 1
March 2012
Figure 3-13



Biological Study Area
Alternative 1 Temporary Impact
Alternative 1 Permanent Impact
Agriculture
Drainage
Developed
Riparian

0 250 500 1,000 Feet

Vegetation Communities
Alternative 1
March 2012
Figure 3-14

Biological Study Area
Alternative 1 Temporary Impact
Alternative 1 Permanent Impact
Agriculture
Drainage
Developed
Riparian

0 250 500 1,000 Feet

Vegetation Communities
Alternative 1
March 2012
Figure 3-15

Biological Study Area
Alternative 1 Temporary Impact
Alternative 1 Permanent Impact
Agriculture
Drainage
Developed
Riparian

0 250 500 1,000 Feet

Vegetation Communities
Alternative 1
March 2012
Figure 3-16

Biological Study Area
Alternative 1 Temporary Impact
Alternative 1 Permanent Impact
Agriculture
Drainage
Developed
Riparian

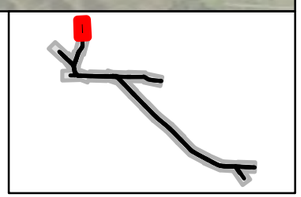
0 250 500 1,000 Feet

Vegetation Communities
Alternative 1
March 2012
Figure 3-17

Biological Study Area
Alternative 1 Temporary Impact
Alternative 1 Permanent Impact
Agriculture
Drainage
Developed
Riparian

0 250 500 1,000 Feet

Vegetation Communities
Alternative 1
March 2012
Figure 3-18



Biological Study Area
Alternative 1 Temporary Impact
Alternative 1 Permanent Impact
Agriculture
Drainage
Developed
Riparian

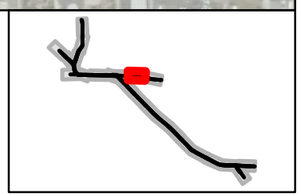
0 250 500 1,000 Feet

Vegetation Communities
Alternative 1
March 2012
Figure 3-19

Biological Study Area
Alternative 1 Temporary Impact
Alternative 1 Permanent Impact
Agriculture
Drainage
Developed
Riparian

0 250 500 1,000 Feet

Vegetation Communities
Alternative 1
March 2012
Figure 3-20



Biological Study Area
Alternative 1 Temporary Impact
Alternative 1 Permanent Impact
Agriculture
Drainage
Developed
Riparian

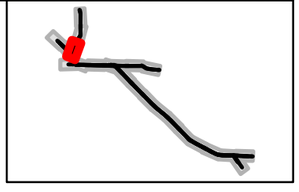
0 250 500 1,000 Feet

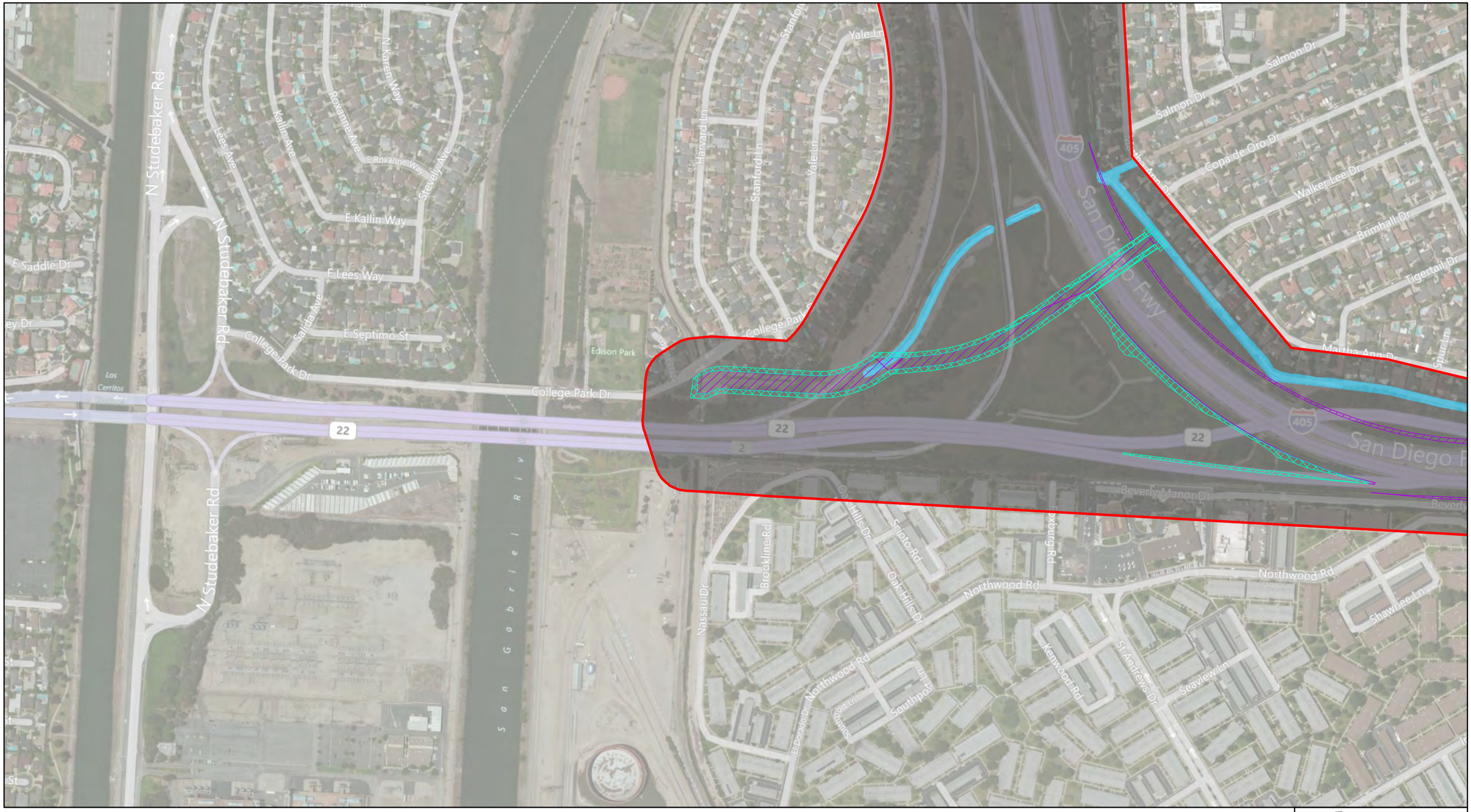
Vegetation Communities
Alternative 1
March 2012
Figure 3-21

Biological Study Area
Alternative 1 Temporary Impact
Alternative 1 Permanent Impact
Agriculture
Drainage
Developed
Riparian

0 250 500 1,000 Feet

Vegetation Communities
Alternative 1
March 2012
Figure 3-22

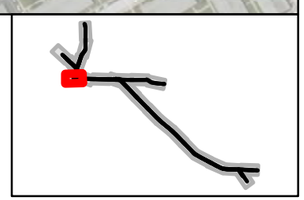




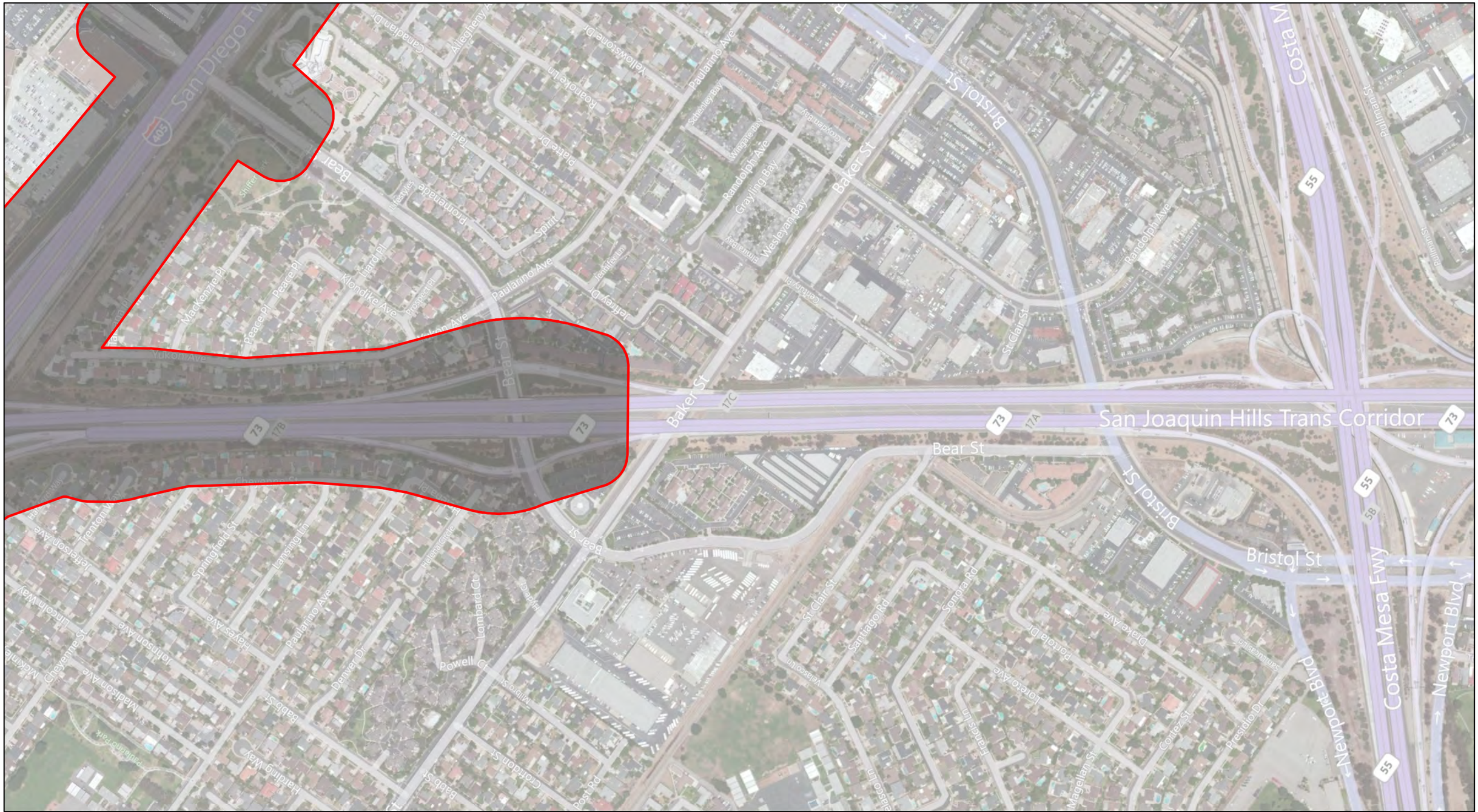
Biological Study Area
Alternative 1 Temporary Impact
Alternative 1 Permanent Impact
Agriculture
Drainage
Developed
Riparian

0 250 500 1,000 Feet

Vegetation Communities
Alternative 1
March 2012
Figure 3-23



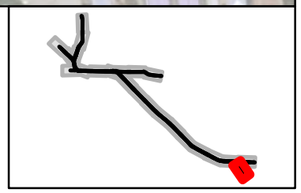
FIGURES 4-1 THROUGH 4-23 – VEGETATION COMMUNITIES ALTERNATIVE 2



Biological Study Area
Alternative 2 Temporary Impact
Alternative 2 Permanent Impact
Agriculture
Drainage
Developed
Riparian

0 250 500 1,000 Feet

Vegetation Communities
Alternative 2
March 2012
Figure 4-1



Biological Study Area
Alternative 2 Temporary Impact
Alternative 2 Permanent Impact
Agriculture
Drainage
Developed
Riparian

0 250 500 1,000 Feet

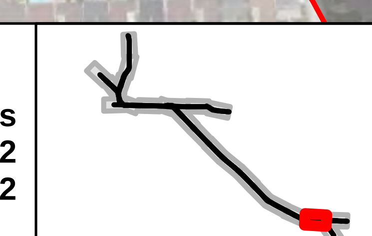
Vegetation Communities
Alternative 2
March 2012
Figure 4-2

Biological Study Area
Alternative 2 Temporary Impact
Alternative 2 Permanent Impact
Agriculture
Drainage
Developed
Riparian

0 250 500 1,000 Feet

Vegetation Communities
Alternative 2
March 2012

Figure 4-3



Biological Study Area
Alternative 2 Temporary Impact
Alternative 2 Permanent Impact
Agriculture
Drainage
Developed
Riparian

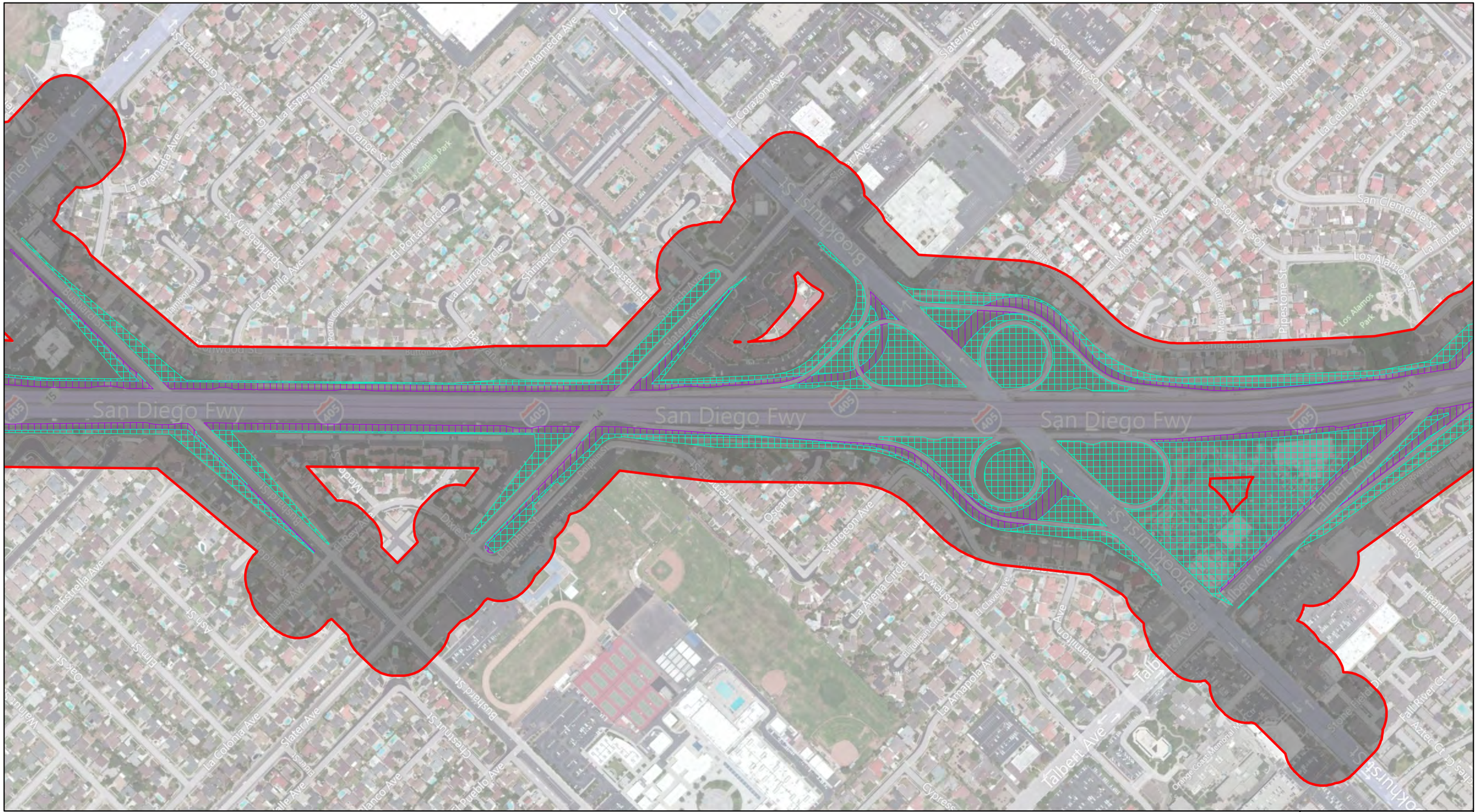
0 250 500 1,000 Feet

Vegetation Communities
Alternative 2
March 2012
Figure 4-4

Biological Study Area
Alternative 2 Temporary Impact
Alternative 2 Permanent Impact
Agriculture
Drainage
Developed
Riparian

0 250 500 1,000 Feet

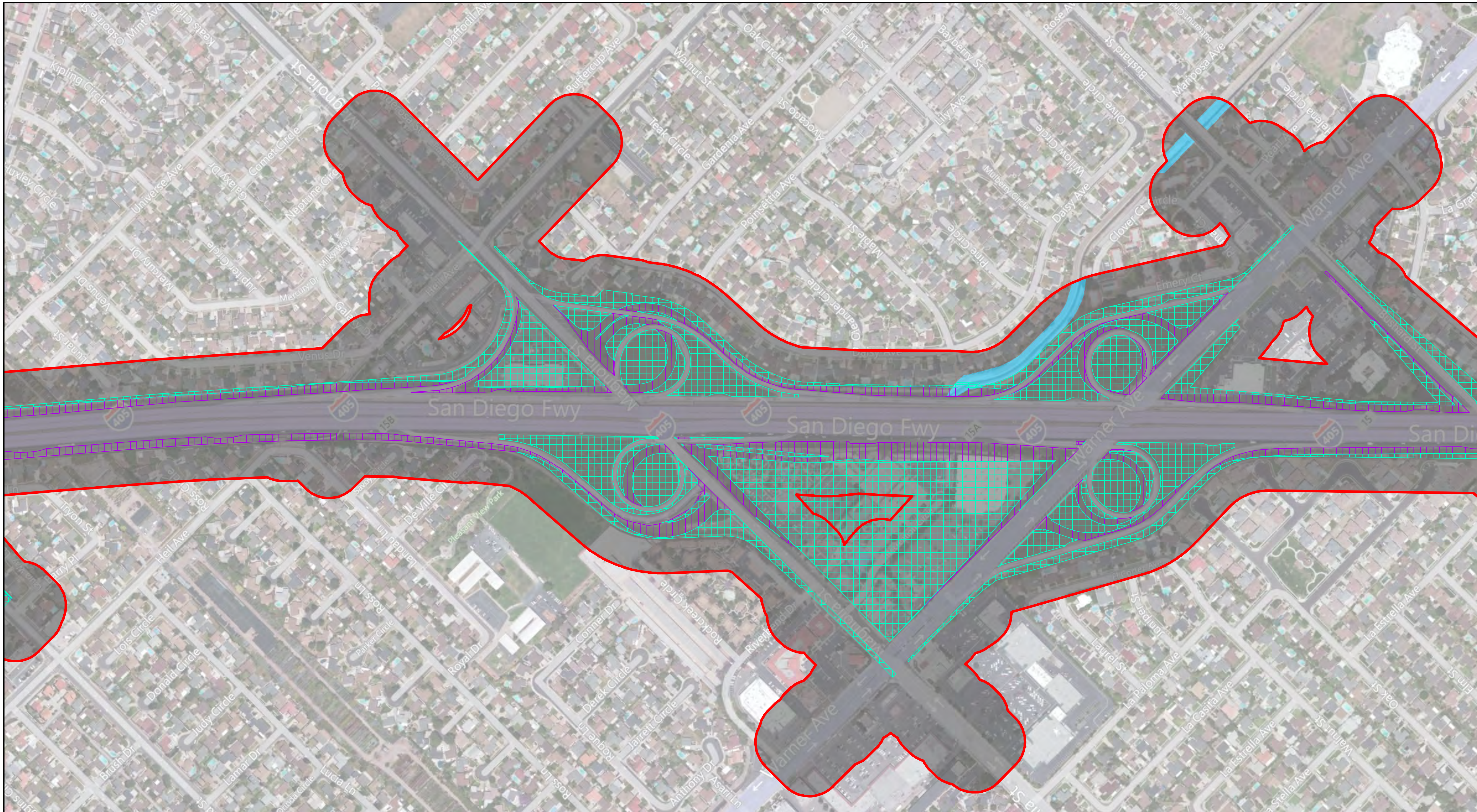
Vegetation Communities
Alternative 2
March 2012
Figure 4-5



Biological Study Area
Alternative 2 Temporary Impact
Alternative 2 Permanent Impact
Agriculture
Drainage
Developed
Riparian

0 250 500 1,000 Feet

Vegetation Communities
Alternative 2
March 2012
Figure 4-6

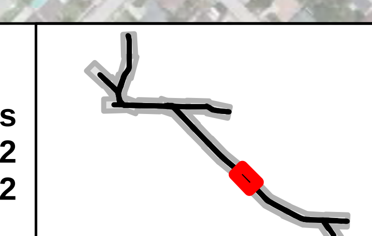


Biological Study Area
Alternative 2 Temporary Impact
Alternative 2 Permanent Impact
Agriculture
Drainage
Developed
Riparian

0 250 500 1,000 Feet

Vegetation Communities
Alternative 2
March 2012

Figure 4-7



Biological Study Area
Alternative 2 Temporary Impact
Alternative 2 Permanent Impact
Agriculture
Drainage
Developed
Riparian

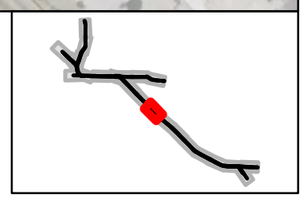
0 250 500 1,000 Feet

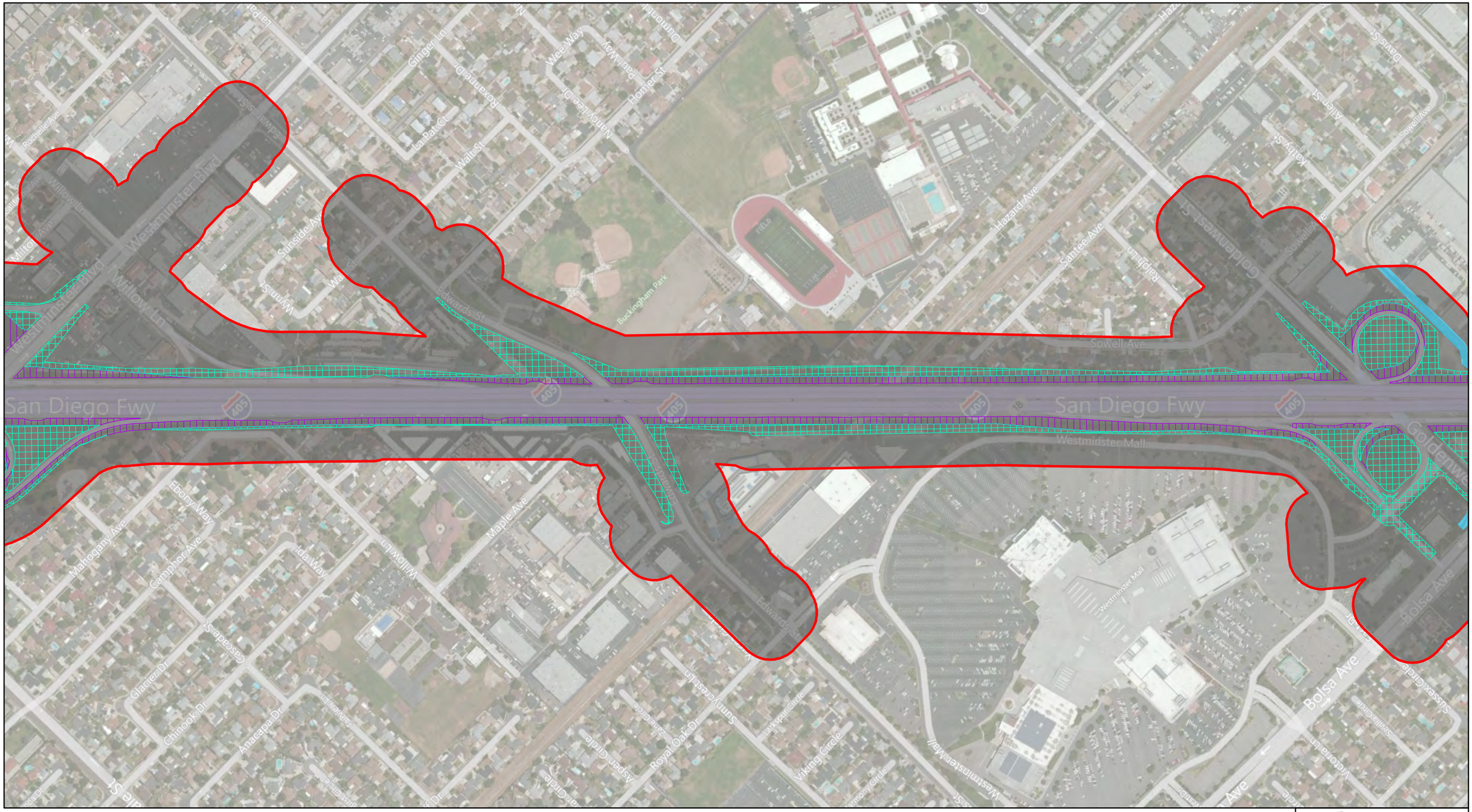
Vegetation Communities
Alternative 2
March 2012
Figure 4-8

Biological Study Area
Alternative 2 Temporary Impact
Alternative 2 Permanent Impact
Agriculture
Drainage
Developed
Riparian

0 250 500 1,000 Feet

Vegetation Communities
Alternative 2
March 2012
Figure 4-9

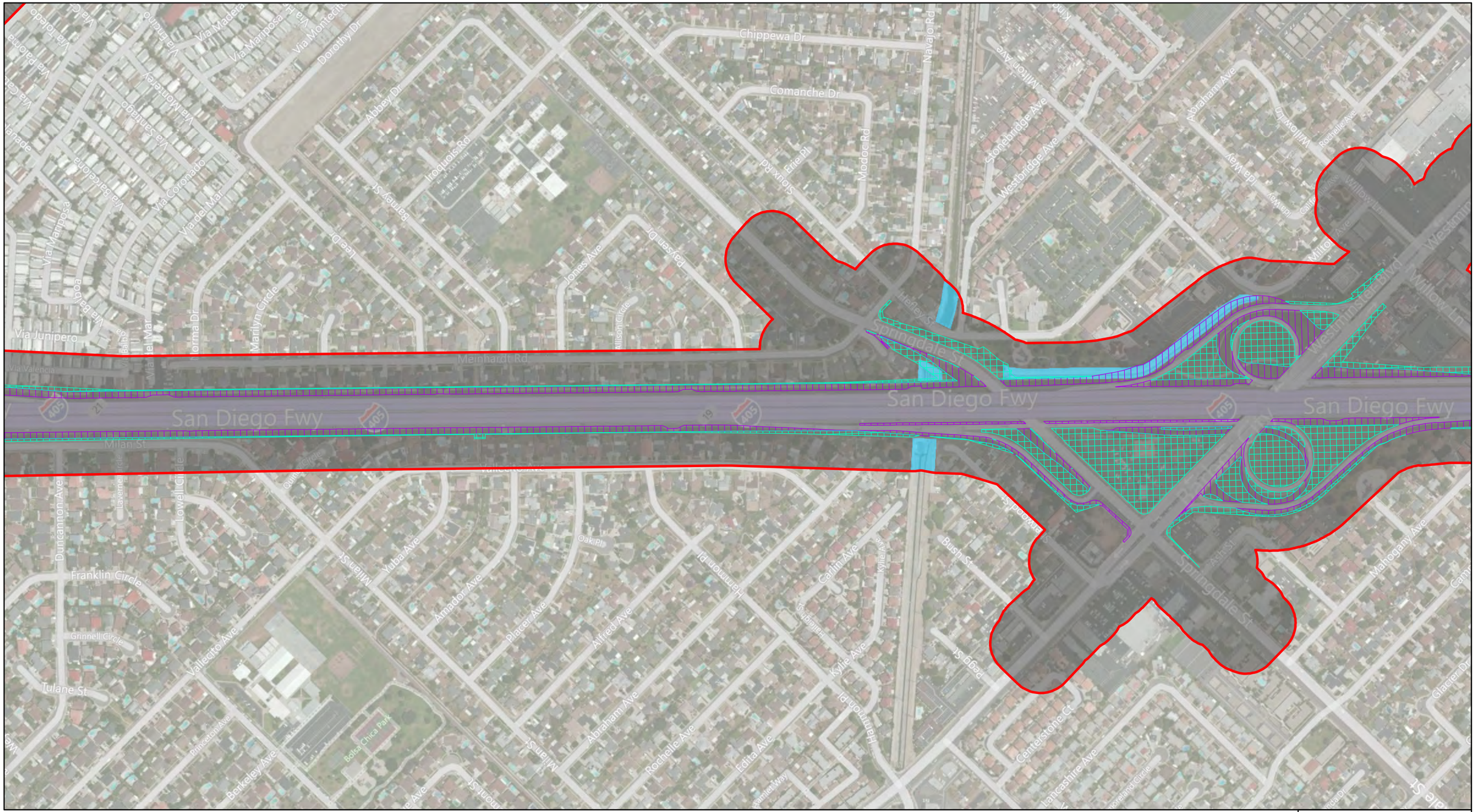




Biological Study Area
Alternative 2 Temporary Impact
Alternative 2 Permanent Impact
Agriculture
Drainage
Developed
Riparian

0 250 500 1,000 Feet

Vegetation Communities
Alternative 2
March 2012
Figure 4-10

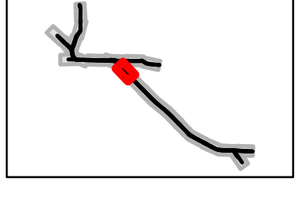


Biological Study Area
Alternative 2 Temporary Impact
Alternative 2 Permanent Impact
Agriculture
Drainage
Developed
Riparian

0 250 500 1,000 Feet

Vegetation Communities
Alternative 2
March 2012

Figure 4-11



Biological Study Area
Alternative 2 Temporary Impact
Alternative 2 Permanent Impact
Agriculture
Drainage
Developed
Riparian

0 250 500 1,000 Feet

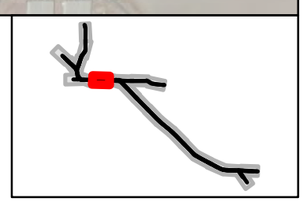
Vegetation Communities
Alternative 2
March 2012
Figure 4-12

Biological Study Area
Alternative 2 Temporary Impact
Alternative 2 Permanent Impact
Agriculture
Drainage
Developed
Riparian

0 250 500 1,000 Feet

Vegetation Communities
Alternative 2
March 2012

Figure 4-13



Biological Study Area
Alternative 2 Temporary Impact
Alternative 2 Permanent Impact
Agriculture
Drainage
Developed
Riparian

0 250 500 1,000 Feet

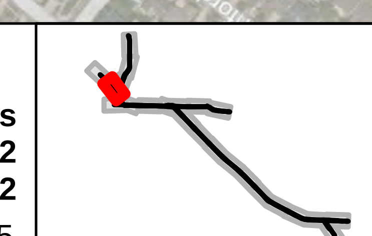
Vegetation Communities
Alternative 2
March 2012
Figure 4-14

Biological Study Area
Alternative 2 Temporary Impact
Alternative 2 Permanent Impact
Agriculture
Drainage
Developed
Riparian

0 250 500 1,000 Feet

Vegetation Communities
Alternative 2
March 2012

Figure 4-15



Biological Study Area
Alternative 2 Temporary Impact
Alternative 2 Permanent Impact
Agriculture
Drainage
Developed
Riparian

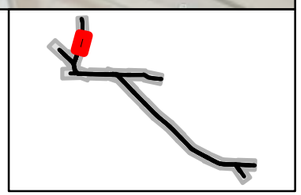
0 250 500 1,000 Feet

Vegetation Communities
Alternative 2
March 2012
Figure 4-16

Biological Study Area
Alternative 2 Temporary Impact
Alternative 2 Permanent Impact
Agriculture
Drainage
Developed
Riparian

0 250 500 1,000 Feet

Vegetation Communities
Alternative 2
March 2012
Figure 4-17



Vegetation Communities
Alternative 2
March 2012
Figure 4-18

Biological Study Area
Alternative 2 Temporary Impact
Alternative 2 Permanent Impact
Agriculture
Drainage
Developed
Riparian

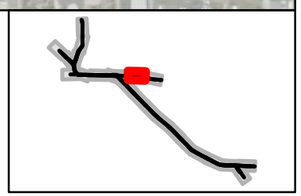
0 250 500 1,000 Feet

Vegetation Communities
Alternative 2
March 2012
Figure 4-19

Biological Study Area
Alternative 2 Temporary Impact
Alternative 2 Permanent Impact
Agriculture
Drainage
Developed
Riparian

0 250 500 1,000 Feet

Vegetation Communities
Alternative 2
March 2012
Figure 4-20



Biological Study Area
Alternative 2 Temporary Impact
Alternative 2 Permanent Impact
Agriculture
Drainage
Developed
Riparian

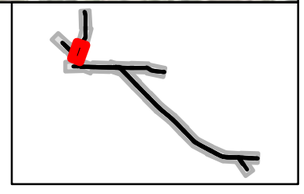
0 250 500 1,000 Feet

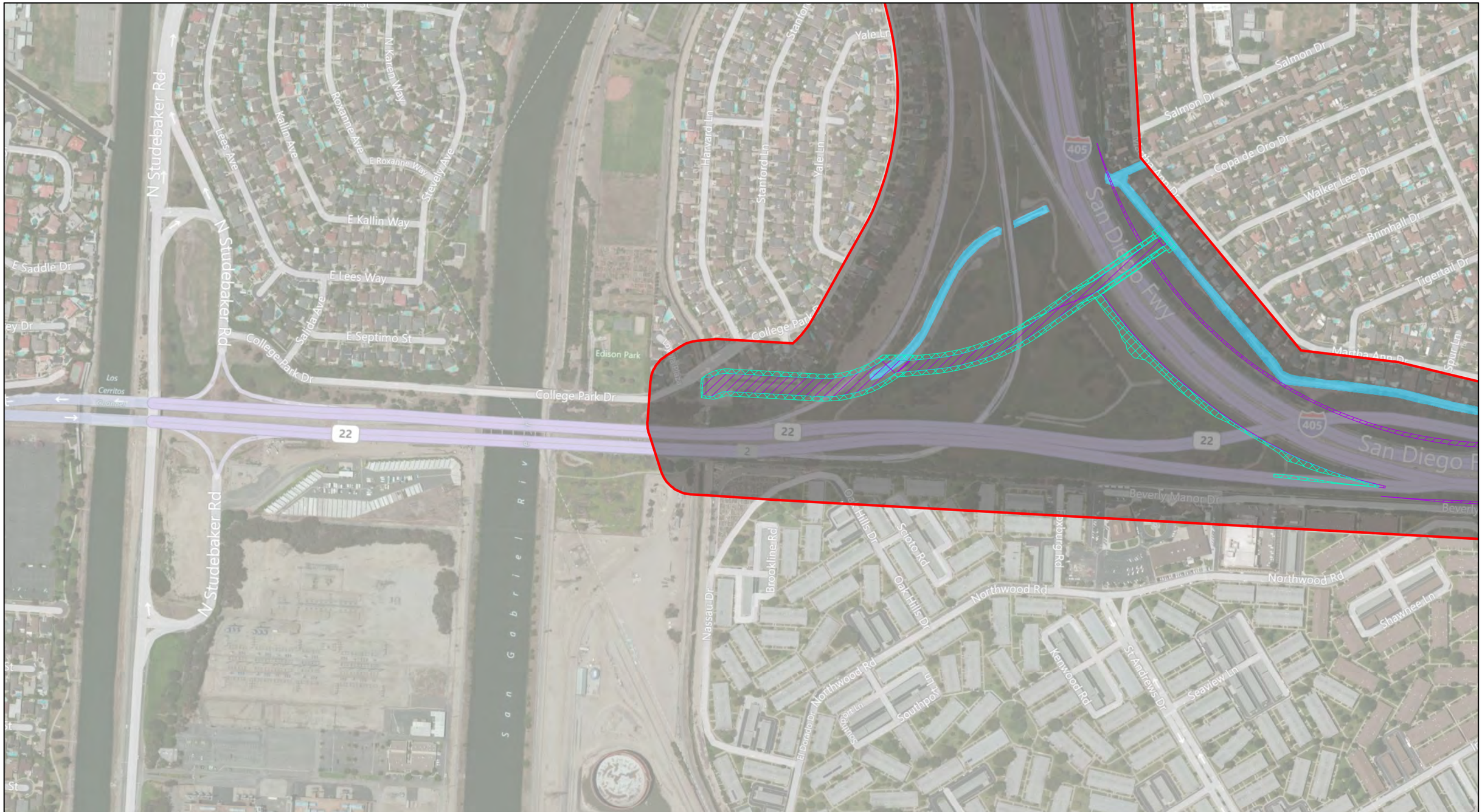
Vegetation Communities
Alternative 2
March 2012
Figure 4-21

Biological Study Area
Alternative 2 Temporary Impact
Alternative 2 Permanent Impact
Agriculture
Drainage
Developed
Riparian

0 250 500 1,000 Feet

Vegetation Communities
Alternative 2
March 2012
Figure 4-22

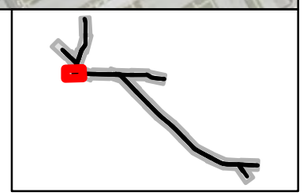




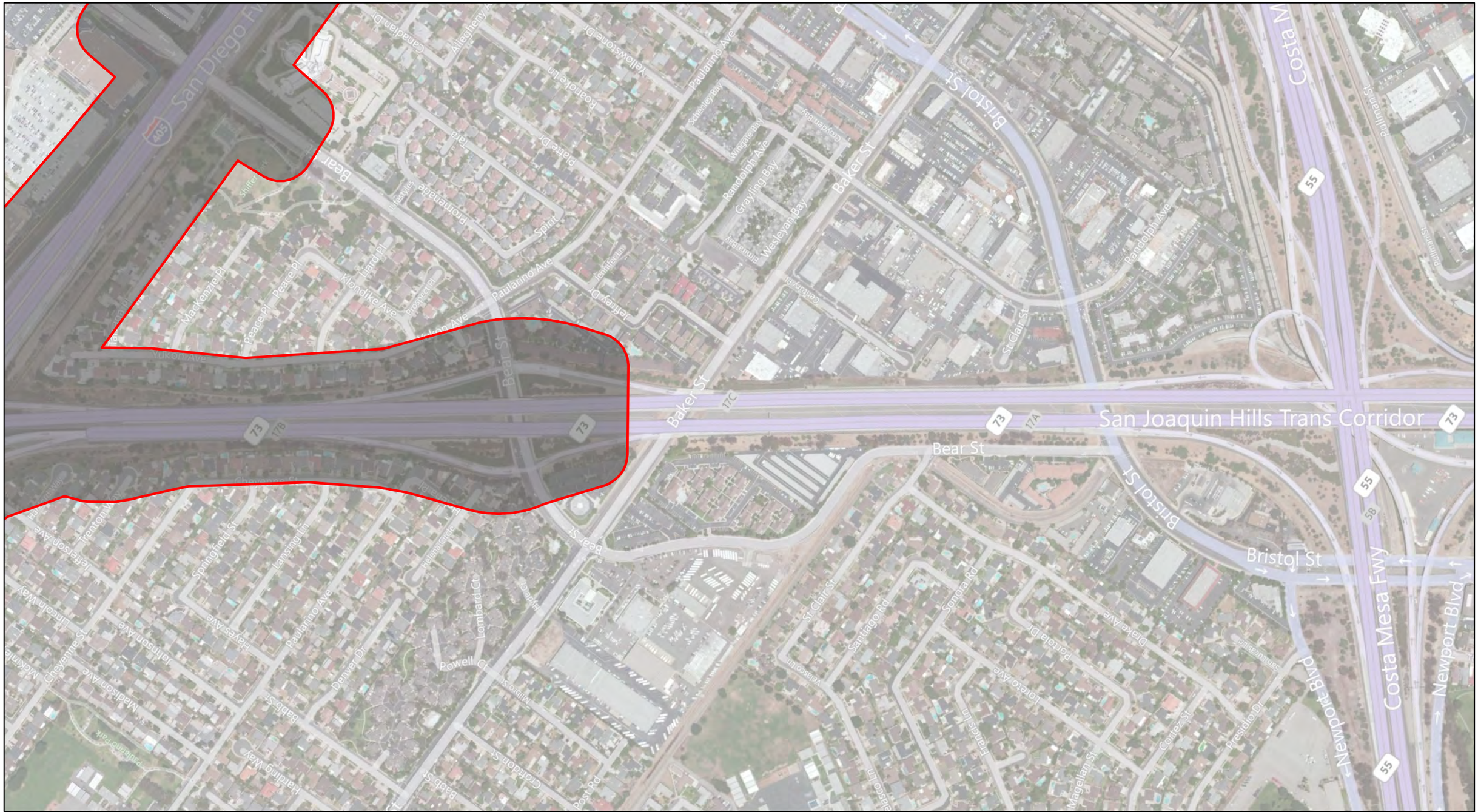
Biological Study Area
Alternative 2 Temporary Impact
Alternative 2 Permanent Impact
Agriculture
Drainage
Developed
Riparian

0 250 500 1,000 Feet

Vegetation Communities
Alternative 2
March 2012
Figure 4-23



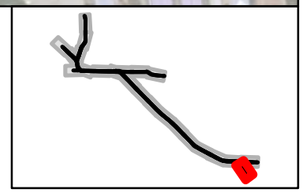
FIGURES 5-1 THROUGH 5-23 – VEGETATION COMMUNITIES ALTERNATIVE 3



Biological Study Area
Alternative 3 Temporary Impact
Alternative 3 Permanent Impact
Agriculture
Drainage
Developed
Riparian

0 250 500 1,000 Feet

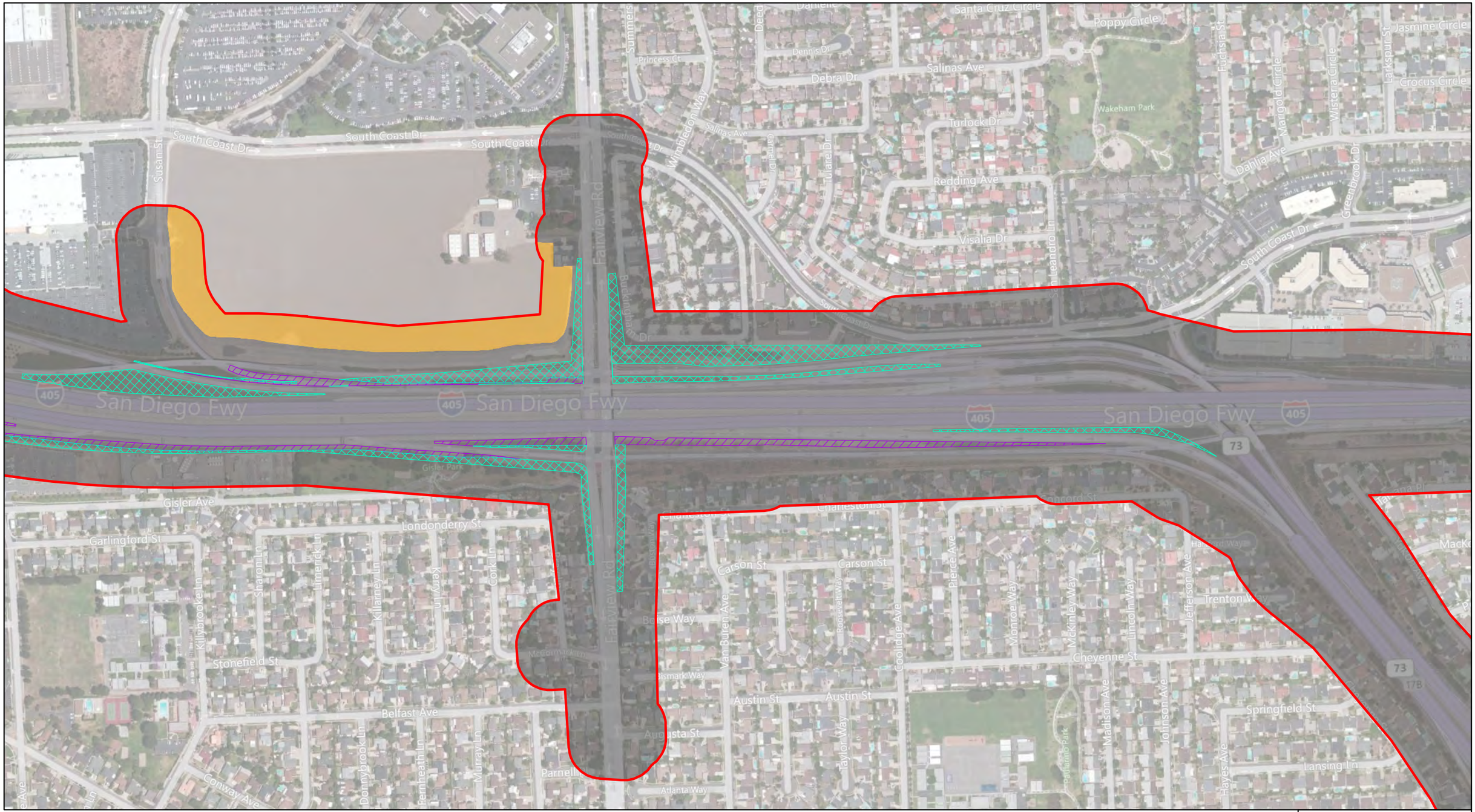
Vegetation Communities
Alternative 3
March 2012
Figure 5-1



Biological Study Area
Alternative 3 Temporary Impact
Alternative 3 Permanent Impact
Agriculture
Drainage
Developed
Riparian

0 250 500 1,000 Feet

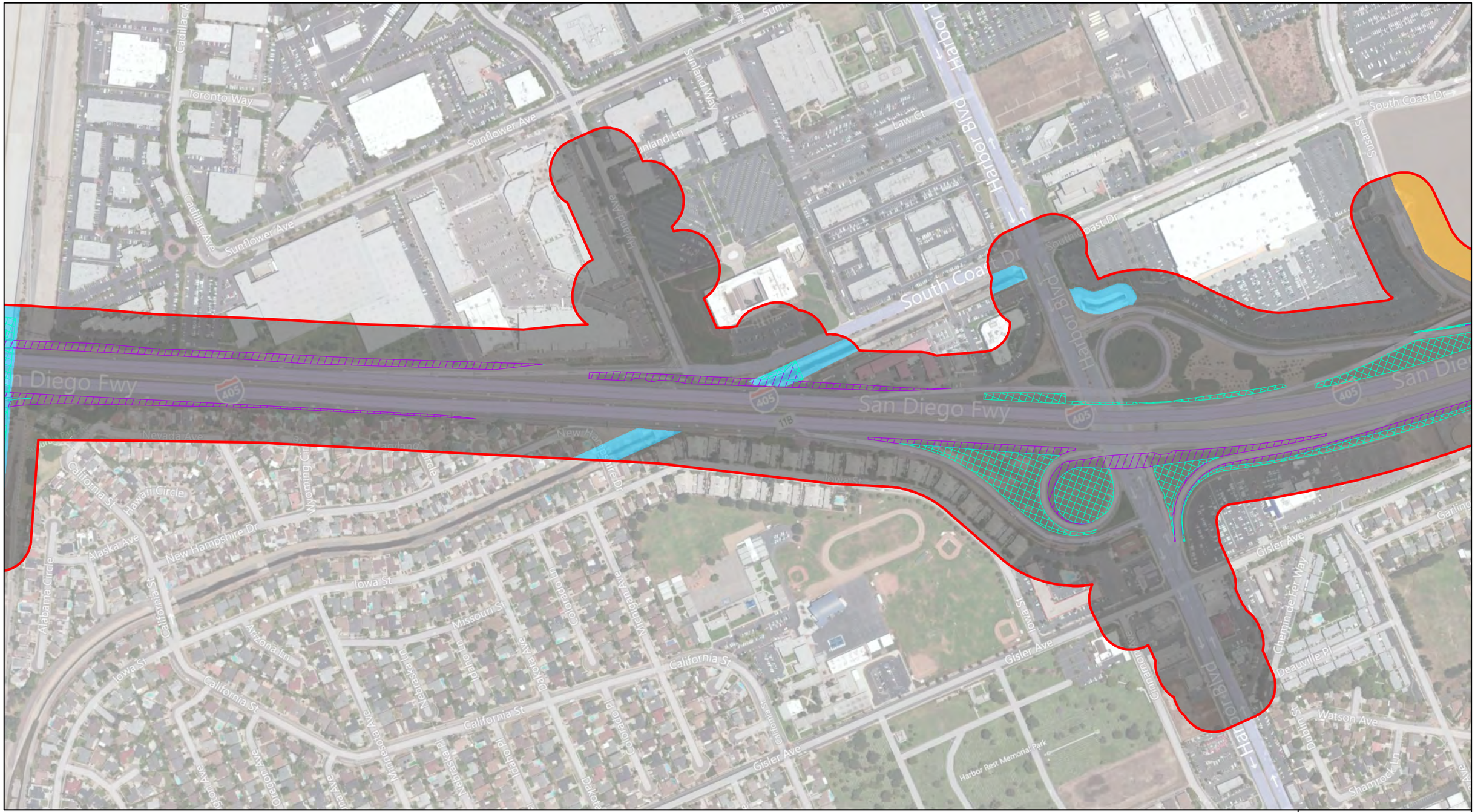
Vegetation Communities
Alternative 3
March 2012
Figure 5-2



Biological Study Area
Alternative 3 Temporary Impact
Alternative 3 Permanent Impact
Agriculture
Drainage
Developed
Riparian

0 250 500 1,000 Feet

Vegetation Communities
Alternative 3
March 2012
Figure 5-3



Biological Study Area
Alternative 3 Temporary Impact
Alternative 3 Permanent Impact
Agriculture
Drainage
Developed
Riparian

0 250 500 1,000 Feet

Vegetation Communities
Alternative 3
March 2012
Figure 5-4

Biological Study Area
Alternative 3 Temporary Impact
Alternative 3 Permanent Impact
Agriculture
Drainage
Developed
Riparian

0 250 500 1,000 Feet

Vegetation Communities
Alternative 3
March 2012
Figure 5-5

Biological Study Area
Alternative 3 Temporary Impact
Alternative 3 Permanent Impact
Agriculture
Drainage
Developed
Riparian

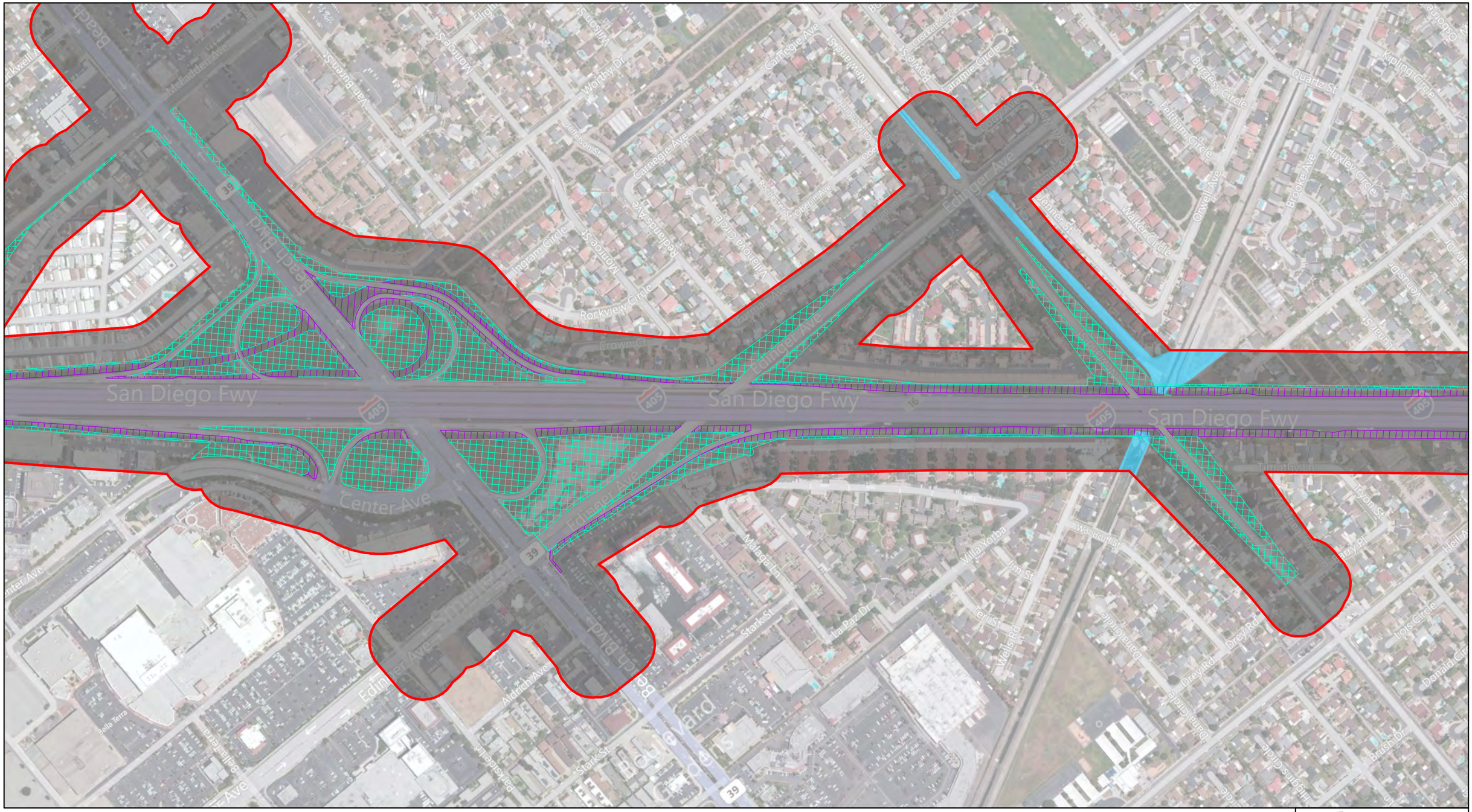
0 250 500 1,000 Feet

Vegetation Communities
Alternative 3
March 2012
Figure 5-6

Biological Study Area
Alternative 3 Temporary Impact
Alternative 3 Permanent Impact
Agriculture
Drainage
Developed
Riparian

0 250 500 1,000 Feet

Vegetation Communities
Alternative 3
March 2012
Figure 5-7



Biological Study Area
Alternative 3 Temporary Impact
Alternative 3 Permanent Impact
Agriculture
Drainage
Developed
Riparian

0 250 500 1,000 Feet

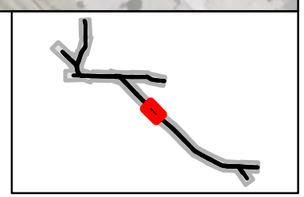
Vegetation Communities
Alternative 3
March 2012
Figure 5-8

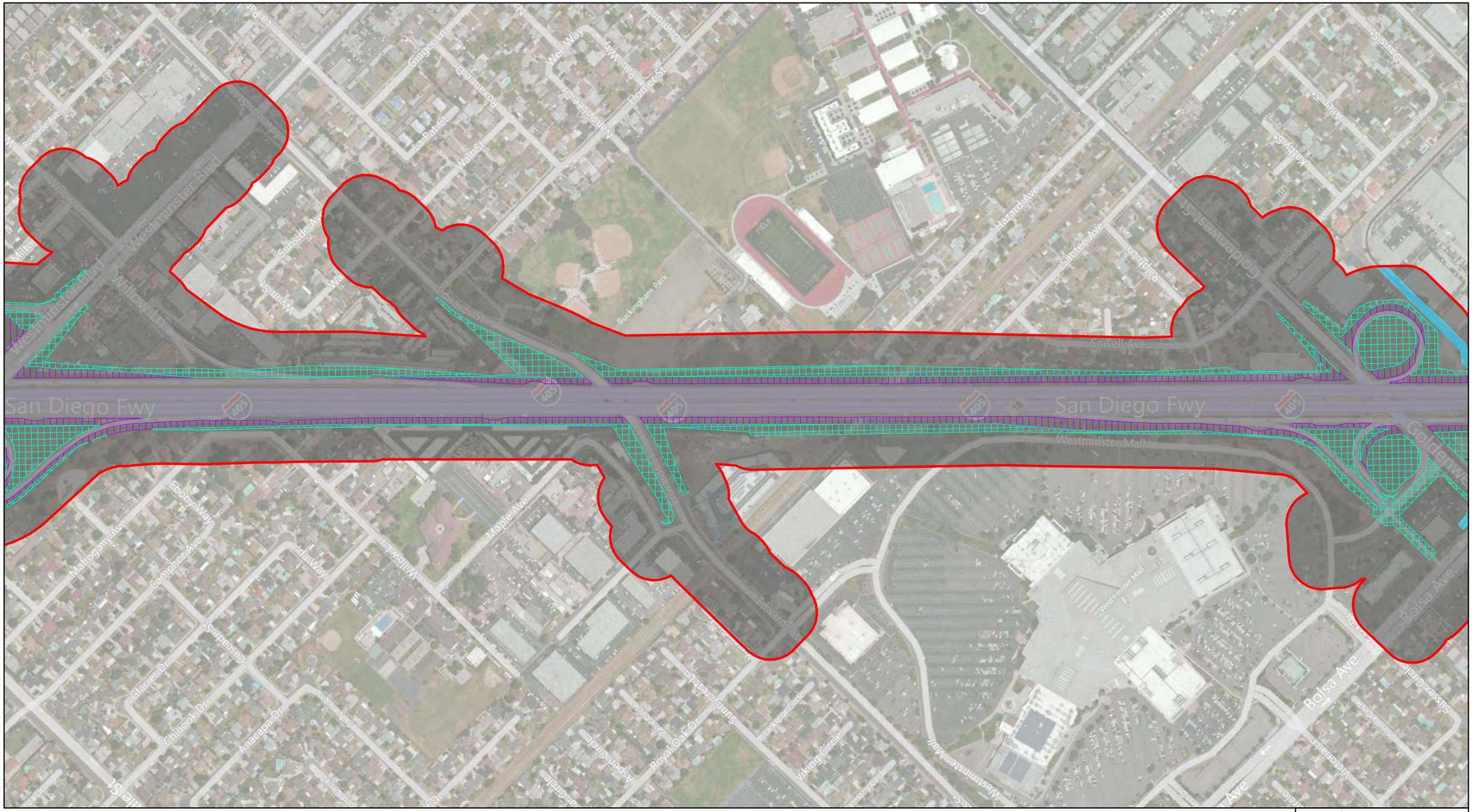
Biological Study Area
Alternative 3 Temporary Impact
Alternative 3 Permanent Impact
Agriculture
Drainage
Developed
Riparian

0 250 500 1,000 Feet

Vegetation Communities
Alternative 3
March 2012

Figure 5-9

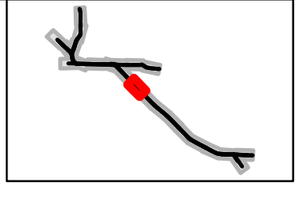


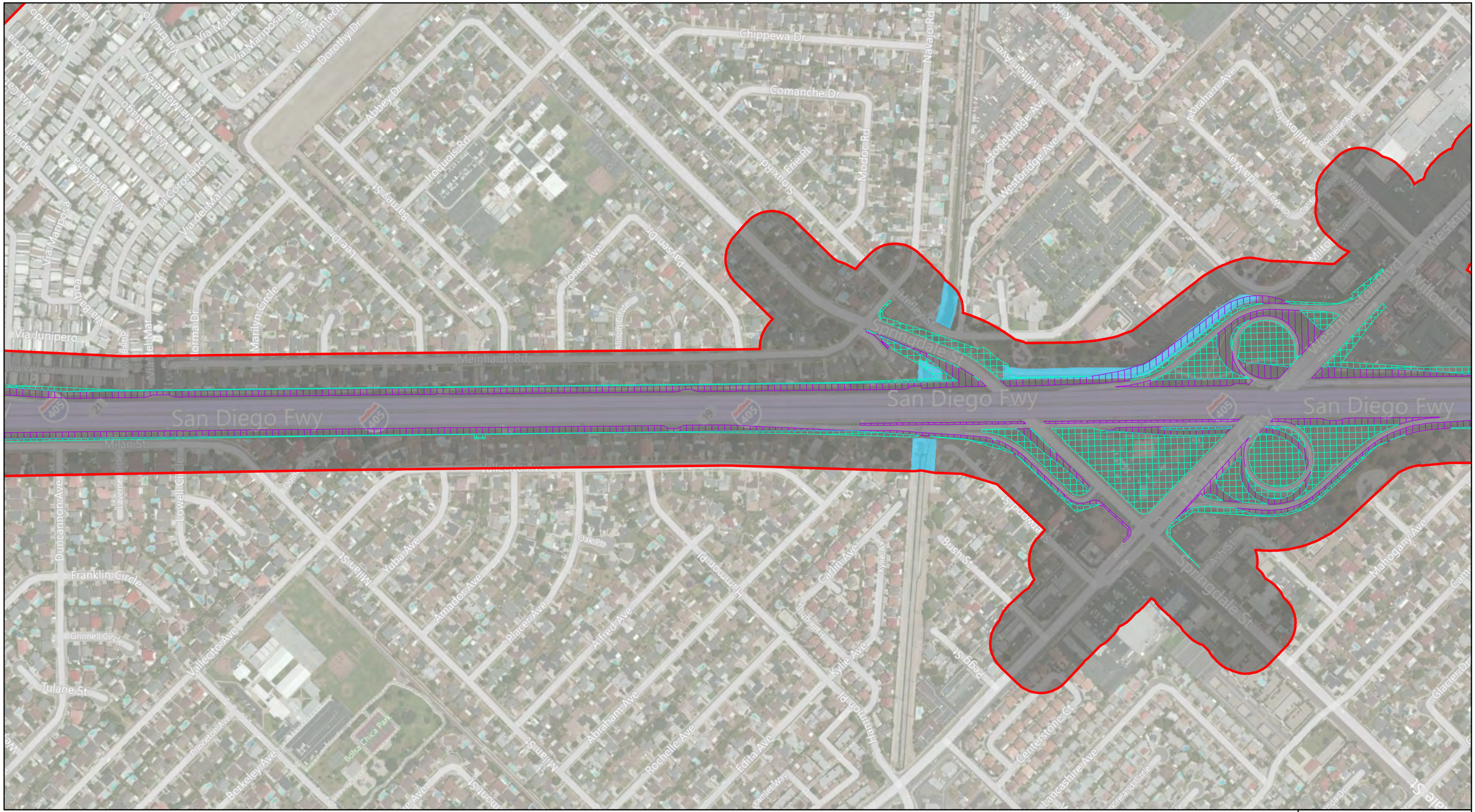


Biological Study Area
Alternative 3 Temporary Impact
Alternative 3 Permanent Impact
Agriculture
Drainage
Developed
Riparian

0 250 500 1,000 Feet

Vegetation Communities
Alternative 3
March 2012
Figure 5-10



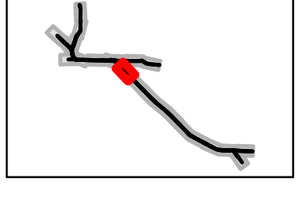


Biological Study Area
Alternative 3 Temporary Impact
Alternative 3 Permanent Impact
Agriculture
Drainage
Developed
Riparian

0 250 500 1,000 Feet

Vegetation Communities
Alternative 3
March 2012

Figure 5-11



Biological Study Area
Alternative 3 Temporary Impact
Alternative 3 Permanent Impact
Agriculture
Drainage
Developed
Riparian

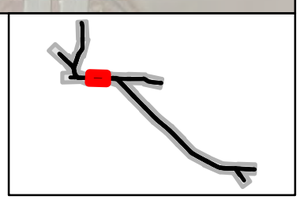
0 250 500 1,000 Feet

Vegetation Communities
Alternative 3
March 2012
Figure 5-12

Biological Study Area
Alternative 3 Temporary Impact
Alternative 3 Permanent Impact
Agriculture
Drainage
Developed
Riparian

0 250 500 1,000 Feet

Vegetation Communities
Alternative 3
March 2012
Figure 5-13



Biological Study Area
Alternative 3 Temporary Impact
Alternative 3 Permanent Impact
Agriculture
Drainage
Developed
Riparian

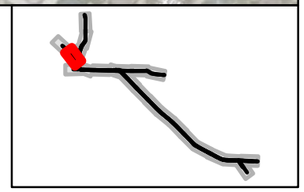
0 250 500 1,000 Feet

Vegetation Communities
Alternative 3
March 2012
Figure 5-14

Biological Study Area
Alternative 3 Temporary Impact
Alternative 3 Permanent Impact
Agriculture
Drainage
Developed
Riparian

0 250 500 1,000 Feet

Vegetation Communities
Alternative 3
March 2012
Figure 5-15



Biological Study Area
Alternative 3 Temporary Impact
Alternative 3 Permanent Impact
Agriculture
Drainage
Developed
Riparian

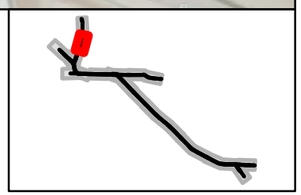
0 250 500 1,000 Feet

Vegetation Communities
Alternative 3
March 2012
Figure 5-16

Biological Study Area
Alternative 3 Temporary Impact
Alternative 3 Permanent Impact
Agriculture
Drainage
Developed
Riparian

0 250 500 1,000 Feet

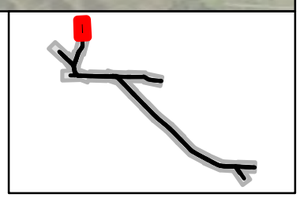
Vegetation Communities
Alternative 3
March 2012
Figure 5-17



Biological Study Area
Alternative 3 Temporary Impact
Alternative 3 Permanent Impact
Agriculture
Drainage
Developed
Riparian

0 250 500 1,000 Feet

Vegetation Communities
Alternative 3
March 2012
Figure 5-18



Biological Study Area
Alternative 3 Temporary Impact
Alternative 3 Permanent Impact
Agriculture
Drainage
Developed
Riparian

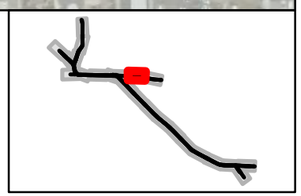
0 250 500 1,000 Feet

Vegetation Communities
Alternative 3
March 2012
Figure 5-19

Biological Study Area
Alternative 3 Temporary Impact
Alternative 3 Permanent Impact
Agriculture
Drainage
Developed
Riparian

0 250 500 1,000 Feet

Vegetation Communities
Alternative 3
March 2012
Figure 5-20



Biological Study Area
Alternative 3 Temporary Impact
Alternative 3 Permanent Impact
Agriculture
Drainage
Developed
Riparian

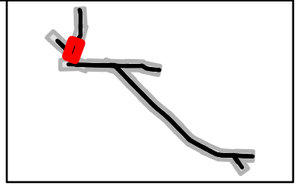
0 250 500 1,000 Feet

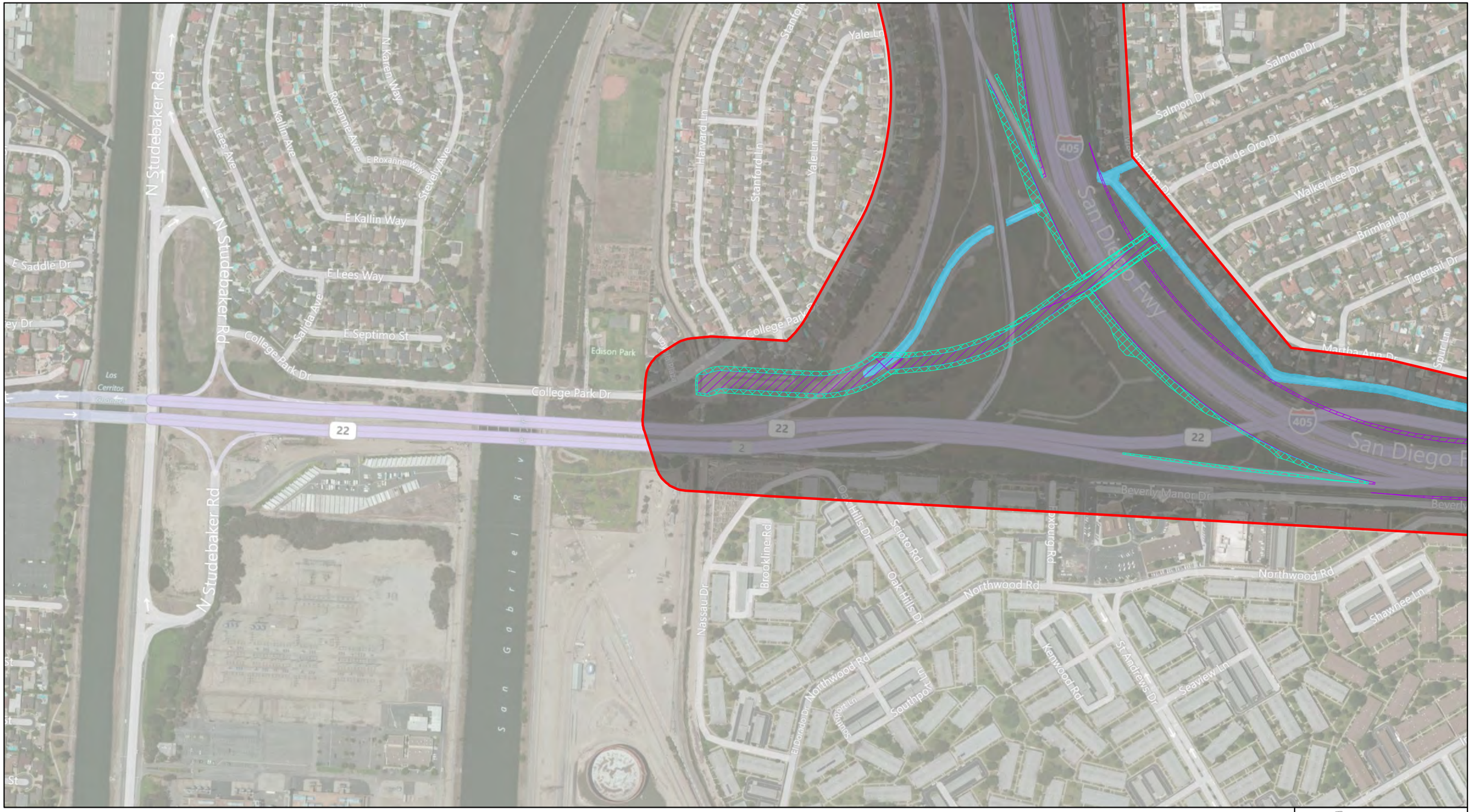
Vegetation Communities
Alternative 3
March 2012
Figure 5-21

Biological Study Area
Alternative 3 Temporary Impact
Alternative 3 Permanent Impact
Agriculture
Drainage
Developed
Riparian

0 250 500 1,000 Feet

Vegetation Communities
Alternative 3
March 2012
Figure 5-22

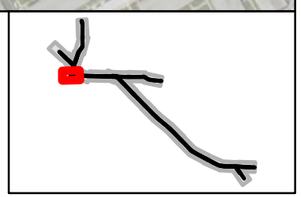




Biological Study Area
Alternative 3 Temporary Impact
Alternative 3 Permanent Impact
Agriculture
Drainage
Developed
Riparian

0 250 500 1,000 Feet

Vegetation Communities
Alternative 3
March 2012
Figure 5-23



The environmental baseline for this project is a disturbed and heavily human-influenced environment. The disturbed environment has influenced wildlife behavior and local ecology within the BSA and on surrounding lands. Any individual species present in the BSA or in adjacent/surrounding areas are assumed to have acclimated and developed tolerance to substantial physical disturbance, habitat loss, noise, light, trash, debris, and other effects resulting from the presence of a major interstate ROW. An additional, unquantifiable acreage of wildlife habitat may be temporarily indirectly affected by construction and operational noise, light, and other effects.

The BSA does not include documentation of historic or current occurrences of special-status species; however, construction could result in a short-term loss of wildlife foraging habitat for commonly occurring species, but it may only temporarily and incrementally increase habitat fragmentation on a regional level. Some breeding potential could be lost during construction for common species that may breed in close proximity to the proposed project and other nearby areas proposed for disturbance. This loss of productivity would be temporary, and breeding individuals would be expected to reoccupy the BSA and adjacent habitats following completion of construction activities. Furthermore, activities have the potential to result in direct take of species protected under Section 10 of the MBTA and CFG Code Section 3500 *(et seq.);* however, with the implementation of measures outlined in the following section, no adverse impacts to species protected by these statutes are anticipated.

As stated above, the proposed project would temporarily impact predominantly developed and low-quality, nonnative habitats. Project impacts include potential temporary displacement of foraging birds in the immediate vicinity of the BSA due to construction activities; however, these impacts are considered minimal because of the relatively small amount of functional foraging habitat being affected and the current disturbed nature of the habitat. No impacts to wildlife movement are expected from project implementation. The proposed project does not directly impact any lands that are known to connect natural open space and undeveloped locales essential for the regional long-term viability of plants and wildlife. Flood-control channels and culverts may provide limited localized wildlife movements that may be impacted by the proposed project; however, these impacts are temporary, and wildlife would quickly reoccupy the habitat following construction.

4.1. Natural Communities of Special Concern

Habitats are considered to be of special concern based on (1) federal, state, or local laws regulating their development; (2) limited distributions; and/or (3) the habitat requirements of special-status plants or animals occurring onsite. The BSA includes four vegetation/land cover types, which include Agriculture, Developed, Riparian, and Channel. Only the Riparian community may be considered a Natural Community of Special Concern.

4.1.1. Discussion of of Natural Comminuity Riparian

The Riparian community occurs within limited portions of the BSA and consists of native riparian habitat that has been heavily impacted by invasive, non-native species. Typical nonnative species within this community include giant reed, castor bean, Mexican fan palm, tree of heaven, black mustard, poison hemlock, and fennel. Typical native species within this community include mule fat, umbrella sedge, and California bulrush.

The typical association of these riparian habitat types with drainages means that they are "protected" under the CFG Code and, to a certain extent, wetlands in the riparian area are jurisdictional under the CWA. These habitats are considered wildlife habitat because they provide protective cover, water, and food for a variety of species. Many animal species are riparian habitat obligates. Other animals, including large mammals, require access to water and use bands of riparian habitat as wildlife corridors. As such, CDFG regulates riparian areas only to the extent that those areas are associated with the banks of a stream or lake shorelines.

4.1.1.1. Survey Results

General surveys conducted within the BSA in 2009 and 2010 concluded that riparian habitat is limited to the banks of the San Gabriel River. The riparian habitat within the BSA is heavily disturbed and dominated by nonnative species. Nonnative species observed during surveys included giant reed, castor bean, Mexican fan palm, tree of heaven, black mustard, poison hemlock, and fennel. Native species observed during surveys included mule fat, umbrella sedge, and California bulrush.

4.1.1.2. Avoidance and Minimization Efforts

No impacts to the Riparian community are expected; however, the following measures will be incorporated:

- Prior to clearing or construction, highly visible barriers (e.g., orange construction fencing) will be installed around riparian/riverine vegetation adjacent to the project footprint to designate environmentally sensitive areas to be preserved. No grading or fill activity of any type will be permitted within these environmentally sensitive areas. In addition, heavy equipment, including motor vehicles, will not be allowed to operate within the environmentally sensitive areas. All construction equipment will be operated in a manner to prevent accidental damage to nearby preserved areas. No structure of any kind, or incidental storage of equipment or supplies, will be allowed within these protected zones. Silt fence barriers will be installed at the environmentally sensitive area boundary to prevent accidental deposition of fill material in areas where vegetation is immediately adjacent to planned grading activities.
- To avoid impacts to nesting birds, any native vegetation removal or tree (i.e., native or exotic) trimming activities will occur outside of the nesting bird season (February 15 through August 31). If vegetation clearing is necessary during the nesting season, a qualified biologist will conduct a preconstruction survey to identify the locations of nests. Should nesting birds be found, an exclusionary buffer will be established by the biologist. This buffer shall be clearly marked in the field by construction personnel under guidance of the biologist, and construction or clearing will not be conducted within this zone until the biologist determines that the young have fledged or the nest is no longer active.
- Inspection and cleaning of construction equipment will be performed to minimize the importation of nonnative plant material, and eradication strategies (i.e., weed abatement programs) will be employed should an invasion occur.

4.1.1.3. Project Impacts

Temporary and permanent impacts to all communities are listed in Table 4-1 by each unique project alternative.

TABLE 4-1. IMPACTS TO VEGETATION COMMUNITIES BY ALTERNATIVE

Vegetation Community	Alternative 1		Alternative 2		Alternative 3	
	Temporary (Acres)	Permanent (Acres)	Temporary (Acres)	Permanent (Acres)	Temporary (Acres)	Permanent (Acres)
Agriculture	0	0	0	0	0	0
Developed	189.1	79.3	179.7	91.3	202.1	101.2
Riparian	0	0	0	0	0	0
Drainage	5.7	1.6	5.6	1.9	6.8	2
Total	194.8	80.9	185.3	93.2	208.9	103.2

Alternative 1 would result in the least amount of permanent loss (80.9 acres) to Developed and Channel vegetation/land cover types, followed by Alternative 2 (93.2 acres) and Alternative 3 (104.2 acres). No permanent loss of Agriculture or Riparian vegetation communities would occur for any alternative. Alternative 2 would result in the least overall acres of temporary impacts (185.3 acres) to Developed and Channel vegetation/land cover types, followed by Alternative 1 (194.8 acres) and Alternative 3 (208.9 acres). No impacts to Agriculture or Riparian vegetation communities would occur for any alternative.

4.1.1.4. Compensatory Mitigation

No impacts are expected to Natural Communities of Special Concern; therefore, no compensatory mitigation is proposed.

4.1.1.5. Cumulative Impacts

The proposed project has minimal potential to degrade the environment or result in adverse impacts to biological resources. Construction and implementation of the proposed project would not adversely impact Natural Communities of Special Concern. Future development is anticipated and planned for in the area. According to the State CEQA and NEPA Guidelines, a Lead Agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project will comply with all applicable local, state, and federal codes, ordinances, laws, and other required regulations to mitigate, avoid, or substantially lessen the cumulative impact within the geographic area. As detailed herein, the proposed project would comply with all applicable codes, laws, ordinances, and regulations to minimize or avoid impacts altogether. Furthermore, any planned projects also would be required to comply with all applicable local, state, and federal codes, ordinances, laws, and other required regulations.

4.2. Special-Status Plant Species

Twenty-four (24) special-status plant species are reported to occur within the USGS quadrangles surrounding the proposed project. Twenty-three (23) of these special-status plant species were determined to have an *Absent* (A) potential for occurrence designation within the BSA. Appendix A includes a list of all special-status plant species, their habitat descriptions, status, and potential for occurrence.

Habitat for one (1) special-status plant species was identified within the BSA:

- Southern Tarplant

4.2.1. Discussion of Southern Tarplant

The Southern Tarplant is an annual herb that occurs in vernal pools, margins of marshes and swamps, and vernally mesic valley and foothill grasslands, sometimes with saltgrass on alkaline soil up to 1,400 ft in

elevation. Flowering season is May through November. The Southern Tarplant is listed by CNPS as a 1b.1 species.

4.2.1.1. Survey Results

Although potential habitat for this species occurs within limited portions of the BSA, general surveys conducted within the BSA in 2009 and focused surveys conducted in 2009 and 2010 concluded that this species was absent from the BSA. Twelve (12) reported populations of Southern Tarplant are reported within the Los Alamitos, Seal Beach, and Newport Beach quadrangles containing the BSA (CDFG 2010). Four of the locations are historical records (i.e., 1920-1930s) and are considered extirpated. The remaining eight populations are considered extant and occur from 1.5 to 2.4 mi from BSA limits. These extant populations are generally associated with Newport Back Bay or Bolsa Chica State Park, and no populations are reported to occur within the BSA.

4.2.1.2. Avoidance and Minimization Efforts

Because this species is considered absent from the BSA, no avoidance and minimization efforts are required.

4.2.1.3. Project Impacts

Because this species is considered absent from the BSA, the project is not expected to impact this species.

4.2.1.4. Compensatory Mitigation

Because this species is considered absent from the BSA, no compensatory mitigation is required.

4.2.1.5. Cumulative Effects

Because this species is considered absent from the BSA, it is unlikely that the proposed project would contribute to cumulative effects to this species.

4.3. Special-Status Animal Species Occurrences

Thirty-five (35) special-status wildlife species are reported to occur within the USGS quadrangles containing the proposed project. Thirty-four (34) of these special-status wildlife species were determined to have an "*A*" potential for occurrence designation within the BSA. Appendix A includes a list of all of the special-status wildlife species, their habitat descriptions, status, and potential for occurrence.

Habitat for one (1) wildlife species was identified within the BSA:

- Burrowing Owl

4.3.1. Discussion of Burrowing Owl

The Burrowing Owl utilizes burrows in open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation, and it is a subterranean nester, dependent upon burrowing mammals, most notably the California ground squirrel. The Burrowing Owl is listed as a State species of special concern.

4.3.1.1. Survey Results

Although potential habitat for this species occurs within limited portions of the BSA, as identified in Section 3.2, general surveys conducted within the BSA in 2009 and focused surveys conducted in 2010 concluded

that this species was absent from the BSA. Two reported occurrences of Burrowing Owl have been documented within the quadrangles containing the BSA (CDFG 2010). No occurrences are reported within the BSA. One 1993 report occurs within Bolsa Chica State Park, approximately 4 mi from the BSA, and another report from 2006 occurs in Fairview Park, Costa Mesa, California, located 2 mi from the BSA.

4.3.1.2. Avoidance and Minimization Efforts

No impacts to special-status animal species or Burrowing Owls are expected; however, the following measures will be incorporated:

- To avoid impacts to nesting birds, any native vegetation removal or tree (i.e., native or exotic) trimming activities will occur outside of the nesting bird season (February 15 through August 31). If vegetation clearing is necessary during the nesting season, a qualified biologist will conduct a preconstruction survey to identify the locations of nests. Should nesting birds be found, an exclusionary buffer will be established by the biologist. This buffer shall be clearly marked in the field by construction personnel under guidance of the biologist, and construction or clearing will not be conducted within this zone until the biologist determines that the young have fledged or the nest is no longer active.

- In order to ensure that any owls that may occupy the site are not affected by construction activities, preconstruction burrowing owl surveys and potential owl relocation will be required prior to any phase of construction. These preconstruction surveys are also required in order to comply with the MBTA and the California Fish and Game Code. If any of the preconstruction surveys determine that the species is present, one or more of the following measures may be required: (1) avoidance of active nests and surrounding buffer area during construction activities; (2) passive relocation of individual owls; (3) active relocation of individual owls; and (4) preservation of on-site habitat with long-term conservation value for the owl.
- To avoid impacts to raptors, all new highway lighting adjacent to NAVWPNSTA Seal Beach shall not contain features that allow for raptor perches, as feasible.

- To avoid impacts to migratory birds at the Seal Beach National Wildlife Refuge, all new highway lighting adjacent to NAVWPNSTA Seal Beach shall be directed down towards the highway itself.

4.3.1.3. Project Impacts

Because this species is considered absent from the BSA, the proposed project is not expected to impact this species.

4.3.1.4. Compensatory Mitigation

Due to the measures described above, the proposed project is not expected to directly affect this species; therefore, specific compensatory mitigation is not warranted.

4.3.1.5. Cumulative Effects

Because this species is considered absent from the BSA, it is unlikely that the proposed project would contribute to cumulative effects to this species.

4.3.2. Discussion of Bat Species

Although no bats were observed within the BSA during the pedestrian surveys, there is a potential for bats to occur within suitable vegetation, bridges, culverts, and other structures that could support roosting. Large trees, bridges and other structures offer natural roosts that include thermal buffering, which bats require (Perlmeter 1996, 2004; Pierson *et al.* 1996). Bridges also frequently serve to replace natural roosts in altered landscapes.

4.3.2.1. Survey Results

A bat habitat suitability assessment survey has not been conducted for the proposed project because no historic records exist of bats roosting or breeding colonies within the BSA.

4.3.2.2. Avoidance and Minimization Efforts

Although bat species are considered to be absent from the BSA, due to seasonal variation of roosting locations, the following measures will be incorporated to avoid and minimize impacts to special-status bat species:

- A qualified bat biologist shall conduct a preconstruction bat habitat suitability assessment to determine if the construction area contains potential bat habitat within the project footprint or immediate surroundings, including roosting sites, foraging sites, and/or maternity colonies. The surveys shall include a combination of inspection, sampling, exit counts, and acoustic surveys. The survey shall be completed in June or at a time determined appropriate by a qualified bat biologist prior to construction, because maternity roosts are generally formed in late spring.
    - If occupied or historic roosting sites, foraging sites, and/or maternity colonies are identified during the preconstruction bat habitat suitability assessment, construction activities shall not be initiated at the location until the bats have been excluded from the location, using CDFG-approved exclusion devices, and the qualified bat biologist certifies the location bat free. All exclusion activities will be coordinated with CDFG and completed under the supervision of a qualified bat biologist. Once installed, exclusion devices will be maintained throughout the duration of the construction activities or until construction at the location is deemed complete and bat use is again acceptable.
    - If maternity sites are identified during the preconstruction bat habitat suitability assessment, no construction activities at the location containing the maternity roost will be allowed during the maternity season (April 1 through July 30), unless a qualified bat biologist has determined that young have been weaned. If present, and it is anticipated that construction activities cannot be completed outside of the maternity season, then bat exclusion at maternity roost sites shall be completed either as soon as allowed by the qualified bat biologist after the young have been weaned or outside of the maternity season, prior to initiating construction activities or as otherwise approved by the qualified bat biologist in coordination with CDFG.

4.3.2.3. Project Impacts

Because this species is considered absent from the BSA, the proposed project is not expected to impact this species.

4.3.2.4. Compensatory Mitigation

Due to the measures described above, the proposed project is not expected to directly affect this species; therefore, specific compensatory mitigation is not warranted.

4.3.2.5. Cumulative Effects

Because this species is considered absent from the BSA, it is unlikely that the proposed project would contribute to cumulative effects to this species.

5.1. Federal Endangered Species Act Consultation Summary

Under the provisions of Section 7(a)(2) of the ESA, a federal agency that permits, licenses, funds, or otherwise authorizes a project activity must consult with USFWS to ensure that its actions would not jeopardize the continued existence of any listed species or destroy or adversely modify critical habitat. This NES provides details on the proposed project's impacts to federally listed plant and wildlife species. The project's BSA is predominantly confined to heavily developed, anthropogenically disturbed areas containing public and private infrastructure. Where potential impacts to biological resources have been identified within this document, the implementation of specific compensation programs have been recommended to avoid, minimize, and offset impacts. Based on field surveys and a review of pertinent literature, the proposed project is not anticipated to adversely impact special-status species or their habitats and a "No Effect" determination would be anticipated for the proposed project. More specifically, the proposed project is not expected to result in a trend toward additional state or federal protection, loss of viability, or to substantially modify regional habitat availability for any common or special-status species. The proposed project is a "Major Action" and must meet the requirements for Section 7. As the Federal Lead Agency, Caltrans will consult with the U.S. Fish and Wildlife Service (USFWS) regarding Federal Endangered Species Act Section 7 compliance.

5.2. Federal Fisheries and Essential Fish Habitat Consultation Summary

The BSA does not include Essential Fish Habitat and will not require consultation.

5.3. California State Endangered Species Act Consultation Summary

The CESA protects plant and animal species listed as rare, threatened, or endangered. CDFG authorizes take of endangered, threatened, or candidate species through the provisions of Sections 2081 and 2081.1 of the CFG Code. Authorization from CDFG (under Sections 2081 or 2080.1 of the CFG Code) for take of any state endangered, threatened, or candidate species is not expected.

5.4. Wetlands and Other Waters Coordination Summary

A preliminary jurisdictional delineation has been prepared for this project. A routine study area determination was conducted for USACE-defined WoUS and wetlands using the methods set forth in the USACE Wetland Delineation Manual (EL 1987) and the Arid West Regional Supplement, version 2.0 (USACE 2008). Details in Section 3.2, Section 5.4, Table 5-1, and figures in Appendix E are still preliminary at this time and subject to verification by USACE, Santa Ana RWQCB, and CDFG. A total of 115 features within 4 watersheds (i.e., San Gabriel River-Coyote Creek; Anaheim Bay-Huntington Harbour; Santa Ana River; and Newport Bay) were observed within the BSA, consisting of 19 drainages potentially subject to USACE, Santa Ana RWQCB, and/or CDFG jurisdiction.

Current estimated potential USACE jurisdictional areas within the BSA are detailed in Table 3-2 and Appendix D. Santa Ana RWQCB jurisdiction applies to those same features subject to USACE regulation within the BSA. Accordingly, the current estimate indicates 19 drainages are subject to RWQCB compliance as well. Current estimated areas under Santa Ana RWQCB jurisdiction within the BSA is included in Table 3-2 and depicted within the figures in Appendix E.

CDFG jurisdictional areas within the BSA are described in Table 3-2 and are depicted in the figures in Appendix E. Current estimated CDFG jurisdiction within the BSA includes 19 drainages that contain a well-defined bed and bank, and function as either flood control facilities and/or detention basins that are either modified natural drainages and/or function as artificial drainages that have acquired the physical attributes of natural stream courses and provide low values for fish and wildlife. Each of these features contains biological resources that are hydrologically connected to a larger, downstream waterbody; therefore, they provide low functions and values for wildlife.

One feature, identified as 4-4, contains wetlands as defined by USACE guidelines. The wetland is connected to the San Gabriel River. The wetland may provide some function as flood control and for sediment trapping, but not as viable habitat for species because of its disturbed nature and its proximity to the highway. The value of the wetland is minimal because the San Gabriel River in this area does not provide any recreational or aesthetic benefit to the surrounding community.

Temporary impacts and permanent losses for each project alternative by drainage are provided in Table 5-1. The impact acreages shown in Table 5-1 are the same for all jurisdictional waters (i.e., USACE Other Waters, RWQCB jurisdictional waters, and CDFG jurisdictional streambed). The proposed project would not impact any wetlands within the BSA.

TABLE 5-1. TEMPORARY IMPACTS AND PERMANENT LOSS BY ALTERNATIVE WITHIN THE BSA

Feature ID	Alternative 1		Alternative 2		Alternative 3	
	Temporary Impacts (acres)	Permanent Impacts (acres)	Temporary Impacts (acres)	Permanent Impacts (acres)	Temporary Impacts (acres)	Permanent Impacts (acres)
San Gabriel River-Coyote Creek Watershed						
3-6	--	--	--	--	--	--
4-1	0.03	0.06	0.03	0.06	0.03	0.06
4-3	--	--	--	--	--	--
4-4	--	--	--	--	--	--
5-1	--	--	--	--	--	--
7-2	0.03	0.42	0.03	0.42	0.03	0.42
Anaheim Bay-Huntington Harbour Watershed						
8-2[1]	--	--	--	--	--	--
10-1	0.12	0.04	0.12	0.04	0.12	0.04
16-1	--	--	--	--	--	--
16-2	0.12	0.06	0.10	0.07	0.10	0.07
16-3	0.02	0.10	0.02	0.10	0.02	0.10
18-4	0.15	0.05	0.15	0.05	0.15	0.05
21-2	0.07	0.07	0.04	0.10	0.04	0.10
23-1	0.48	0.12	0.48	0.12	0.48	0.12
Santa Ana River Watershed						
25-4	0.06	0.06	0.06	0.06	0.06	0.06
26-1	3.85	0.01	3.85	0.01	3.85	0.01
27-1	--	--	--	--	0.01	0.11
28-2	--	--	--	--	0.46	--
Newport Bay Watershed						
31-2	--	--	--	--	--	--
TOTAL	4.93	0.99	4.88	1.03	5.33	1.14

[1] Also in Anaheim Bay-Huntington Harbour Watershed

-- No impact
The descriptive statistics provided have been rounded to 0.01–acre.

Based on Table 5-1, Alternative 1 would have the following permanent impacts to areas that are jurisdictional under USACE, RWQCB, and CDFG:

- San Gabriel River-Coyote Creek Watershed: 0.48–acre
- Anaheim Bay-Huntington Harbour Watershed: 0.44–acre
- Santa Ana River Watershed: 0.07–acre
- Newport Bay Watershed: 0.0-acre

Based on Table 5-1, Alternative 2 would have the following permanent impacts to areas that are jurisdictional under USACE, RWQCB, and CDFG:

- San Gabriel River-Coyote Creek Watershed: 0.48-acre

- Anaheim Bay-Huntington Harbour Watershed: 0.48-acre
- Santa Ana River Watershed: 0.07-acre
- Newport Bay Watershed: 0.0-acre

Based on Table 5-1, Alternative 3 would have the following permanent impacts to areas that are jurisdictional under USACE, RWQCB, and CDFG:

- San Gabriel River-Coyote Creek Watershed: 0.48-acrs
- Anaheim Bay-Huntington Harbour Watershed: 0.48-acre
- Santa Ana River Watershed: 0.18-acre
- Newport Bay Watershed: 0.0-acre

Based on Table 5-1, Alternative 1 would have the following temporary impacts to areas that are jurisdictional under USACE, RWQCB, and CDFG:

- San Gabriel River-Coyote Creek Watershed: 0.06-acrs
- Anaheim Bay-Huntington Harbour Watershed: 0.96-acre
- Santa Ana River Watershed: 3.91-acre
- Newport Bay Watershed: 0.0-acre

Based on Table 5-1, Alternative 2 would have the following temporary impacts to areas that are jurisdictional under USACE, RWQCB, and CDFG:

- San Gabriel River-Coyote Creek Watershed: 0.06-acre
- Anaheim Bay-Huntington Harbour Watershed: 0.91-acre
- Santa Ana River Watershed: 3.91-acre
- Newport Bay Watershed: 0.0-acre

Based on Table 5-1, Alternative 3 would have the following temporary impacts to areas that are jurisdictional under USACE, RWQCB, and CDFG:

- San Gabriel River-Coyote Creek Watershed: 0.06-acre
- Anaheim Bay-Huntington Harbour Watershed: 0.91-acre
- Santa Ana River Watershed: 4.38-acre

- Newport Bay Watershed: 0.0-acre

All of the build alternatives would likely require a CWA Section 404 permit, a 401 Water Quality Certification, and a CDFG Lake and Streambed Alteration Agreement (LSAA) Notification prior to project construction.

5.5. Invasive Species

Exotic plant species exist within the nonnative plant communities throughout the BSA, within patches of native plant communities, and in areas that have been disturbed by human uses. Exotic species are typically more numerous adjacent to roads and developed areas and frequently border the ornamental landscape. In the past, these areas likely supported grasslands, oak woodland, coastal sage scrub (CSS), and riparian habitats. Consequently, scattered plant species associated with these plant communities are often found in these areas. Approximately 70-80% of vegetated lands within the BSA are dominated by invasive species, mostly consisting of annual grasses and forbs. A total of 45 exotic plants occurring on California Invasive Plant Council's (Cal- IPC's) California Invasive Plant Inventory were identified in the BSA. Of these species, there are 6 with a high rating, 23 with a moderate rating, and 16 with a limited rating. Invasive species that have severe ecological impacts are given a high rating. Species with a high rating identified within the BSA are: giant reed, foxtail chess (*Bromus madritensis ssp. madritensis*), hottentot-fig (*Carpobrotus edulis*), pampass grass (*Cortaderia selloana*), fennel, and English ivy (*Hedera helix*). These observations should not be considered all-inclusive.

A complete list of Invasive Species Council of California (ISCC) invasive species is included as Appendix G, and a complete list of ISCC's scorecard list is included as Appendix H. Note that the list is constantly updated; for a current list, refer to the UC Davis Web site (http://ice.ucdavis.edu/invasives).

In compliance with EO 13112, invasive species would be removed from the project work area and controlled during construction. In addition, affected areas would not be revegetated with plant species listed in ISCC with a high or moderate rating. In areas adjacent to native vegetation, the use of plant species native to the southern California region is highly recommended. In addition, inspection and cleaning of construction equipment would be performed to minimize the importation of nonnative plant material, and eradication strategies (i.e., weed abatement programs) would be employed should an invasion occur. Furthermore, compliance with EO 13112 shall also include animal or insect species on the ISCC lists as well.

The following measures will avoid, minimize, or mitigate potential temporary and permanent impacts related to invasive species:

- In compliance with EO 13112, weed control will be performed to minimize the importation of nonnative plant material during and after construction. Eradication strategies will be employed should an invasion occur. Measures addressing invasive species abatement and eradication will be included in the project design and contract specifications. These measures may include, but not be limited to:
    - All construction site Best Management Practices (BMPs) from the Storm Water Pollution Prevention Plan (SWPPP) will be followed.
    - During construction, all construction equipment will be cleaned of mud or other debris that may contain invasive plants and/or seeds and will be inspected to reduce the potential of spreading

noxious weeds before mobilizing to arrive at the site and before leaving the site. This will be included in project provisions.

- After construction, affected areas adjacent to native vegetation will be revegetated with plant species native to the southern California region approved by the Caltrans District Biologist.
- After construction, all revegetated areas will be prohibited from the use of species listed in the Cal-IPC California Invasive Plant Inventory that have a high or moderate rating.

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Scientific name Common name	Status	General Habitat Description	Habitat Present (HP) / Absent (A)	Rationale
Abronia villosa var. *aurita* Chaparral sand-verbena	CNPS: List 1B.1	Annual herb. Occurs in coastal scrub and chaparral on sandy soils. From 260 to 5,250 ft in elevation. Flowering season is January – September.	A	Species distribution is restricted by substantive habitat requirements, which do not occur or are negligible within the BSA, and no further survey or study is obligatory to determine likely presence or absence of this species.
Aphanisma blitoides Aphanisma	CNPS: List 1B.2	Annual herb. Occurs in coastal scrub, coastal dunes, and coastal bluff scrub in sandy or clay soils. Up to 1,000 ft in elevation. Flowering season is March – June.	A	Species distribution is restricted by substantive habitat requirements, which do not occur or are negligible within the BSA, and no further survey or study is obligatory to determine likely presence or absence of this species.
Astragalus pycnostachyus var. *lanosissimus* Ventura marsh milk-vetch	FE SE CNPS: List 1B.1	Perennial herb. Occurs in coastal dunes and edges of coastal salt marshes and swamps. Up to 115 ft in elevation. Flowering season is June – October.	A	Species distribution is restricted by substantive habitat requirements, which do not occur or are negligible within the BSA, and no further survey or study is obligatory to determine likely presence or absence of this species.
Atriplex coulteri Coulter's saltbush	CNPS: List 1B.2	Perennial herb. Occurs in coastal bluff scrub, coastal dunes, coastal scrub, and valley and foothill grassland on alkaline or clay soils. From 30 to 1,510 ft in elevation. Flowering season is March – October.	A	Species distribution is restricted by substantive habitat requirements, which do not occur or are negligible within the BSA, and no further survey or study is obligatory to determine likely presence or absence of this species.
Atriplex pacifica South coast saltscale	CNPS: List 1B.2	Annual herb. Occurs in chenopod scrub, coastal dunes, coastal scrub, coastal bluff scrub, and playas, often in alkali soils. Up to 1,640 ft in elevation. Flowering season is March – October.	A	Species distribution is restricted by substantive habitat requirements, which do not occur or are negligible within the BSA, and no further survey or study is obligatory to determine likely presence or absence of this species.
Atriplex parishii Parish's brittlescale	CNPS: List 1B.1	Annual herb. Occurs in chenopod scrub, vernal pools, and playas, usually, on drying alkali flay with fine soils. From 10 to 6,230 ft in elevation. Flowering season is June – October.	A	Species distribution is restricted by substantive habitat requirements, which do not occur or are negligible within the BSA, and no further survey or study is obligatory to determine likely presence or absence of this species.

Scientific name Common name	Status	General Habitat Description	Habitat Present (HP) / Absent (A)	Rationale
Atriplex serenana var. *davidsonii* Davidson's saltscale	CNPS: List 1B.2	Annual herb. Occurs in coastal bluff scrub and coastal scrub on alkaline soils. From 10 to 820 ft in elevation. Flowering season is April – October.	A	Species distribution is restricted by substantive habitat requirements, which do not occur or are negligible within the BSA, and no further survey or study is obligatory to determine likely presence or absence of this species.
Calystegia sepium ssp. *binghamiae* Santa Barbara morning-glory	CNPS: List 1A	Rhizomatous perennial herb. Occurs in coastal marshes and swamps. Up to 100 ft in elevation. Flowering season is April – May.	A	Species distribution is restricted by substantive habitat requirements, which do not occur or are negligible within the BSA, and no further survey or study is obligatory to determine likely presence or absence of this species.
Centromadia parryi ssp. *australis* Southern tarplant	CNPS: List 1B.1	Annual herb. Occurs in vernal pools, margins of marshes and swamps, and vernally mesic valley and foothill grasslands, sometimes with saltgrass on alkaline soils. Up to 1,400 ft in elevation. Flowering season is May – November.	HP	Species distribution is restricted by substantive habitat requirements, which occur within the BSA, and further survey or study may be necessary to determine likely presence or absence of this species. Not observed during botanical surveys conducted during the appropriate blooming period for this plant in 2010.
Cordylanthus maritimus ssp. *maritimus* Salt marsh bird's-beak	FE SE CNPS: List 1B.2	Hemiparasitic annual herb. Occurs in coastal dunes and coastal salt marshes and swamps. Up to 100 ft in elevation. Flowering season is May – October.	A	Species distribution is restricted by substantive habitat requirements, which do not occur or are negligible within the BSA, and no further survey or study is obligatory to determine likely presence or absence of this species.
Dudleya multicaulis Many-stemmed dudleya	CNPS: List 1B.2	Perennial herb. Occurs in coastal scrub, chaparral, and valley and foothill grassland, usually on clay soils or grassy slopes. Up to 2,590 ft in elevation. Flowering season is April – July.	A	Species distribution is restricted by substantive habitat requirements, which do not occur or are negligible within the BSA, and no further survey or study is obligatory to determine likely presence or absence of this species.
Dudleya stolonifera Laguna Beach dudleya	FT ST CNPS: List 1B.1	Stoloniferous perennial herb. Occurs in coastal scrub, chaparral, cismontane woodland, and valley and foothill grassland on rocky soils. Endemic to Orange County. From 30 to 850 ft in elevation. Flowering season is May – July.	A	Species distribution is restricted by substantive habitat requirements, which do not occur or are negligible within the BSA, and no further survey or study is obligatory to determine likely presence or absence of this species.

Scientific name Common name	Status	General Habitat Description	Habitat Present (HP) / Absent (A)	Rationale
Helianthus nuttallii ssp. *parishii* Los Angeles sunflower	CNPS: List 1A	Rhizomatous perennial herb. Occurs in coastal salt and freshwater marshes and swamps. From 15 to 5,500 ft in elevation. Flowering season is August – October.	A	Species distribution is restricted by substantive habitat requirements, which do not occur or are negligible within the BSA, and no further survey or study is obligatory to determine likely presence or absence of this species.
Lasthenia glabrata ssp. *coulteri* Coulter's goldfields	CNPS: List 1B.1	Annual herb. Occurs in coastal salt marshes and swamps, valley and foothill grasslands, playas, sinks, and vernal pools. Up to 4,590 ft in elevation. Flowering season is February – June.	A	Species distribution is restricted by substantive habitat requirements, which do not occur or are negligible within the BSA, and no further survey or study is obligatory to determine likely presence or absence of this species.
Nama stenocarpum Mud nama	CNPS: List 2.2	Annual to perennial herb. Occurs in marshes and swamps, and along lake margins and riverbanks, and intermittently wet areas. From 15 to 1,640 ft in elevation. Flowering season is January – July.	A	Species distribution is restricted by substantive habitat requirements, which do not occur or are negligible within the BSA, and no further survey or study is obligatory to determine likely presence or absence of this species.
Nasturtium gambelii Gambel's water cress	FE ST CNPS: List 1B.1	Rhizomatous perennial herb. Occurs in freshwater or brackish marshes and swamps. From 15 to 1,085 ft in elevation. Flowering season is April – September.	A	Species distribution is restricted by substantive habitat requirements, which do not occur or are negligible within the BSA, and no further survey or study is obligatory to determine likely presence or absence of this species.
Navarretia prostrata Prostrate navarretia	CNPS: List 1B.1	Annual herb. Occurs in coastal scrub, vernal pools, and valley and foothill grasslands in mesic soils. From 50 to 2,300 ft in elevation. Flowering season is April – July.	A	Species distribution is restricted by substantive habitat requirements, which do not occur or are negligible within the BSA, and no further survey or study is obligatory to determine likely presence or absence of this species.
Nemacaulis denudata var. *denudata* Coast woolly-heads	CNPS: List 1B.2	Annual herb. Occurs in coastal dunes. Up to 330 ft in elevation. Flowering season is April – September.	A	Species distribution is restricted by substantive habitat requirements, which do not occur or are negligible within the BSA, and no further survey or study is obligatory to determine likely presence or absence of this species.
Orcuttia californica California Orcutt grass	FE SE CNPS: List 1B.1	Annual herb. Occurs in vernal pools. From 50 to 2,165 ft in elevation. Flowering season is April – August.	A	Species distribution is restricted by substantive habitat requirements, which do not occur or are negligible within the BSA, and no further survey or study is obligatory to determine likely presence or absence of this species.

Scientific name Common name	Status	General Habitat Description	Habitat Present (HP) / Absent (A)	Rationale
Phacelia stellaris Brand's phacelia	CNPS: List 1B.1	Annual herb. Occurs in coastal dunes and scrub. From 15 to 4,970 ft in elevation. Flowering season is March – June.	A	Species distribution is restricted by substantive habitat requirements, which do not occur or are negligible within the BSA, and no further survey or study is obligatory to determine likely presence or absence of this species.
Sagittaria sanfordii Sanford's arrowhead	CNPS: List 1B.2	Rhizomatous perennial herb. Occurs in shallow freshwater swamps and marshes. Up to 2,000 ft in elevation. Flowering season is May – October.	A	Species distribution is restricted by substantive habitat requirements, which do not occur or are negligible within the BSA, and no further survey or study is obligatory to determine likely presence or absence of this species.
Sidalcea neomexicana Salt spring checkerbloom	CNPS: List 2.2	Perennial herb. Occurs in coastal scrub, chaparral, lower montane coniferous forest, brackish marshes, Mohavean desert scrub, and playas on alkaline, mesic soils. Up to 5,020 ft in elevation. Flowering season is March – June.	A	Species distribution is restricted by substantive habitat requirements, which do not occur or are negligible within the BSA, and no further survey or study is obligatory to determine likely presence or absence of this species.
Suaeda esteroa Estuary seablite	CNPS: List 1B.2	Perennial herb. Occurs in coastal salt marshes and swamps. Up to 15 ft in elevation. Flowering season is May – October.	A	Species distribution is restricted by substantive habitat requirements, which do not occur or are negligible within the BSA, and no further survey or study is obligatory to determine likely presence or absence of this species.
Symphyotrichum defoliatum San Bernardino aster	CNPS: List 1B.2	Rhizomatous perennial herb. Occurs in meadows and seeps, marshes and swamps, coastal scrub, cismontane woodland, lower montane coniferous forest, and valley and foothill grasslands, often in disturbed places. Up to 6,690 ft in elevation. Flowering season is July – November.	A	Species distribution is restricted by substantive habitat requirements, which do not occur or are negligible within the BSA, and no further survey or study is obligatory to determine likely presence or absence of this species.
STATUS CODES				
FEDERAL				
Federal Endangered Species Act				
FE	Federal Endangered			
FT	Federal Threatened			
STATE				
California Endangered Species Act				
SE	State Endangered			
ST	State Threatened			
California Native Plant Society (CNPS) Classifications				

Scientific name Common name	Status	General Habitat Description	Habitat Present (HP) / Absent (A)	Rationale
1A	Plants Presumed Extinct in California			
1B	Plants Rare, Threatened, or Endangered in California and Elsewhere			
2	Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere			
3	Plants About Which We Need More Information - A Review List			
4	Plants of Limited Distribution - A Watch List			
	Threat Code			
0.1	Seriously threatened in California (high degree/immediacy of threat			
0.2	Fairly threatened in California (moderate degree/immediacy of threat)			
0.3	Not threatened in California (low degree/immediacy of threats or no current threats known)			

Scientific Name Common Name	Status	General Habitat Description	Habitat Present (HP) / Absent (A)	Rationale
INSECTS				
Branchinecta lynchi Vernal pool fairy shrimp	FT	Endemic to the grasslands of the Central Valley, central coast mountains, and south coast mountains in vernal pools.	A	Species distribution is restricted by substantive habitat requirements, which do not occur or are negligible within the BSA, and no further survey or study is obligatory to determine likely presence or absence of this species.
Cicindela gabbii Western tidal-flat tiger beetle	--	Inhabits estuaries and mudflats in coastal southern California, usually in dark-colored mud in lower zones, and occasionally on dry saline flats in estuaries.	A	Species distribution is restricted by substantive habitat requirements, which do not occur or are negligible within the BSA, and no further survey or study is obligatory to determine likely presence or absence of this species.
Cicindela hirticollis gravida Sandy beach tiger beetle	--	Inhabits areas adjacent to nonbrackish water along the coast of California from San Francisco Bay to northern Mexico. Inhabits clean, dry, light-colored sand in the upper zone.	A	Species distribution is restricted by substantive habitat requirements, which do not occur or are negligible within the BSA, and no further survey or study is obligatory to determine likely presence or absence of this species.
Cicindela latesignata latesignata Western beach tiger beetle	--	Inhabits mudflats in beaches in coastal southern California.	A	Species distribution is restricted by substantive habitat requirements, which do not occur or are negligible within the BSA, and no further survey or study is obligatory to determine likely presence or absence of this species.
Cicindela senilis frosti Senile tiger beetle	--	Inhabits marine shoreline from central California coast south to salt marshes of San Diego. Also found at Lake Elsinore. Found on dark-colored mud in lower zone, and occasionally on dried salt pans in the upper zone.	A	Species distribution is restricted by substantive habitat requirements, which do not occur or are negligible within the BSA, and no further survey or study is obligatory to determine likely presence or absence of this species.
Coelus globosus Globose dune beetle	--	Inhabitant of coastal sand dune habitat, from Bodega Head in Sonoma County south to Ensenada, Mexico. Inhabits foredunes and sand hummocks; it burrows beneath the sand surface and is most common beneath dune vegetation.	A	Species distribution is restricted by substantive habitat requirements, which do not occur or are negligible within the BSA, and no further survey or study is obligatory to determine likely presence or absence of this species.
Danaus plexippus Monarch butterfly	--	Winter roost sites extend along the coast from northern Mendocino to Baja California among wind-protected tree groves.	A	Species distribution is restricted by substantive habitat requirements, which do not occur or are negligible within the BSA, and no further survey or study is obligatory to determine likely presence or absence of this species.
Panoquina errans Wandering skipper	--	Inhabits southern California coastal salt marshes. Requires moist saltgrass for larval development.	A	Species distribution is restricted by substantive habitat requirements, which do not occur or are negligible within the BSA, and no further survey or study is obligatory to determine likely presence or absence of this species.

Scientific Name Common Name	Status	General Habitat Description	Habitat Present (HP) / Absent (A)	Rationale
Trigonoscuta dorothea Dorothy's El Segundo Dune weevil	--	Inhabits coastal sand dunes in Los Angeles County.	A	Species distribution is restricted by substantive habitat requirements, which do not occur or are negligible within the BSA, and no further survey or study is obligatory to determine likely presence or absence of this species.
Tryonia imitator Mimic tryonia (=California brackishwater snail)	--	Inhabits coastal lagoons and salt marshes, from Sonoma County south to San Diego county. Lives subtidally, and inhabits a variety of sediment types; able to withstand a wide range of salinity.	A	Species distribution is restricted by substantive habitat requirements, which do not occur or are negligible within the BSA, and no further survey or study is obligatory to determine likely presence or absence of this species.
REPTILES				
Actinemys marmorata pallida Southwestern pond turtle	SSC	Occurs in a variety of habitats including woodland, grassland, and open forest. They are thoroughly aquatic, existing in good quality ponds, marshes, rivers, streams, and irrigation ditches that have rocky or muddy bottoms. They require basking sites such as partially submerged logs, vegetation mats, or open mud banks.	A	Species distribution is restricted by substantive habitat requirements, which do not occur or are negligible within the BSA, and no further survey or study is obligatory to determine likely presence or absence of this species.
Aspidoscelis hyperythra Orange-throated whiptail	SSC	Inhabits low-elevation coastal scrub, chaparral, and valley hardwood habitats. Prefers washes and other sandy areas with patches of brush and rocks. Perennial plants necessary for its major food (i.e., termites).	A	Species distribution is restricted by substantive habitat requirements, which do not occur or are negligible within the BSA, and no further survey or study is obligatory to determine likely presence or absence of this species.
Chelonias Mydas Green sea turtle	FT	Generally found in fairly shallow waters (except when migrating) inside reefs, bays, and inlets. The turtles are attracted to lagoons and shoals with an abundance of marine grass and algae. Open beaches with a sloping platform and minimal disturbance are required for nesting.	A	Species distribution is restricted by substantive habitat requirements, which do not occur or are negligible within the BSA, and no further survey or study is obligatory to determine likely presence or absence of this species.
Phrynosoma coronatum blainvillii San Diego horned lizard	SSC	Occurs in coastal sage scrub, open chaparral, riparian woodland, and annual grassland habitats that support adequate prey species.	A	Species distribution is restricted by substantive habitat requirements, which do not occur or are negligible within the BSA, and no further survey or study is obligatory to determine likely presence or absence of this species.
BIRDS				
Agelaius tricolor Tri-colored Blackbird	SSC	Highly colonial. Most numerous in Central Valley, largely endemic to California. Requires open water, protected nesting substrate, and foraging area with insect prey within a few miles of the colony.	A	Species distribution is restricted by substantive habitat requirements, which do not occur or are negligible within the BSA, and no further survey or study is obligatory to determine likely presence or absence of this species.

Scientific Name Common Name	Status	General Habitat Description	Habitat Present (HP) / Absent (A)	Rationale
Athene cunicularia Burrowing Owl	SSC	Utilizes burrows in open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably the California ground squirrel.	HP	Suitable habitat for this species is present in the BSA. Not observed during owl surveys conducted in 2010.
Buteo regalis Ferruginous Hawk	--	Occurs in timber belts in barren, treeless plains and grassy prairies; cliffs and rocky outcrops.	A	Species distribution is restricted by substantive habitat requirements, which do not occur or are negligible within the BSA, and no further survey or study is obligatory to determine likely presence or absence of this species.
Charadrius alexandrinus nivosus Western Snowy Plover	FT	(Nesting). Occurs on sandy beaches, salt pond levees, and shores of large alkali lakes. Requires sandy, gravelly, or friable soils for nesting. The federal listing applies only to the Pacific coastal population.	A	Species distribution is restricted by substantive habitat requirements, which do not occur or are negligible within the BSA, and no further survey or study is obligatory to determine likely presence or absence of this species.
Coccyzus americanus occidentalis Western Yellow-billed Cuckoo	SE	Riparian forest nester, along the broad, lower flood-bottoms of larger river systems. Also prefers thickets of willow mixed with cottonwood.	A	Species distribution is restricted by substantive habitat requirements, which do not occur or are negligible within the BSA, and no further survey or study is obligatory to determine likely presence or absence of this species.
Laterallus jamaicensis coturniculus California Black Rail	ST	Inhabits saltwater, freshwater, and brackish marshes bordering larger bays at low elevations	A	Species distribution is restricted by substantive habitat requirements, which do not occur or are negligible within the BSA, and no further survey or study is obligatory to determine likely presence or absence of this species.
Pandion haliaetus Osprey	--	Inhabits ocean shores, bays, freshwater lakes, and larger streams. Builds large nests in tree-tops within 15 mi of abundant food sources.	A	Species distribution is restricted by substantive habitat requirements, which do not occur or are negligible within the BSA, and no further survey or study is obligatory to determine likely presence or absence of this species.
Passerculus sandwichensis belingi Belding's Savannah Sparrow	SE	Occurs from Santa Barbara to San Diego County. Nests in pickleweed on and around the margins of tidal flats.	A	Species distribution is restricted by substantive habitat requirements, which do not occur or are negligible within the BSA, and no further survey or study is obligatory to determine likely presence or absence of this species.
Polioptila californica californica Coastal California Gnatcatcher	FT SSC	Obligate, permanent resident of coastal sage scrub below 2,500 ft in southern California.	A	Species distribution is restricted by substantive habitat requirements, which do not occur or are negligible within the BSA, and no further survey or study is obligatory to determine likely presence or absence of this species.

Scientific Name Common Name	Status	General Habitat Description	Habitat Present (HP) / Absent (A)	Rationale
Rallus longirostris levipes Light-footed Clapper Rail	FE SE	Inhabits salt marshes traversed by tidal sloughs, where cordgrass and pickleweed are the dominant vegetation.	A	Species distribution is restricted by substantive habitat requirements, which do not occur or are negligible within the BSA, and no further survey or study is obligatory to determine likely presence or absence of this species.
Rynchops niger Black Skimmer	SSC	Nests on gravel bars, low islets, and sandy beaches in unvegetated sites. Nesting colonies usually consist of less than 200 pairs.	A	Species distribution is restricted by substantive habitat requirements, which do not occur or are negligible within the BSA, and no further survey or study is obligatory to determine likely presence or absence of this species.
Sternula antillarum browni California Least Tern	FE SE	Nests along the coast on bare or sparsely vegetated, flat substrates such as sandy beaches, alkali flats, landfills, or paved areas.	A	Species distribution is restricted by substantive habitat requirements, which do not occur or are negligible within the BSA, and no further survey or study is obligatory to determine likely presence or absence of this species.
Vireo bellii pusillus Least Bell's Vireo	FE SE	Occurs in low riparian growth in vicinity of water, or in dry river bottoms, below 2,000 ft. Nests placed along margins of bushes or on twigs projecting into pathways, usually willow, mule fat, and mesquite.	A	Species distribution is restricted by substantive habitat requirements, which do not occur or are negligible within the BSA, and no further survey or study is obligatory to determine likely presence or absence of this species.
MAMMALS				
Eumops perotis californicus Western mastiff bat	SSC	Inhabits semi-arid habitats including coastal sage scrub, grassland, and chaparral communities with rocky crevices and hollow trees.	A	Species distribution is restricted by substantive habitat requirements, which do not occur or are negligible within the BSA, and no further survey or study is obligatory to determine likely presence or absence of this species.
Lasionycteris noctivagans Silver-haired bat	--	Inhabits primarily coastal and montane forest, feeding over streams, ponds, and open brush areas. Roosts in hollow trees, loose bark, and occasionally under rocks. Requires water.	A	Species distribution is restricted by substantive habitat requirements, which do not occur or are negligible within the BSA, and no further survey or study is obligatory to determine likely presence or absence of this species.
Lasiurus cinereus Hoary bat	--	Found in open habitats or habit mosaics, with access to trees for cover and open areas or habitat edges for feeding. Roosts in dense foliage of medium to large trees. Feeds primarily on moths. Requires water.	A	Species distribution is restricted by substantive habitat requirements, which do not occur or are negligible within the BSA, and no further survey or study is obligatory to determine likely presence or absence of this species.
Lasiurus xanthinus Western yellow bat	SSC	Associated with dry, thorny vegetation and found in desert regions of the southwestern United States. They show a particular association with palms and are known to occur in many palm oases but are also believed to be expanding their range with the increased usage of ornamental palms in landscaping.	A	Species distribution is restricted by substantive habitat requirements, which do not occur or are negligible within the BSA, and no further survey or study is obligatory to determine likely presence or absence of this species.

Scientific Name Common Name	Status	General Habitat Description	Habitat Present (HP) / Absent (A)	Rationale
Microtus californicus stephensi South coast marsh vole	SSC	Inhabits tidal marshes of Los Angeles, Orange, and southern Ventura counties.	A	Species distribution is restricted by substantive habitat requirements, which do not occur or are negligible within the BSA, and no further survey or study is obligatory to determine likely presence or absence of this species.
Nyctinomops macrotis Big free-tailed bat	SSC	Inhabitant of rugged, rocky habitats in arid landscapes. It has been found in a variety of plant associations, including desert shrub, woodlands, and evergreen forests.	A	Species distribution is restricted by substantive habitat requirements, which do not occur or are negligible within the BSA, and no further survey or study is obligatory to determine likely presence or absence of this species.
Sorex ornatus salicornicus Southern California saltmarsh shrew	SSC	Inhabits coastal marshes in Los Angeles, Orange, and Ventura counties. Requires dense vegetation and woody debris for cover.	A	Species distribution is restricted by substantive habitat requirements, which do not occur or are negligible within the BSA, and no further survey or study is obligatory to determine likely presence or absence of this species.
Taxidea taxus American badger	SSC	Occurs most often in the drier, open stages of most herbaceous, shrub, and forest habitats, with uncultivated, friable soils for excavating burrows. Requires a sufficient food base, often rodents.	A	Species distribution is restricted by substantive habitat requirements, which do not occur or are negligible within the BSA, and no further survey or study is obligatory to determine likely presence or absence of this species.

STATUS CODES	
FEDERAL	
Federal Endangered Species Act	
FE	Federal Endangered
FT	Federal Threatened
STATE	
California Endangered Species Act	
SE	State Endangered
ST	State Threatened
CDFG Code	
SSC	California Species of Special Concern
--	Other

Scientific Name	Common Name
Acacia sp.*	Acacia
*Acacia redolens**	Prostrate acacia
Acer negundo var. *californicum*	California box-elder
Acer sp.*	Maple
*Agapanthus praecox**	Lily-of-the-Nile
*Ailanthus altissima**	Tree of heaven
*Albizia julibrissin**	Silk tree
Amaranthus albus	Tumbling pigweed
Amaranthus blitoides	Prostrate amaranth
Ambrosia acanthicarpa	Annual bur-sage
*Anagallis arvensis**	Scarlet pimpernel
*Aptenia cordifolia**	Baby sun rose
Arctotis sp.*	African daisy
Arecastrum sp.*	Fanpalm
*Arundo donax**	Giant reed
*Asparagus plumosa**	Asparagus fern
Atriplex lentiformis	Quail brush
*Atriplex semibaccata**	Australian saltbush
*Avena barbata**	Slender wild oat
Avena fatua	Wild oat
Baccharis pilularis	Coyote brush
Baccharis salicifolia	Mule fat
*Bougainvillea spectabilis**	Bougainvillea
*Brassica nigra**	Black mustard
*Bromus diandrus**	Ripgut grass
*Bromus madritensis**	Foxtail chess
*Buxus microphylla**	Japanese box
Callistemon sp.*	Bottlebrush tree
Camellia sp.*	Camellia
*Capsella bursa-pastoris**	Shepherd's-purse
*Carduus pycnocephalus**	Italian thistle
*Carissa macrocarpa**	Natal plum
*Carpobrotus chilensis**	Sea-fig
*Carpobrotus edulis**	Hottentot-fig
*Catharanthus roseus**	Madagascar periwinkle
*Centaurea melitensis**	Tocalote
Chamaesyce sp.	Spurge
*Chamomilla suaveolens**	Pineapple weed
*Chenopodium album**	Lamb's quarters
*Chenopodium murale**	Nettle-leaved goosefoot
*Chrysanthemum coronarium**	Garland daisy
*Cirsium vulgare**	Bull thistle

Scientific Name	Common Name
*Conium maculatum**	Poison hemlock
*Convolvulus arvensis**	Bindweed
*Conyza bonariensis**	Flax-leaved horseweed
Conyza canadensis	Horseweed
Cortaderia selloana	Pampass grass
*Cupaniopsis anacardioides**	Carrotwood
*Cupressus sempervirens**	Italian cypress
Cupressus sp.	Cypress
Cuscuta sp.	Dodder
*Cycas revoluta**	Japanese sago palm
*Cynodon dactylon**	Bermuda grass
Cyperus eragrostis	Umbrella sedge
Datura wrightii	Jimson weed
*Dietes iridioides**	Fortnight lily
Disticlis spicata	Salt grass
*Echinocloa crus-galli**	Barnyard grass
Epilobium ciliatum	California cottonweed
Eremocarpus setigerus	Dove weed
*Erodium botrys**	Broad-lobed filaree
*Erodium brachycarpum**	Long-beaked filaree
*Erodium cicutarium**	Red-stemmed filaree
Erythrina sp.*	Coral tree
*Eucalyptus globulus**	Blue gum
*Eucalyptus polyanthemos**	Silver dollar gum
Eucalyptus spp.*	Gum tree
*Ficus benjamina**	Weeping fig
*Ficus macrophylla**	Bay fig
*Ficus pumilla**	Creeping fig
*Foeniculum vulgare**	Fennel
Fraxinus sp.	Ash
Gazania sp.*	African daisy
Gnaphalium sp.	Cudweed
*Grevillea robusta**	Silk oak
*Hedera helix**	English ivy
Helianthus annuus	Common sunflower
Heliotropium curassavicum	Salt heliotrope
Hemerocallis sp.*	Day lily
Heterotheca grandiflora	Telegraph weed
Heterotheca sessiliflora	Hairy golden-aster
Hibiscus sp.*	Ornamental hibiscus
*Hirschfeldia incana**	Short-podded mustard
*Hordeum murinum**	Glaucous foxtail barley
Impatiens sp.*	Impatiens
*Ipomoea purpurea**	Common morning-glory

Scientific Name	Common Name
*Jacaranda mimosifolia**	Jacaranda
Juniperus sp.*	Juniper
*Koelreuteria paniculata**	Golden rain tree
*Lactuca serriola**	Prickly lettuce
*Lagerstroemia indica**	Crepe myrtle
*Lampranthus spectabilis**	Trailing iceplant
*Lantana camara**	Common lantana
*Lantana montevidensis**	Trailing lantana
*Lavandula stoechas**	French lavender
Lepidium sp.	Peppergrass
Leptochloa uninervia	Mexican sprangletop
*Ligustrum sinense**	Chinese privet
Ligustrum sp.*	Privet
*Liquidambar styraciflua**	Sweet gum
Liriope sp.*	Liriope
*Lobularia maritima**	Sweet-alyssum
*Lolium perenne**	Perennial ryegrass
Lotus purshianus	Spanish clover
*Magnolia grandiflora**	Southern magnolia
Malus sp.*	Apple
*Malva parviflora**	Cheeseweed
Marah macrocarpus	Wild cucumber
*Marrubium vulgare**	Horehound
*Medicago lupulina**	Black medick
*Medicago polymorpha**	Bur clover
Melaleuca sp.*	Paperbark
*Melilotus alba**	Sweetclover
*Myoporum laetum**	Myoporum
*Myoporum parvifolium**	Creeping boobialla
*Nandina domestica**	Sacred bamboo
*Nerium oleander**	Oleander
*Nicotiana glauca**	Tree tobacco
Oenothera sp.	Evening primrose
*Olea europaea**	Olive
Osteospermum sp.*	African daisy
*Oxalis pes-caprae**	Bermuda buttercup
*Parthenocissus tricuspidata**	Boston ivy
Pelargonium sp.*	Garden geranium
*Pennisetum setaceum**	Fountain grass
*Phoenix canariensis**	Canary Island date palm
*Phoenix dactylifera**	Date palm
Phormium sp.*	New Zealand flax
*Picris echioides**	Bristly ox-tongue
*Pinus canariensis**	Canary Island pine

Scientific Name	Common Name
*Pinus halepensis**	Aleppo pine
Pinus spp.*	Pine
Pittosporum sp.*	Pittosporum
*Plantago lanceolata**	English plantain
Platanus racemosa	Western sycamore
*Plumbago auriculata**	Cape plumbago
*Podocarpus macrophyllus**	Plum pine
*Polypogon monspeliensis**	Annual beard grass
Populus fremontii	Fremont cottonwood
*Protoasparagus plumosus**	Asparagus fern
*Pulicaria paludosa**	Spanish sunflower
Pyracantha sp.*	Firethorn
Pyrus sp.*	Ornamental pear
*Rhaphiolepis umbellata**	Raphiolepis
*Ricinus communis**	Castor-bean
Rosa sp.	Ornamental rose
*Rosmarinus officinalis**	Rosemary
*Rumex crispus**	Curly dock
Salix exigua	Narrow-leaved willow
Salix lasiolepis	Arroyo willow
*Salsola tragus**	Russian thistle
*Schinus molle**	Peruvian pepper tree
*Schinus terebinthifolius**	Brazilian pepper tree
Scirpus californicus	California bulrush
*Senecio vulgaris**	Common groundsel
*Silybum marianum**	Milk thistle
*Sisymbrium irio**	London rocket
*Sisymbrium orientale**	Oriental mustard
*Sonchus asper**	Prickly sow thistle
*Sonchus oleraceus**	Common sow thistle
Strelitzia sp.*	Bird of paradise
*Tecomaria capensis**	Cape honeysuckle
*Thunbergia grandiflora**	Sky flower
*Trachelospermum jasminoides**	Star jasmine
*Tropaeolum majus**	Garden nasturtium
*Tuhlbaghia violacea**	Society garlic
Typha domengensis	Southern cattail
Typha latifolia	Broad-leaved cattail
*Ulmus parvifolia**	Chinese elm
*Vinca major**	Greater periwinkle
Vulpia sp.	Fescue
*Washingtonia robusta**	Mexican fan palm
*Yucca elephantipes**	Giant yucca

*Non-Native

Scientific Name	Common Name
INSECTS	
Pieridae	Whites and Sulphers
Pieris rapae	Cabbage white
Nymphalidae	Brush-footed Butterflies
Vanessa cardui	Painted lady
Nymphalis antiopa	Mourning cloak
REPTILES	
Iguanidae	Iguanid Lizards
Sceloporus occidentalis	Western fence lizard
BIRDS	
Cathartidae	New World Vultures
Cathartes aura	Turkey Vulture
Accipitridae	Hawks, Kites, and Eagles
Buteo lineatus	Red-shouldered Hawk
Columba fasciata	Band-tailed Pigeon
Columba livia	Rock Pigeon
Zenaida macroura	Mourning Dove
Hirundinidae	Swallows
Stelgidopteryx serripennis	Northern Rough-winged Swallow
Corvidae	Jays and Crows
Corvus brachyrhynchos	American Crow
Mimidae	Mockingbirds and Thrashers
Mimus polyglottos	Northern Mockingbird
Sturnidae	Starlings
Sturnus vulgaris	European Starling
Euphagus cyanocephalus	Brewer's Blackbird
Fringillidae	Finches
Carpodacus mexicanus	House Finch
Passeridae	Old World Sparrows
Passer domesticus	House Sparrow
MAMMALS	
Didelphidae	New World Opossums
Didelphis virginiana	Virginia opossum
Sciuridae	Squirrels
Spermophilus beecheyi	California ground squirrel
Procyonidae	Raccoons
Procyon lotor	Raccoon

Appendix D. Jurisdictional Delineation

(The Jurisdictional Delineation is deemed preliminary until verified by USACE and a jurisdictional determination is issued.)

JURISDICTIONAL DELINEATION REPORT

San Diego Freeway (I-405) Improvement Project
SR-73 to I-605

Orange and Los Angeles Counties

12-ORA-405 PM 9.3/24.2 / 07-LA-405 PM 0.0/1.2
12-ORA-22 PM R0.7/R3.8 / 12-ORA-22 PM R0.5/R0.7
12-ORA-73 PM R27.2/R27.8 / 12-ORA-605 PM 3.5/R1.6
07-LA-605 PM R0.0/R1.2

EA 0H1000
EFIS ID 1200000180

March 2012

STATE OF CALIFORNIA
Department of Transportation

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LIST OF ABBREVIATED TERMS

CFR	Code of Federal Regulations
CMP	Corrugated Metal Pipe
CPP	Corrugated Plastic Pipe
CWA	Clean Water Act
EPA	U.S. Environmental Protection Agency
FAC	Facultative
FACU	Facultative Upland
FACW	Facultative Wetland
FEMA	Federal Emergency Management Agency
GIS	Geographic Information System
GPS	Global Positioning System
HUC	Hydrological Unit Code
IWMC	California Interagency Watershed Mapping Committee
M	meter
Msl	Mean sea level
NI	No Indicator
NWS	National Weather Service
NRCS	Natural Resources Conservation Service
OBL	Obligate
OCTA	Orange County Transportation Authority
OHWM	Ordinary High Water Mark
Project	I-405 Improvement Project
Rapanos Decision	John A. Rapanos v. United States; and June Carabell v. United States Army Corps of Engineers
RHA	Rivers and Harbor Act of 1899
RPW	Relatively Permanent Water
Study Area	Proposed disturbance footprint and surrounding watersheds
SWANCC	Solid Waste Agency of Northern Cook County vs. USACE
TNW	Traditional Navigable Water
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
UPL	Upland
USGS	U.S. Geological Survey
UTM	Universal Transverse Mercator
WoUS	Waters of the United States

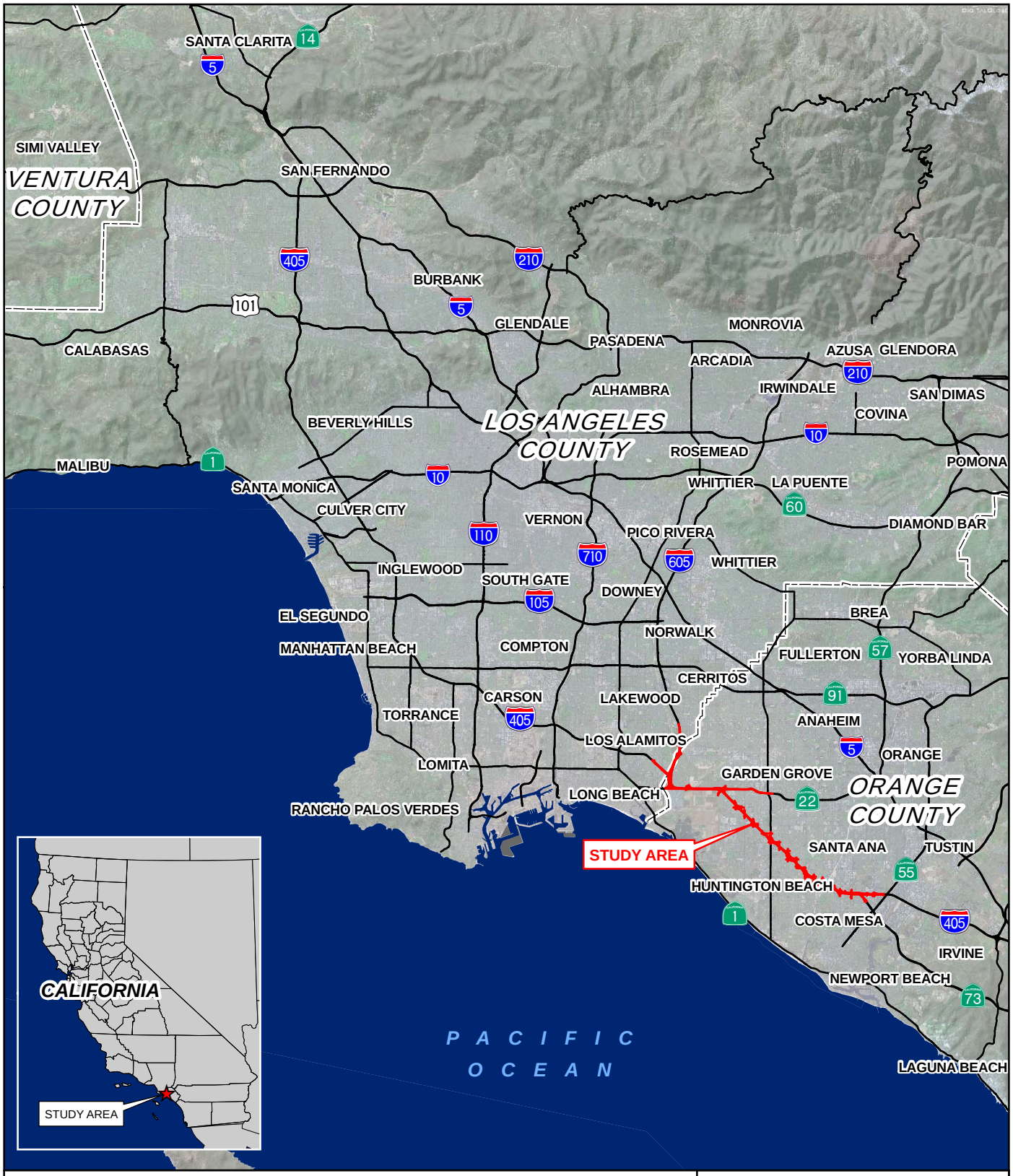
1.0 INTRODUCTION

This report summarizes the findings of: (1) U.S. Army Corps of Engineers (USACE) jurisdiction pursuant to Section 404 of the Clean Water Act (CWA) for the Interstate 405 Improvement Project (hereafter referred to as the "Project"). The Project is located within the Los Alamitos, Seal Beach, and Newport Beach, California United States Geographical Survey (USGS) 7.5-Minute Series Topographic Quadrangle Maps (USGS 1981).

The intended use of this report is to disclose and evaluate any special aquatic resource areas[1] within the Project's "study area." For the purposes of this document, the "study area" is defined as the area in which special aquatic resource area jurisdiction was assessed and quantified (Figs. 1 and 2), as well as the surrounding watersheds (Fig. 3). Jurisdiction was assessed and quantified using standard, up-to-date procedures and practices established within USACE manuals and regulatory guidance letters. Jurisdictional features included only those features subject to CWA Section 404, which consist of unvegetated or vegetated Waters of the United States (WoUS) and wetlands. This document presents a best effort at estimating jurisdictional boundaries within the study area using the most up-to-date regulations, written policies, and guidance from the USACE. Nevertheless, only the USACE can make a final determination of special aquatic resource area boundaries and jurisdiction.

[1] For the purposes of this document, special aquatic resource areas are being defined as the potential limits of: USACE jurisdiction pursuant to Section 404 of the CWA.

FIGURE 1 – REGIONAL LOCATION



N

0 5 10

Miles

FIGURE 1

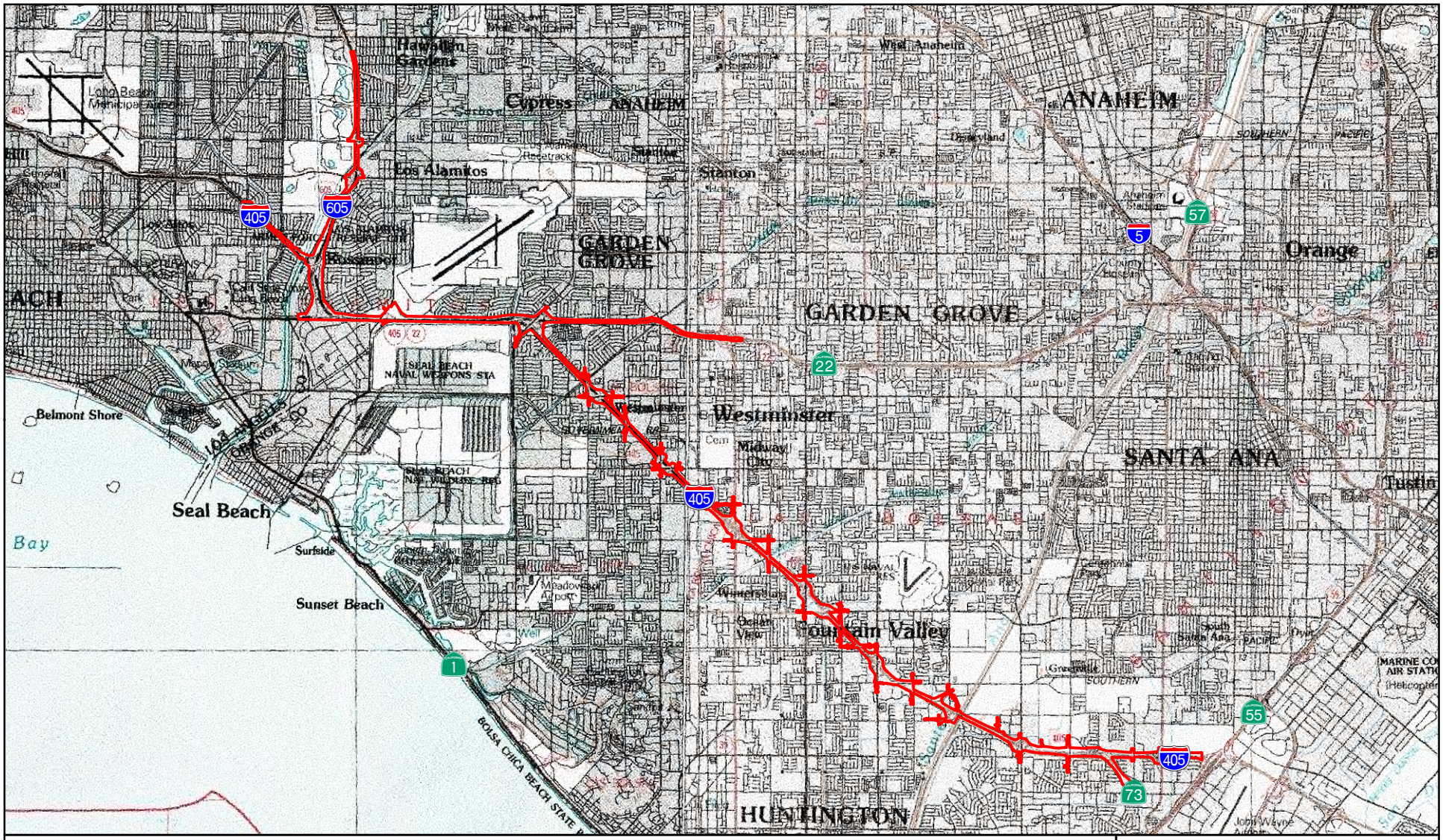
REGIONAL LOCATION

INTERSTATE 405 IMPROVEMENT PROJECT

Project No.: 29866416

Date: February 2011

FIGURE 2 –SITE VICINITY



Legend

Study Area

0 1 2
Miles

FIGURE 2

SITE VICINITY

INTERSTATE 405 IMPROVEMENT PROJECT

Project No.: 29866416

Date: February 2011

Source: USGS 1:100,000 Topographic Quadrangle Series, Long Beach (1981) and Santa Ana (1985)

FIGURE 3 – REGIONAL WATERSHEDS

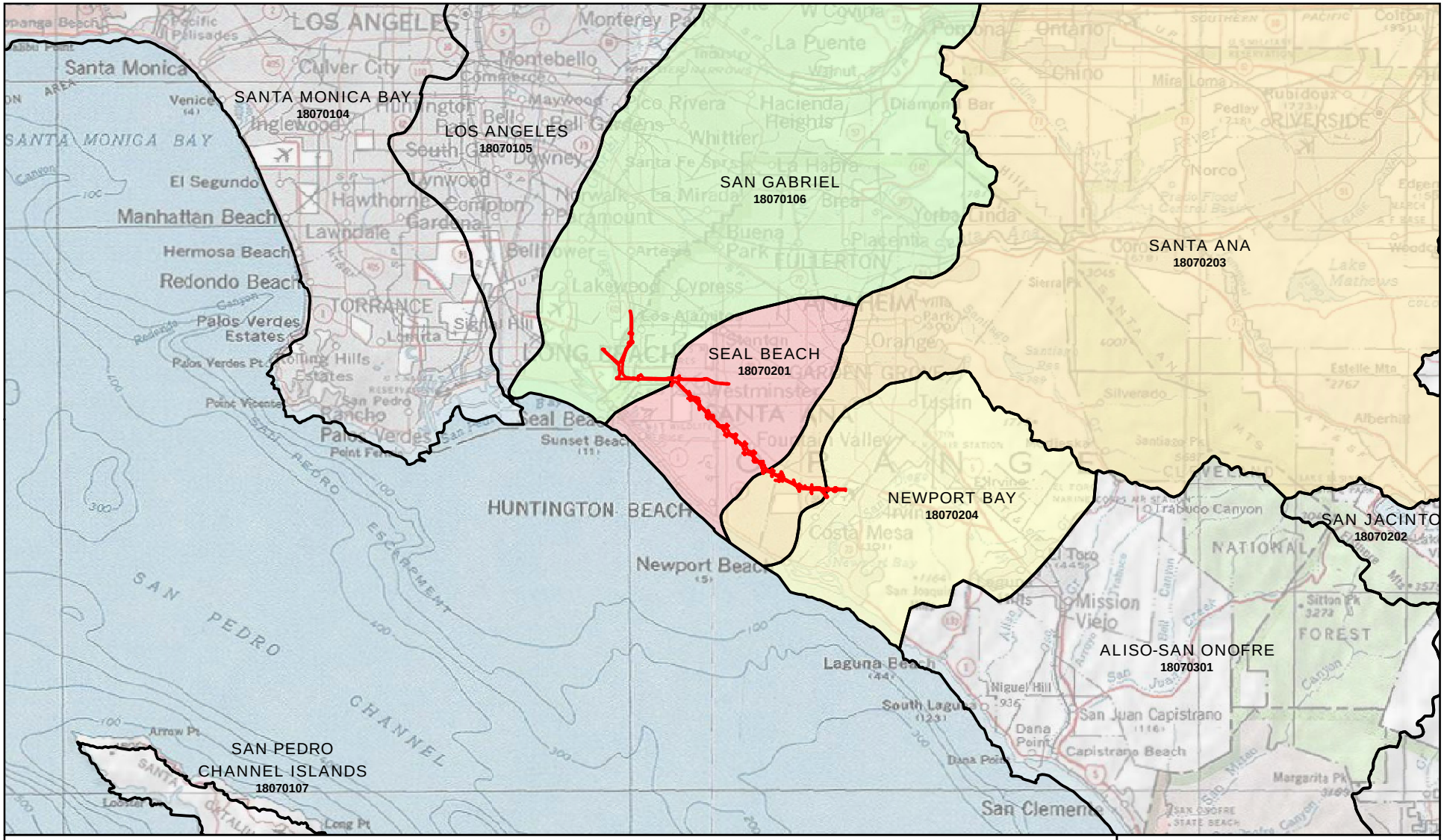


FIGURE 3
REGIONAL WATERSHEDS

INTERSTATE 405 IMPROVEMENT PROJECT

Project No.: 29866416

Date: February 2011

Source: USGS (huc250k, 1994)

1.1 SUMMARY OF USACE JURISDICTION PURSUANT TO SECTION 404 OF THE CWA

The USACE regulates discharge of dredge or fill to Waters of the United States (WoUS[2]) through Section 404 of the CWA. A total of 115 features within 4 watersheds (i.e., San Gabriel River-Coyote Creek Watershed; Anaheim Bay-Huntington Harbour; Santa Ana River; and Newport Bay) were observed within the study area, consisting of 19 potential WoUS possessing an Ordinary High Water Mark (OHWM). Of these 19 features, 17 are classified as Relatively Permanent Waters (RPW) tributary to a Traditional Navigable Water (TNW). The remaining 2 are classified as non-RPWs tributary to, and containing a significant nexus with, a TNW. Total CWA Section 404 jurisdiction within the study area is 27.9 acres - consisting of 0.9 acres of USACE-defined wetlands and 27.0 acres of unvegetated WoUS.

[2] The term WoUS is defined as follows (33 Code of Federal Regulations [CFR] 328.3): (1) All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide; (2) All interstate waters including interstate wetlands; (3) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sand flats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation, or destruction of which could affect interstate or foreign commerce including any such waters: (i) Which are or could be used by interstate or foreign travelers for recreational or other purposes; or (ii) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or (iii) Which are used or could be used for industrial purpose by industries in interstate commerce; (4) All impoundments of waters otherwise defined as WoUS; (5) Tributaries of WoUS identified above; (6) The territorial seas; and (7) Wetlands adjacent to waters (other than waters that are themselves wetlands).

2.0 STUDY AREA LOCATION AND LAND USE

2.1 PROJECT LOCATION AND LAND USE

The Project is located within the Seal Beach, Los Alamitos, and Newport Beach, California USGS 7.5-Minute Topographic Quadrangle Maps. The Project elevation ranges from approximately 8 to 56 ft above mean sea level (msl) and spans an approximate 22-mile linear length and 1,503-acres. The Universal Transverse Mercator (UTM) coordinates at the north western boundary of the study area are 399801 meters (m) east and 3743664 m north and the eastern limits are 418875 m east and 3727825 m north. The study area is mainly composed of densely-developed residential, commercial and industrial developments, public infrastructure, and open areas consisting of parks/agriculture.

3.0 REGULATORY OVERVIEW

3.1 REVIEW OF USACE JURISDICTION PURSUANT TO SECTION 404 OF THE CLEAN WATER ACT AND SECTION 10 OF THE RIVERS AND HARBORS ACT (RHA)

3.1.1 Waters of the United States

The USACE regulates the discharge of dredged and/or fill material into WoUS pursuant to Section 404 of the CWA. The USACE has authority to permit the discharge of dredged or fill material in WoUS under Section 404 of the CWA and regulates almost all work in, over, and under waters listed as "navigable waters of the U.S." Under Section 10 of the RHA, USACE jurisdiction over tidal waters of the United States extends from the ordinary low tide line seaward three nautical miles. USACE jurisdiction shoreward extends to the line on the shore reached by the mean high water. This jurisdiction extends to this edge even though portions of the water body may be extremely shallow and are thus considered "navigable in law," although they may not be navigable in fact (33 CFR 329.12).

Ordinary High Water Mark

In the absence of wetlands, the limits of USACE jurisdiction in non-tidal waters, including intermittent streams, extend to the OHWM. The OHWM is defined as "that line on the shore established by the fluctuation of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas" (33 CFR 328.3[e]). In 2005, the USACE issued a Regulatory Guidance Letter (05-05) and added the following additional indicators of an OHWM: wracking; vegetation matted down, bent, or absent; sediment sorting; leaf litter disturbed or washed away; scour; deposition; multiple observed flow events; bed and banks; water staining; and changes in plant communities (USACE 2005).

USACE-Defined Wetlands

Wetlands are defined at 33 CFR 328.3(b) as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support a dominance of vegetation typically adapted for life in saturated soil conditions." The methodology set forth in the USACE Wetland Manual generally requires that, in order to be considered a wetland, the vegetation, soils, and hydrology of an area must exhibit at least minimal hydric characteristics (EL 1987, USACE 2008a). Although the manual provides great detail in methods and allows for varying atypical or problematic conditions, a wetland should normally meet each of the following three criteria:

More than 50 % of the dominant plant species at the site must be typical of wetlands (i.e., rated as facultative or wetter in the National List of Plant Species that Occur in Wetlands [Reed 1988]);

Soils must exhibit physical and/or chemical characteristics indicative of permanent or periodic saturation (e.g., a gleyed color, with a matrix of low chroma indicating a relatively consistent fluctuation between aerobic and anaerobic conditions). Such soils, known as "hydric soils," have characteristics that indicate they were developed in conditions where soil oxygen is limited by the presence of saturated soil for long periods during the growing season; and

Hydrologic characteristics must indicate that the ground is saturated to within 12 inches of the surface for at least 5 % of the growing season during a normal rainfall year (Note: for most of low-lying southern California, 5 % of the growing season is equivalent to 18 days).

3.1.2 USACE Terminology

The following definitions are from the Rapanos Guidance Memoranda (USACE 2007b, 2008b):

Adjacent," as defined in USACE and Environmental Protection Agency (EPA) regulations, means "bordering, contiguous, or neighboring." Wetlands separated from other waters of the United States by man-made dikes or barriers, natural river berms, beach dunes, and the like are 'adjacent wetlands.' Wetlands that are not separated from a tributary by upland features, such as a berm or dike, are considered "abutting."

A "tributary," as defined in the Rapanos guidance memoranda, means a natural, man-altered, or man-made water body that carries flow directly or indirectly into traditional navigable waters. For purposes of determining "significant nexus" with a traditional navigable water, a "tributary" is the entire reach of the stream that is of the same order (i.e., from the point of confluence, where two lower order streams meet to form the tributary, downstream to the point where the tributary enters a higher order stream).

A water body is considered to have a "significant nexus" with a TNW if its flow characteristics and functions, in combination with the ecologic and hydrologic functions performed by all wetlands adjacent to such a tributary, affect the chemical, physical, and biological integrity of a downstream TNW. A TNW includes all of the "navigable waters of the United States," defined in 33 C.F.R. § 329 and by numerous decisions of the Federal courts, plus all other waters that are navigable-in-fact.

In the context of CWA jurisdiction post-Rapanos, a water body is "relatively permanent" if its flow is year-round or its flow is continuous at least "seasonally," (e.g., typically 3 months). Wetlands adjacent to a "relatively permanent" tributary are also jurisdictional if those wetlands directly abut such a tributary (USACE 2007a).

4.0 METHODS

4.1 LITERATURE REVIEW

Prior to conducting fieldwork, the following literature and databases were reviewed to determine watershed characteristics and the locations/types of aquatic resources that may be present within study area limits as follows:

- Los Alamitos, Seal Beach, and Newport Beach USGS topographic maps (USGS 1981);
- SR 22 West Orange County Connector Environmental Impact Report /Environmental Impact Statement (2003);
- 2010 color aerial photographs (DigitalGlobe 2010);
- Google Earth version 5.1.3533.1731 (November 9, 2009);
- General Soil Survey of the U.S. (USDA-NRCS 2006);
- California Interagency Watershed Mapping Committee (IWMC) 2004;
- Environmental Protection Agency Enviromapper for water (EPA 2011);
- Federal Emergency Management Agency (FEMA) 1998;
- National Wetlands Inventory (USFWS 2009); and
- National Weather Service (NWS) precipitation data (NWS 2011).

4.2 FEATURE CLASSIFICATIONS

Each feature identified within the study area was identified according to one or more of the following classifications provided below.

4.2.1 Ditch

Ditches are concrete or earthen, ephemeral, non-Relatively Permanent Water (RPW) conveyance features that have been excavated within uplands for the purposes of conveying upland flows - surface water runoff and excess irrigation runoff (USACE 2007c, USACE 2007a). They are small (i.e., typically less than 4 ft in width), constructed v-ditches that have been engineered within uplands to convey runoff during, and for a short period following, precipitation and irrigation events. The majority of the ditches within the study area do not contain an obvious OHWM and none have upslope connectivity with a natural watercourse. They all occur along roadsides and other developments to rapidly convey flows away from roadways, parking lots, irrigated facilities and are typically maintained (e.g., debris removal and routine clearing). Most ditches are unvegetated or vegetated with non-native annual grasses and have negligible or non-existent functions and values to support wildlife.

4.2.2 Flood Control Facility

Flood Control Facilities include large constructed flood-control drainages consisting of concrete box or trapezoid cross-sections. They occur both as open-air drainages or drainages that extend underground below grade. They are constructed to collect and convey considerable volume of flood waters downslope away from developed areas and infrastructure. Some flood control drainages are constructed within former natural waterways, such as streams, to maximize drainage and reduce or eliminate flooding, thereby

functioning as modified natural drainages. These structures are constructed of concrete and reinforced steel, with concrete and/or rock riprap sides and an earthen bottom. Concrete box or trapezoid drainages within the study area contain an OHWM (e.g., watermarks) and a bed and bank (USACE 2007a).

Flood Control Facilities are also typically associated with culverts. Culverts are structures used to channel water underneath roads, railways, embankments, or other infrastructure. They form a conduit in a natural or artificial drainage and transfer flow from an upstream portion of a drainage to a downstream portion of a drainage. Culverts are typically constructed out of concrete, metal, plastic, or steel grates. Concrete culverts, corrugated metal pipe culverts (CMP), and corrugated plastic pipe culverts (CPP) are the most common. Culverts have a diversity of shapes, ranging from round or oval to rectangular (box culverts). Culverts typically contain an OHWM (e.g., watermarks) and usually consist of a short break within an otherwise continuous bed/bank of a feature (USACE 2007a).

4.2.3 Rivers

Rivers include named rivers within the study area. These include the San Gabriel River and Santa Ana River. These rivers have been channelized within the study area to prevent flooding and are contained within earthen and rock rip rap (i.e. San Gabriel River) or concrete (i.e. Santa Ana River) channels. These waterbodies are perennial and contain at least some flowing water year round.

4.2.4 Wetland

The term "wetlands" means those areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. (33 CFR 328.3(b); 40 CFR 230.3(t))

Wetlands are characterized by a prevalence of annual and/or perennial monocots and/or dicots, which grow in permanently or semi-permanently flooded or saturated soil associated with fresh water. Hydrophytic vegetation is present within wetlands due to the hydrological input and the prevalence of perennial species. Wetlands meet all three USACE criteria for wetlands (i.e., hydrophytic vegetation, hydric soils, and hydrology) for more than 5% of the frost free growing season (EL 1987).

4.2.5 Detention Basin

Detention basins are stormwater management facilities installed on or adjacent to tributaries of flood-control drainages, streams, or rivers. Detention basins are designed to protect against flooding, and in some cases, downstream erosion by storing water for a period of a time. Thus, detention basins are used to manage water quantity, while usually having a function in protecting water quality by retaining storm water for settling prior to downslope release. Detention basins are also referred to as holding ponds or dry detention basins if no permanent pool of water exists, or as wet detention basins if they are designed to permanently retain some volume of water year-round. Detention basins are earthen, with or without upland vegetation.

4.3 CWA Specific Procedures and Data Collection Techniques

Two survey methods were utilized to detect potential features within the study area: 1) a Routine Onsite Method and 2) a Routine Offsite Method (EL 1987). Both of these surveys provided 100% coverage of the study area. Following are specific boundary delineations relative to particular agency criteria discussed in more detail.

- Routine Onsite Method. This method utilized pedestrian surveys and was the primary, preferred survey method utilized in all areas where land use, topography, and vegetation density allowed access to a potential feature. These surveys consisted of walking the feature's distinct OHWM and/or abrupt boundary while delineating with a sub-meter Trimble GeoXH Global Positioning System (GPS) receiver. Additional data on average OHWM and bed/bank width, feature length, vegetation community, and other characteristics were recorded in the field on standardized data forms.

- Routine Offsite Method. This method was utilized in areas where access to a feature, or portions of a feature, were restricted, prohibited, or otherwise inaccessible (e.g., fenced areas, private property, flood-control facilities, unsafe road shoulders, or within onramps and off-ramps). These surveys consisted of mapping the feature in the field on high-resolution aerial maps while viewing the feature from a suitable adjacent vantage point, such as from an elevated area or from behind a fence or other physical boundary. Data on feature boundaries and characteristics (i.e., estimated OHWM and bed/bank widths, and/or vegetation community data) were based on direct observation and/or from inference from upslope and downslope regions of the feature where portions of the feature were obscured. These data were recorded in the field on standardized data forms. When a suitable adjacent vantage point to view a feature could not be obtained, estimates of the OHWM and bed/bank width and vegetation data of the inaccessible feature were obtained from aerial signatures identified by viewing high-resolution aerial maps (Digital Globe 2010) and Google Earth, as well as from field observations made from surrounding / adjacent areas. These inaccessible features were subsequently digitized from aerial maps with Geographic Information Systems (GIS). Instances where features extended underground through culverts, etc., the underground facility was assumed to follow a straight path between the inlet and outfall structures – provided they could be located.

A routine study area determination was conducted by URS biologists Greg Hoisington and Cara Snellen for USACE-defined WoUS and wetlands using the methods set forth in the USACE Wetland Delineation Manual (EL 1987) and the Arid West Regional Supplement, version 2.0 (USACE 2008b). The study area was surveyed periodically throughout July and August 2009, April 2010, and January-February 2011 in order to determine the presence/absence and boundaries of potential special aquatic resource areas (i.e., WoUS, wetlands, vegetated shallows, and vernal pools) that were identified in literature review as well as through field observations. Areas that were determined to have an OHWM and/or a dominance of hydrophytic vegetation were further analyzed for hydric soils and hydrology as described below.

Total CWA jurisdictional limits were delineated for WoUS based on the presence of a well-defined OHWM and/or wetland boundaries for each feature. Identification and location of the OHWM followed guidance provided in Lichvar and Wakely (2004), Lichvar et al. (2006), and Lichvar and McColley (2008). USACE-defined WoUS and wetlands were delineated in the field with a sub-meter Trimble GeoXH GPS receiver, where accessible, or delineated on high-resolution aerial photographs and subsequently digitized with GIS where no access was possible (e.g., large flood-control facilities, unsafe interchanges and road shoulders, fenced areas, and/or private property). The surface area of each feature was then calculated with GIS in order to determine total CWA jurisdiction of each feature within the study area.

The evaluation process for USACE-defined wetlands considered vegetation, soils, and hydrological parameters—in that order—of suspected features within the study area using the methods for routine onsite determinations set forth in the USACE Wetland Delineation Manual (EL 1987) and the Arid West Regional Supplement (USACE 2008b). Potential wetland and WoUS features were also evaluated using

the methods set forth in the USACE and EPA CWA jurisdiction guidance documents following the U.S. Supreme Court's Decision in Rapanos v. United States and Carabell v. United States (USACE 2007a; USACE 2007b; USACE 2008a, USACE 2008b). Wetland determination data were recorded on Arid West Wetland Determination Data Forms (version 2.0) when applicable and representative photographs of most accessible features were taken. Arid West Wetland Determination Data Forms are included in Appendix A. Representative photographs are included in Appendix B.

4.3.1 Vegetation

Vegetation within potential special aquatic features was recorded on Wetland Determination Data Forms (Arid West Region) (Appendix A). Plant species were determined based on the *Jepson Manual, Higher Plants of California* (Hickman 1993) and the wetland indicator status of plant species was based on the *National List of Plant Species that Occur in Wetlands, California Region 0* (Reed 1988). During the field delineation, plants were categorized based on their probability to occur in wetlands or uplands according to the wetland indicator status listed in Table 1 (EL 1987, Reed 1988).

TABLE 1. SUMMARY OF WETLAND INDICATOR STATUS

Category	Probability
Obligate Wetland (OBL)	Almost always occur in wetlands (>99 % probability).
Facultative Wetland (FACW)	Usually occur in wetlands (estimated probability 67 to 99 %).
Facultative (FAC)	Equally likely to occur in wetlands/non-wetlands (estimated probability 34 to 66 %).
Facultative Upland (FACU)	Usually occur in non-wetlands (estimated probability 67-99 %).
Obligate Upland (UPL)	Almost always occur in non-wetlands (estimated probability >99 %).
No Indicator (NI)	Wetland indicator status not assigned. Species is assumed to be upland.

The wetland vegetation criterion was considered to be met if the Dominance Test using the 50/20 rule was satisfied (e.g., any species that contributed to a cumulative total of 50 % of the total dominant coverage plus any other species comprising at least 20 % coverage) (USACE 2008a). Absolute, rather than relative vegetation cover was used in determining dominant species coverage.

4.3.2 Soils

Soil texture, matrix, redoximorphic features[3] and the presence of subsoil layers impervious to water infiltration were documented from soil pits. Soils were examined for positive hydric soil indicators such as low chroma, iron or manganese concretions, histic epipedons, organic layers, gleization, sulfidic odor, or other primary hydic soil indicators listed on the Arid West Wetland Determination Data Form. Soil color and characteristics were determined from moist soil peds using Munsell Soil Color Charts (Munsell Color 2000). Soils were evaluated by digging pits to a depth of approximately 16 inches - where possible - which were sufficient to conclusively provide confirmation of the presence or absence of hydric soils. GPS position data was collected at each soil pit. Specific pit depths, soil color and texture, and other soil data obtained at each soil sample location are provided in Appendix A. Paired upland and wetland soil pits were evaluated where wetland or waters boundaries were not abrupt. Hydric soil assessments were predominately based upon the guidance provided in the Pocket Guide to Hydric Soil Field Indicators (WTI 2010), and the Field Indicators of Hydric Soils (USDA-NRCS 2010). Supplemental soil information for the regional study area was also evaluated within the General Soil Survey of the U.S. (United States Department of Agriculture-Natural Resources Conservation Service [USDA-NRCS] 2006).

3 Redoximorphic features are considered spots or blotches of different colors or shades of color interspersed within the dominant color in a soil layer - usually resulting from the presence of periodic reducing soil conditions.

4.3.3 Hydrology

Hydrology was evaluated in areas suspected of seasonal inundation and/or saturation to the surface during the growing season, provided that the soil and vegetation parameters were met as defined in the Wetlands Delineation Manual (EL 1987). Recent precipitation data were analyzed to evaluate the frequency and amount of rainfall events within the study area and on surrounding lands (NWS 2011). Hydrological information was determined for features based on aerial photographs as well as field analysis of the presence/absence of primary or secondary hydrological indicators (e.g., surface water, saturation, sediment or drift deposits, watermarks, soil cracks, oxidized root channels, biotic or salt crusts) as listed on the Arid West Wetland Determination Data Form.

All suspected jurisdictional features observed in the field were classified as RPW (i.e., assumed to be continuously flowing for greater than 3 months per year), or non-RPW (i.e., believed to be seasonal, ephemeral, intermittent, or continuously flowing less than or equal to 3 months). These flow classifications were determined through repeated field observations and analysis of recent precipitation data (NWS 2011). If a feature was observed with continuous flow during the wet season (i.e., October through April) and/or the dry season (i.e., May through September) it was considered to be a RPW. If a feature contained flow during the dry season, then it was assumed to contain continuous flow during the wet season. In contrast, if a feature was observed to be dry with no evidence of recent flow during the wet season, then the feature was considered to be non-RPW. Features were determined to be RPWs if they contained continuous flow for >3 months/year regardless of the source or quantity of flows conveyed within the feature. Features were not classified as RPWs if flow was non-continuous or flowing sporadically or in intervals (USACE 2008b). RPWs did not include ephemeral tributaries that flow only in response to precipitation.

4.3.4 Interstate or Foreign Commerce Connection

Features that were identified as wetlands or other WoUS were then further evaluated to determine if they had an Interstate or Foreign Commerce Connection. Features that met the USACE's three technical criteria for wetlands and had an Interstate or Foreign Commerce Connection were determined to be WoUS subject to USACE jurisdiction. The following features were assumed to have an Interstate or Foreign Commerce Connection (33 CFR 328.3 et seq.):

- Navigable waters;
- Wetlands adjacent to navigable waters;
- Non-navigable tributaries of navigable waters that are relatively permanent where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months or more); and
- Wetlands that directly abut such tributaries.

4.3.5 Significant Nexus Analysis

A significant nexus analysis was performed for the following waters to determine whether they contain a significant nexus with a Traditional Navigable Water TNW (USACE 2007a, USACE 2008a): Non-navigable, non-relatively permanent tributaries to a TNW; and Wetlands adjacent to, or directly abutting, non-relatively permanent, non-navigable waters tributary to a TNW.

A significant nexus analysis was performed on non-RPW tributaries and any associated wetlands to assess the flow characteristics and functions of these waters. A determination was made whether the functions performed by each tributary, in combination with any associated wetlands, had more than a speculative or

insubstantial effect on the chemical, physical, and/or biological integrity of the downstream TNW. Considerations when evaluating the significant nexus included, but were not limited to the following: the volume, duration, and frequency of flow in the tributary; its localized watershed drainage area; its proximity to a TNW; and the functions performed by the tributary and all its adjacent wetlands.

The extent of a tributary analyzed for a significant nexus included the entire reach of the tributary that was the same order (i.e., from the point of upstream confluence, where two lower order streams meet to form the tributary, downstream to the point where the tributary entered a higher order stream. Due to variability in access the specific hydrological characteristics and significant nexus analysis of each of these non-RPW features was estimated utilizing a combination of field observations, aerial photography interpretation, and GIS topographic analysis. Jurisdictional determination data forms are included in Appendix C.

5.0 RESULTS

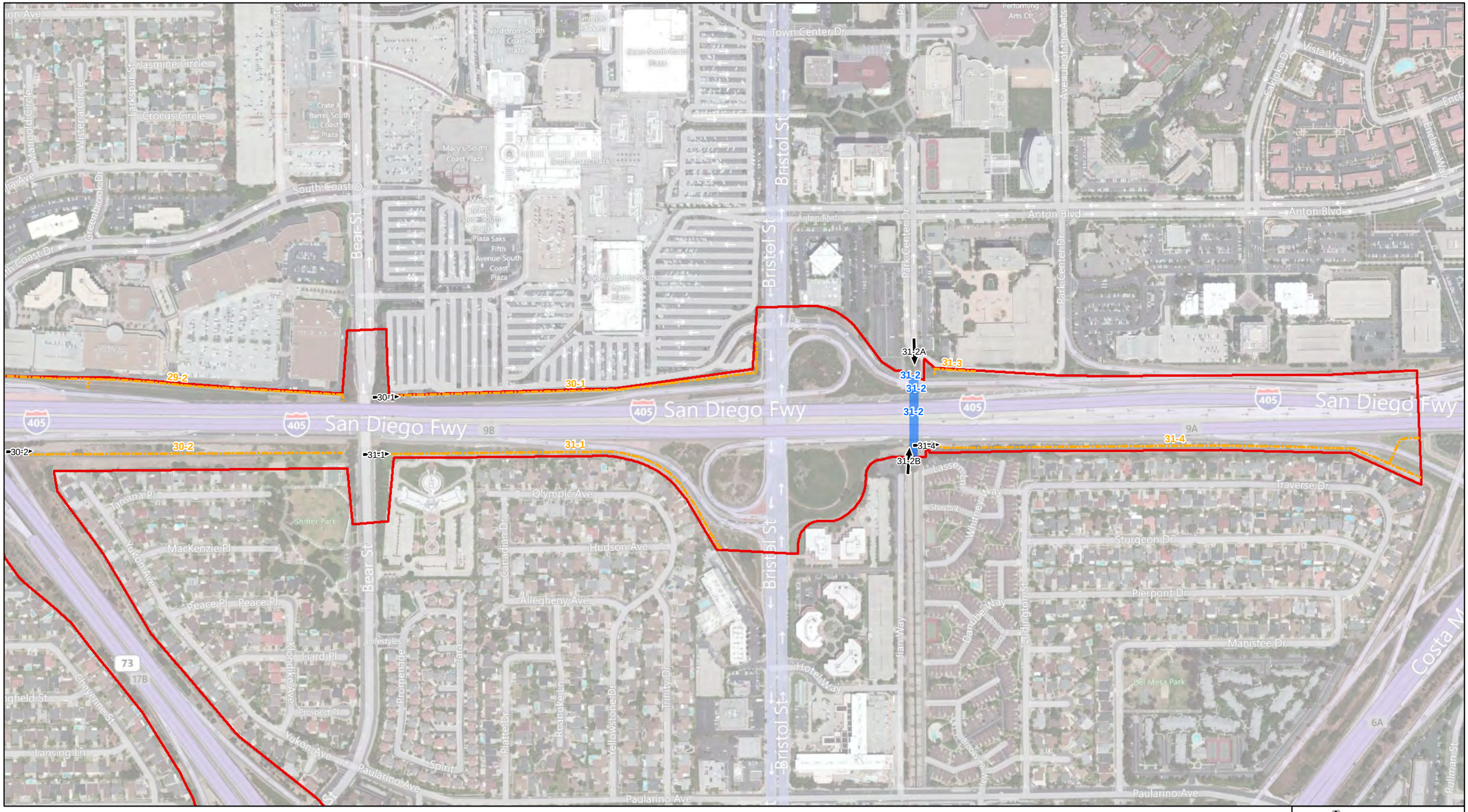
This section presents the results of the delineation of USACE jurisdiction. A total of 115 features consisting of 19 potential jurisdictional features was detected within the study area and are discussed within Sections 5.3, 5.4, and 5.5 (Figs. 4-1 through 4-23). Wetland data sheets are included in Appendix A, site photographs are included in Appendix B, and Approved Jurisdictional Determination Forms are included in Appendix C.

FIGURES 4-1 THROUGH 4-23 – CWA SECTION 404 JURISDICTIONAL DETERMINATION – BUILD ALTERNATIVE 1

Study Area
Alternative 1 Temporary Impact
Alternative 1 Permanent Impact
Photo Location and Direction
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

CWA Section 404
Jurisdictional Delineation
Alternative 1
March 2012
Figure 4-1



Study Area
Alternative 1 Temporary Impact
Alternative 1 Permanent Impact
Photo Location and Direction
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

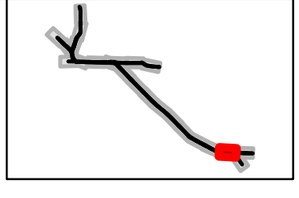
0 250 500 1,000 Feet

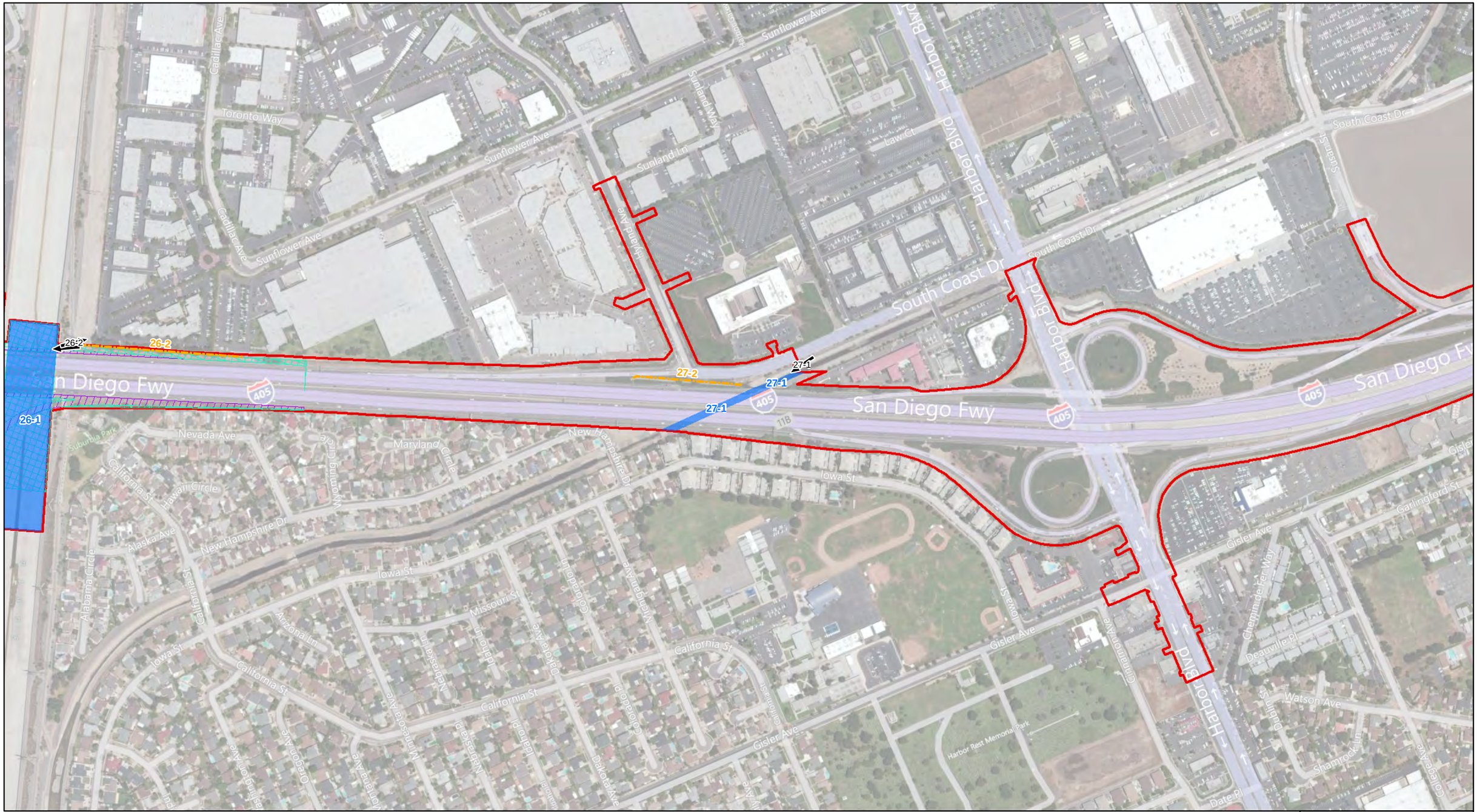
CWA Section 404
Jurisdictional Delineation
Alternative 1
March 2012
Figure 4-2

Study Area
Alternative 1 Temporary Impact
Alternative 1 Permanent Impact
Photo Location and Direction
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

CWA Section 404
Jurisdictional Delineation
Alternative 1
March 2012
Figure 4-3

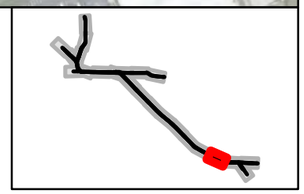




Study Area
Alternative 1 Temporary Impact
Alternative 1 Permanent Impact
Photo Location and Direction
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

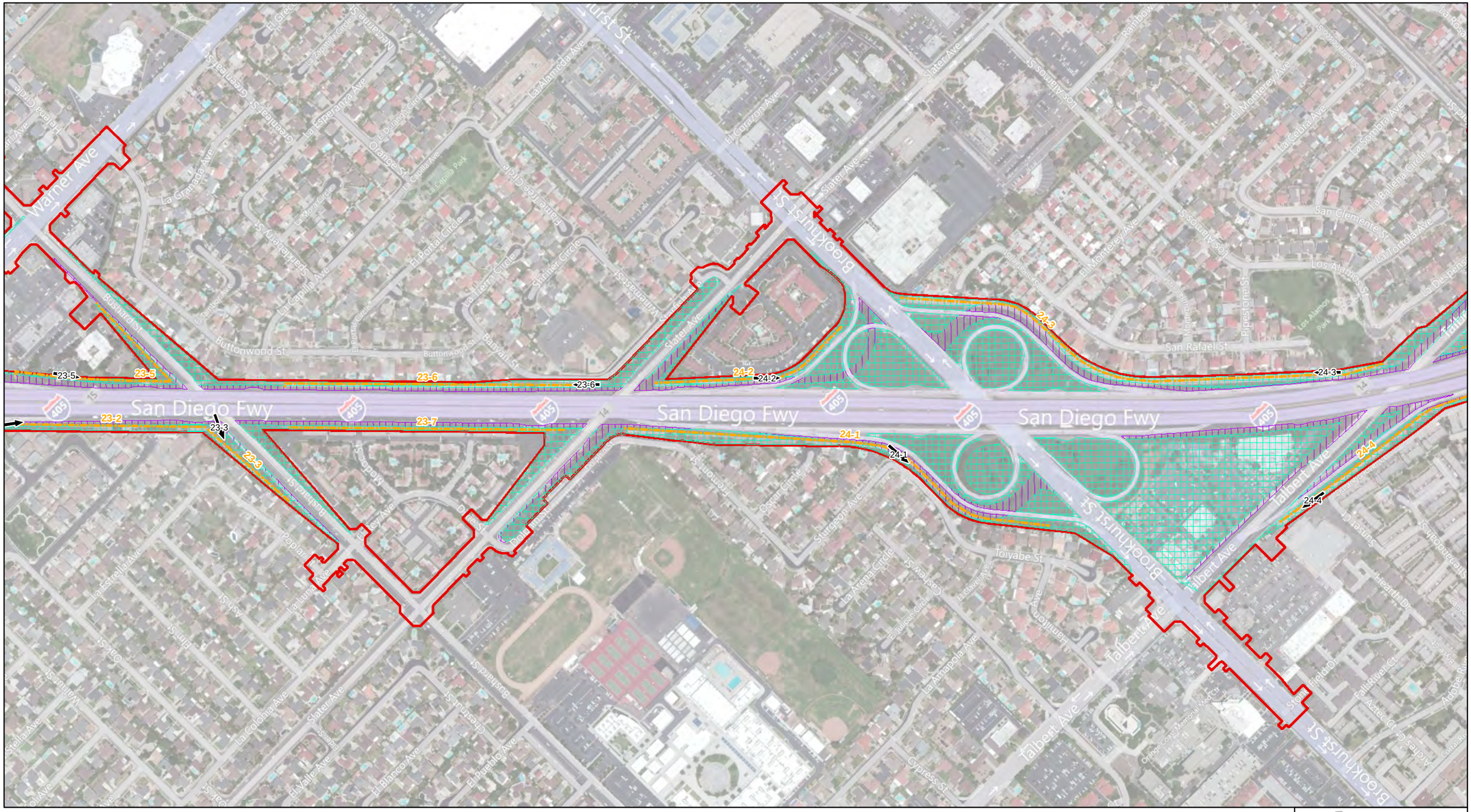
CWA Section 404
Jurisdictional Delineation
Alternative 1
March 2012
Figure 4-4



Study Area
Alternative 1 Temporary Impact
Alternative 1 Permanent Impact
Photo Location and Direction
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

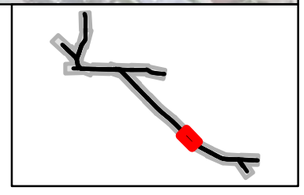
CWA Section 404
Jurisdictional Delineation
Alternative 1
March 2012
Figure 4-5

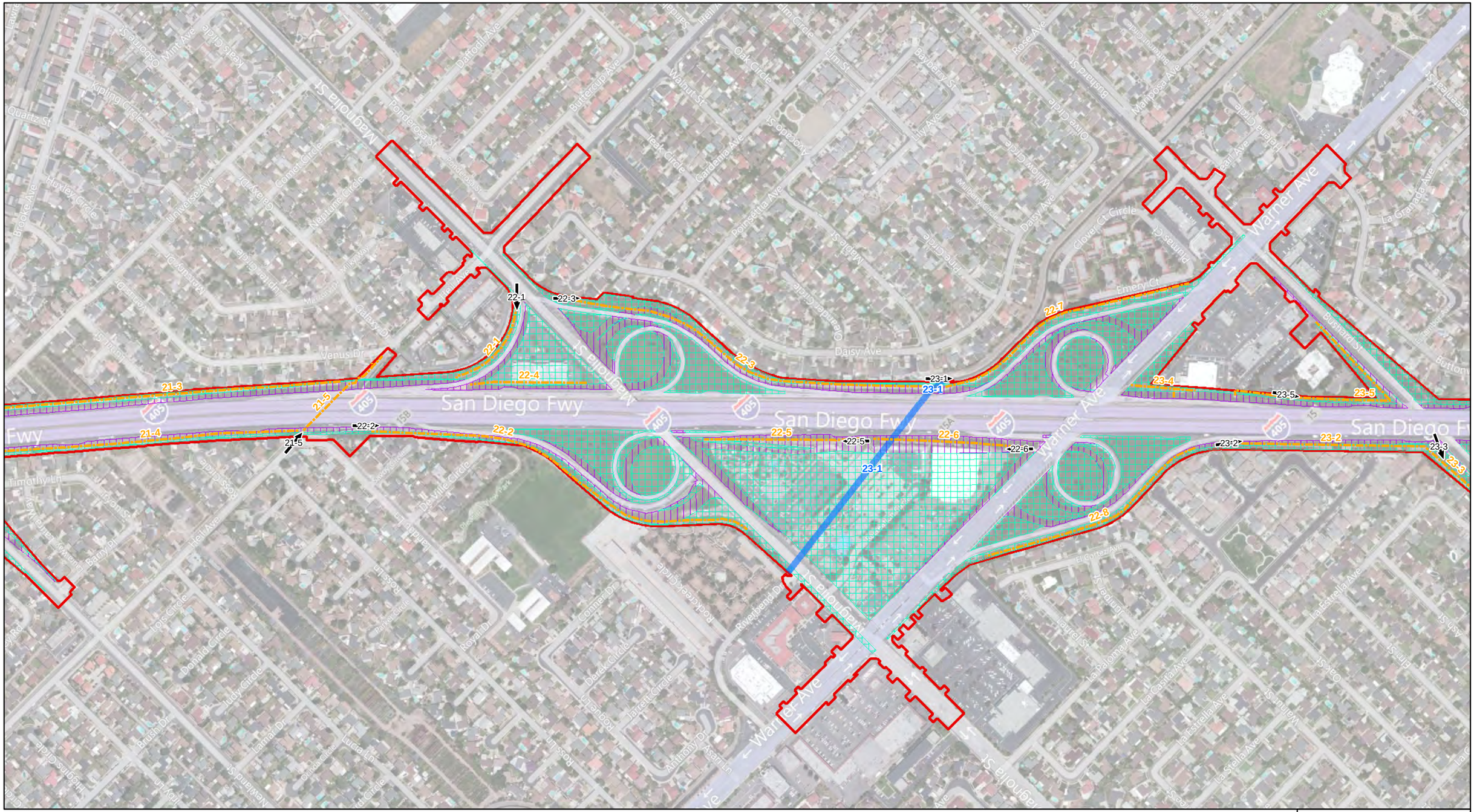


Study Area
Alternative 1 Temporary Impact
Alternative 1 Permanent Impact
Photo Location and Direction
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

CWA Section 404
Jurisdictional Delineation
Alternative 1
March 2012
Figure 4-6

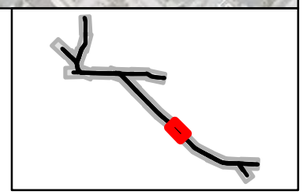


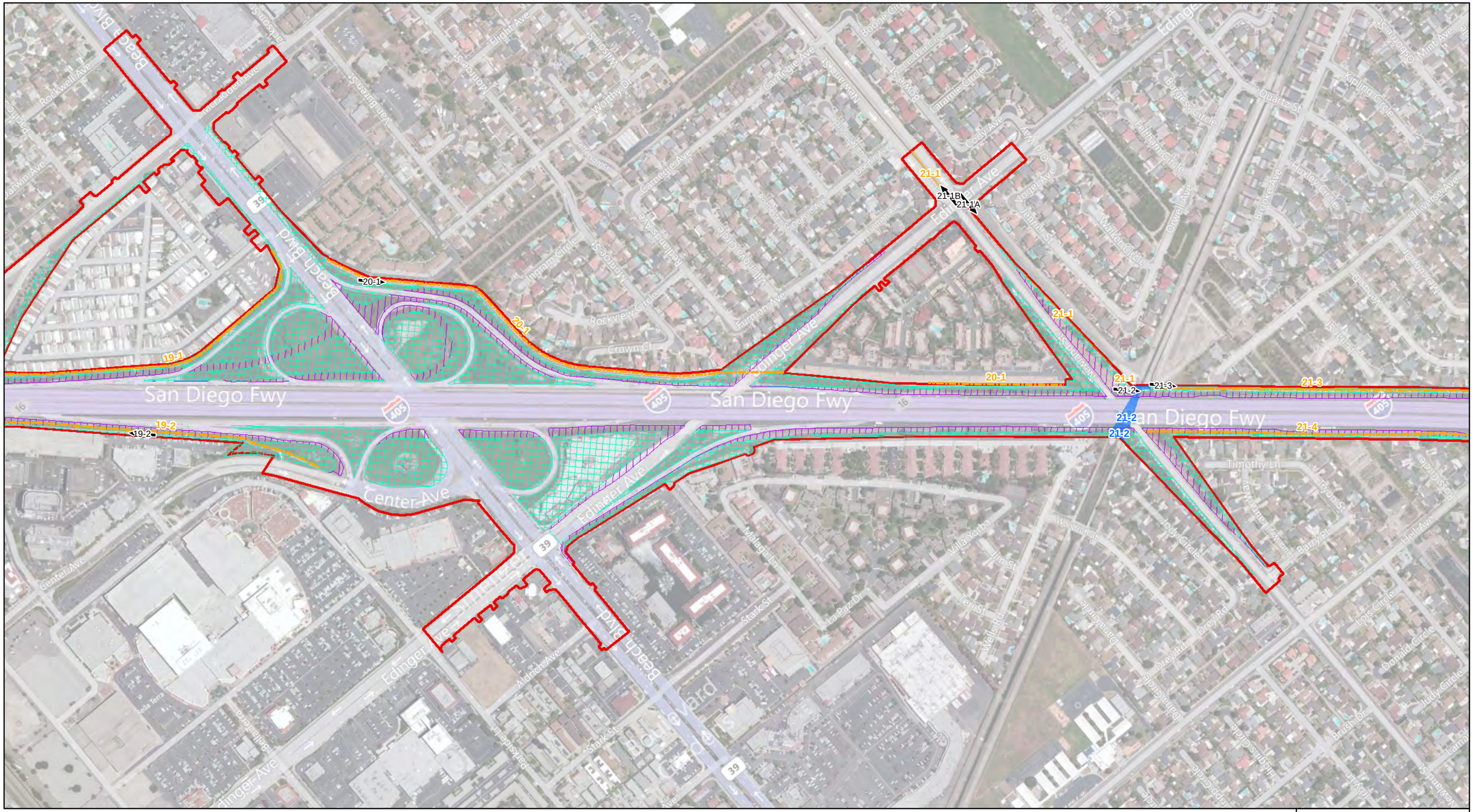


Study Area
Alternative 1 Temporary Impact
Alternative 1 Permanent Impact
Photo Location and Direction
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

CWA Section 404
Jurisdictional Delineation
Alternative 1
March 2012
Figure 4-7

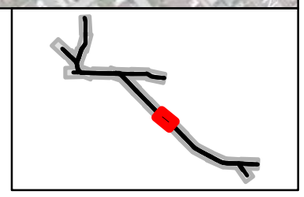




Study Area
Alternative 1 Temporary Impact
Alternative 1 Permanent Impact
Photo Location and Direction
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

CWA Section 404
Jurisdictional Delineation
Alternative 1
March 2012
Figure 4-8



Study Area
Alternative 1 Temporary Impact
Alternative 1 Permanent Impact
Photo Location and Direction
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

CWA Section 404
Jurisdictional Delineation
Alternative 1
March 2012
Figure 4-9

Study Area
Alternative 1 Temporary Impact
Alternative 1 Permanent Impact
Photo Location and Direction
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

CWA Section 404
Jurisdictional Delineation
Alternative 1
March 2012
Figure 4-10

Study Area
Alternative 1 Temporary Impact
Alternative 1 Permanent Impact
Photo Location and Direction
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

CWA Section 404
Jurisdictional Delineation
Alternative 1
March 2012
Figure 4-11

Study Area
Alternative 1 Temporary Impact
Alternative 1 Permanent Impact
Photo Location and Direction
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

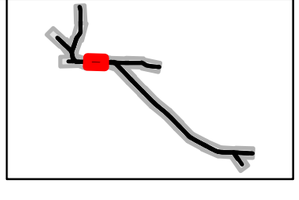
0 250 500 1,000 Feet

CWA Section 404
Jurisdictional Delineation
Alternative 1
March 2012
Figure 4-12

Study Area
Alternative 1 Temporary Impact
Alternative 1 Permanent Impact
Photo Location and Direction
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

CWA Section 404
Jurisdictional Delineation
Alternative 1
March 2012
Figure 4-13



Study Area
Alternative 1 Temporary Impact
Alternative 1 Permanent Impact
Photo Location and Direction
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

CWA Section 404
Jurisdictional Delineation
Alternative 1
March 2012
Figure 4-14

Study Area
Alternative 1 Temporary Impact
Alternative 1 Permanent Impact
Photo Location and Direction
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

CWA Section 404
Jurisdictional Delineation
Alternative 1
March 2012
Figure 4-15

Study Area
Alternative 1 Temporary Impact
Alternative 1 Permanent Impact
Photo Location and Direction
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

CWA Section 404
Jurisdictional Delineation
Alternative 1
March 2012
Figure 4-16

Study Area
Alternative 1 Temporary Impact
Alternative 1 Permanent Impact
Photo Location and Direction
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

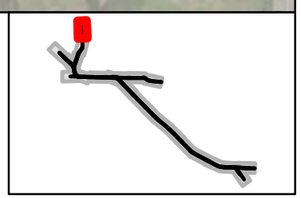
0 250 500 1,000 Feet

CWA Section 404
Jurisdictional Delineation
Alternative 1
March 2012
Figure 4-17

Study Area
Alternative 1 Temporary Impact
Alternative 1 Permanent Impact
Photo Location and Direction
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

CWA Section 404
Jurisdictional Delineation
Alternative 1
March 2012
Figure 4-18



Study Area
Alternative 1 Temporary Impact
Alternative 1 Permanent Impact
Photo Location and Direction
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

CWA Section 404
Jurisdictional Delineation
Alternative 1
March 2012
Figure 4-19

Study Area
Alternative 1 Temporary Impact
Alternative 1 Permanent Impact
Photo Location and Direction
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

CWA Section 404
Jurisdictional Delineation
Alternative 1
March 2012
Figure 4-20

Study Area
Alternative 1 Temporary Impact
Alternative 1 Permanent Impact
Photo Location and Direction
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

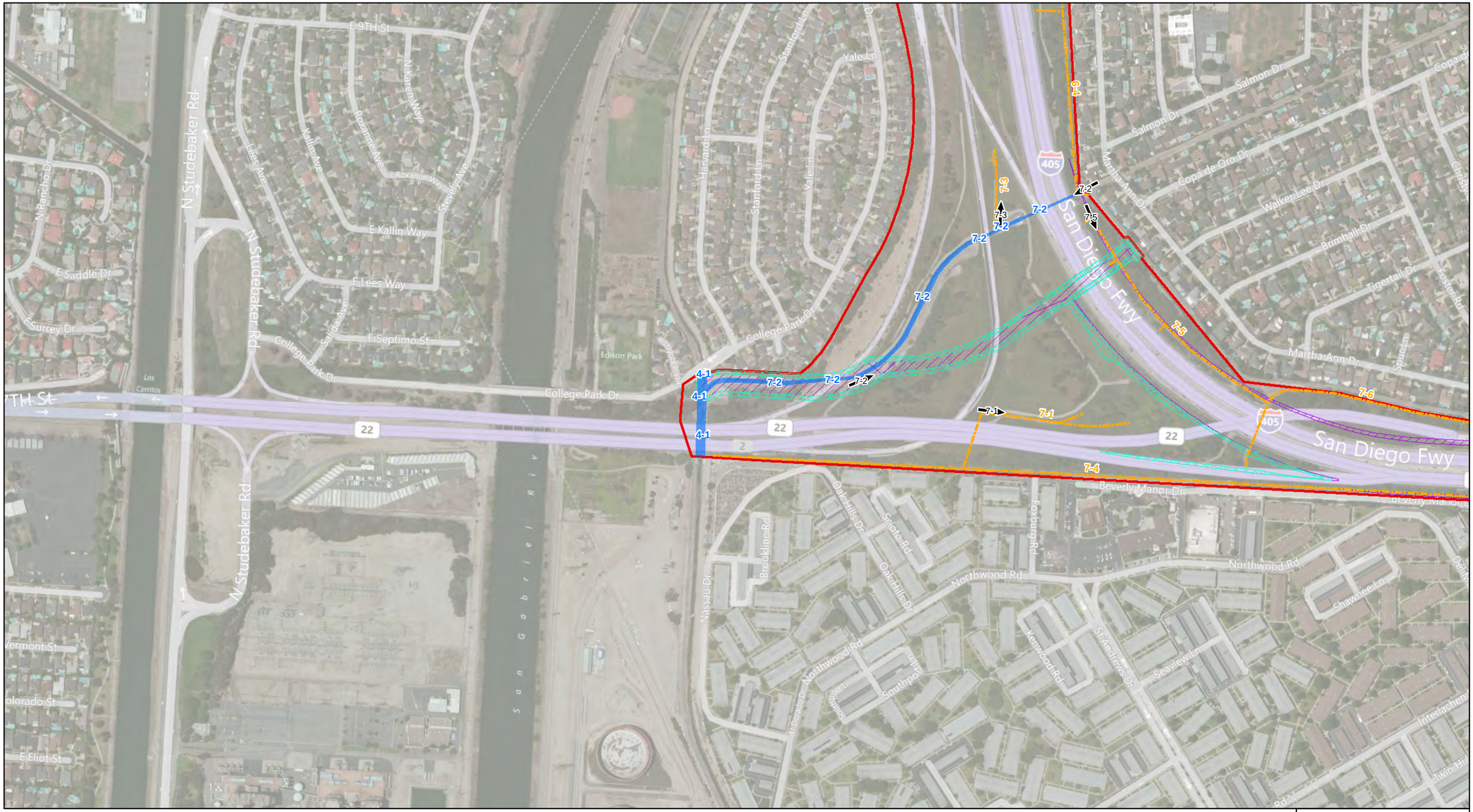
0 250 500 1,000 Feet

CWA Section 404
Jurisdictional Delineation
Alternative 1
March 2012
Figure 4-21

Study Area
Alternative 1 Temporary Impact
Alternative 1 Permanent Impact
Photo Location and Direction
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

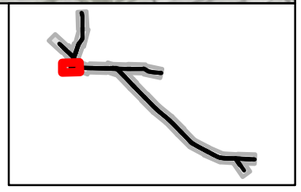
CWA Section 404
Jurisdictional Delineation
Alternative 1
March 2012
Figure 4-22



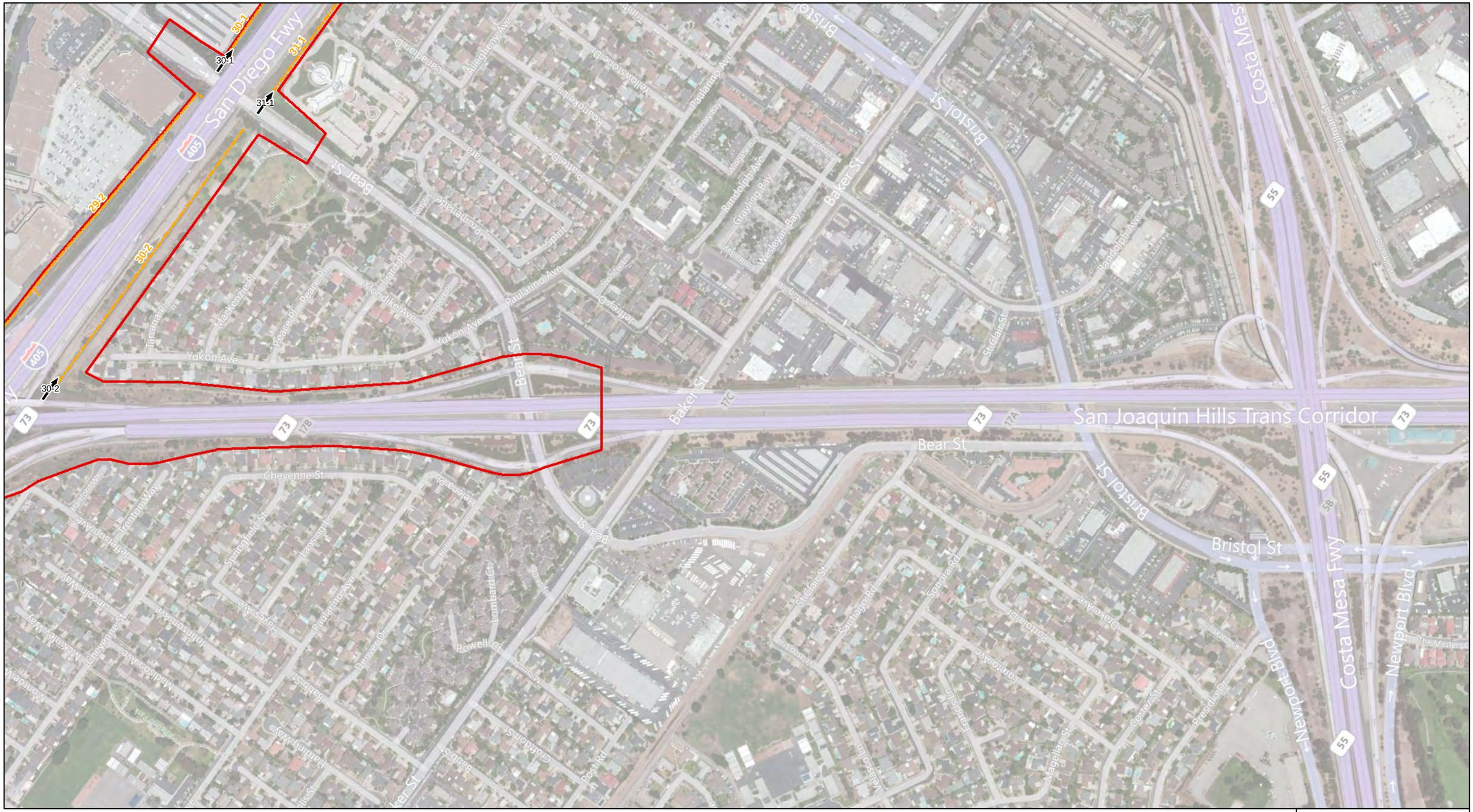
Study Area
Alternative 1 Temporary Impact
Alternative 1 Permanent Impact
Photo Location and Direction
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

CWA Section 404
Jurisdictional Delineation
Alternative 1
March 2012
Figure 4-23



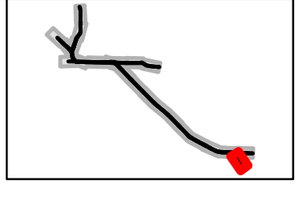
FIGURES 5-1 THROUGH 5-23 – CWA SECTION 404 JURISDICTIONAL DETERMINATION – BUILD ALTERNATIVE 2

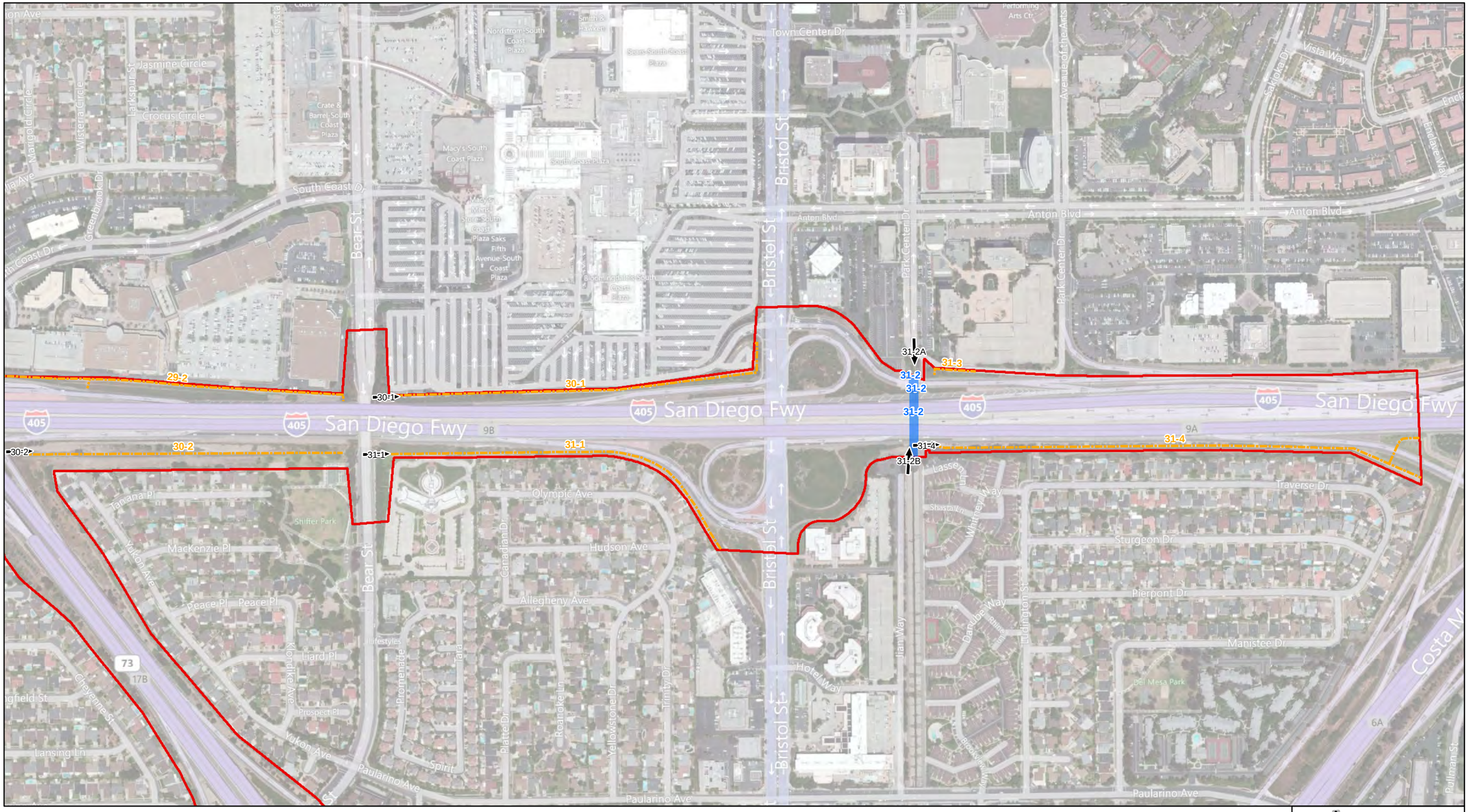


Study Area
Alternative 2 Temporary Impact
Alternative 2 Permanent Impact
Photo Location and Direction
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

CWA Section 404
Jurisdictional Delineation
Alternative 2
March 2012
Figure 5-1





Study Area
Alternative 2 Temporary Impact
Alternative 2 Permanent Impact
Photo Location and Direction
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

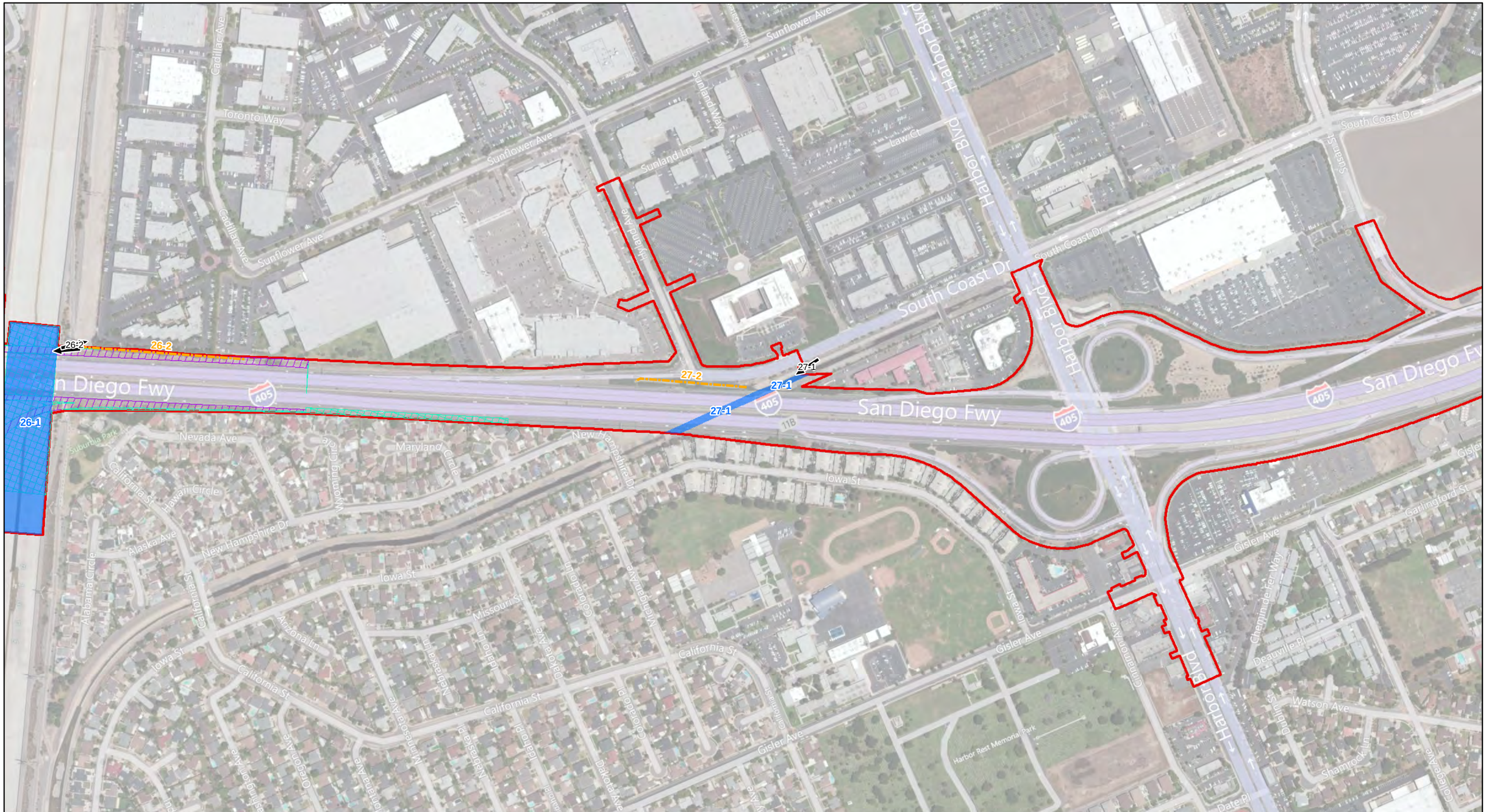
0 250 500 1,000 Feet

CWA Section 404
Jurisdictional Delineation
Alternative 2
March 2012
Figure 5-2

Study Area
Alternative 2 Temporary Impact
Alternative 2 Permanent Impact
Photo Location and Direction
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

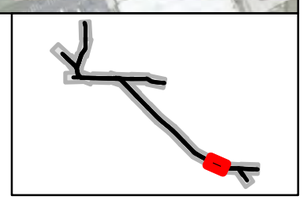
CWA Section 404
Jurisdictional Delineation
Alternative 2
March 2012
Figure 5-3



Study Area
Alternative 2 Temporary Impact
Alternative 2 Permanent Impact
Photo Location and Direction
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

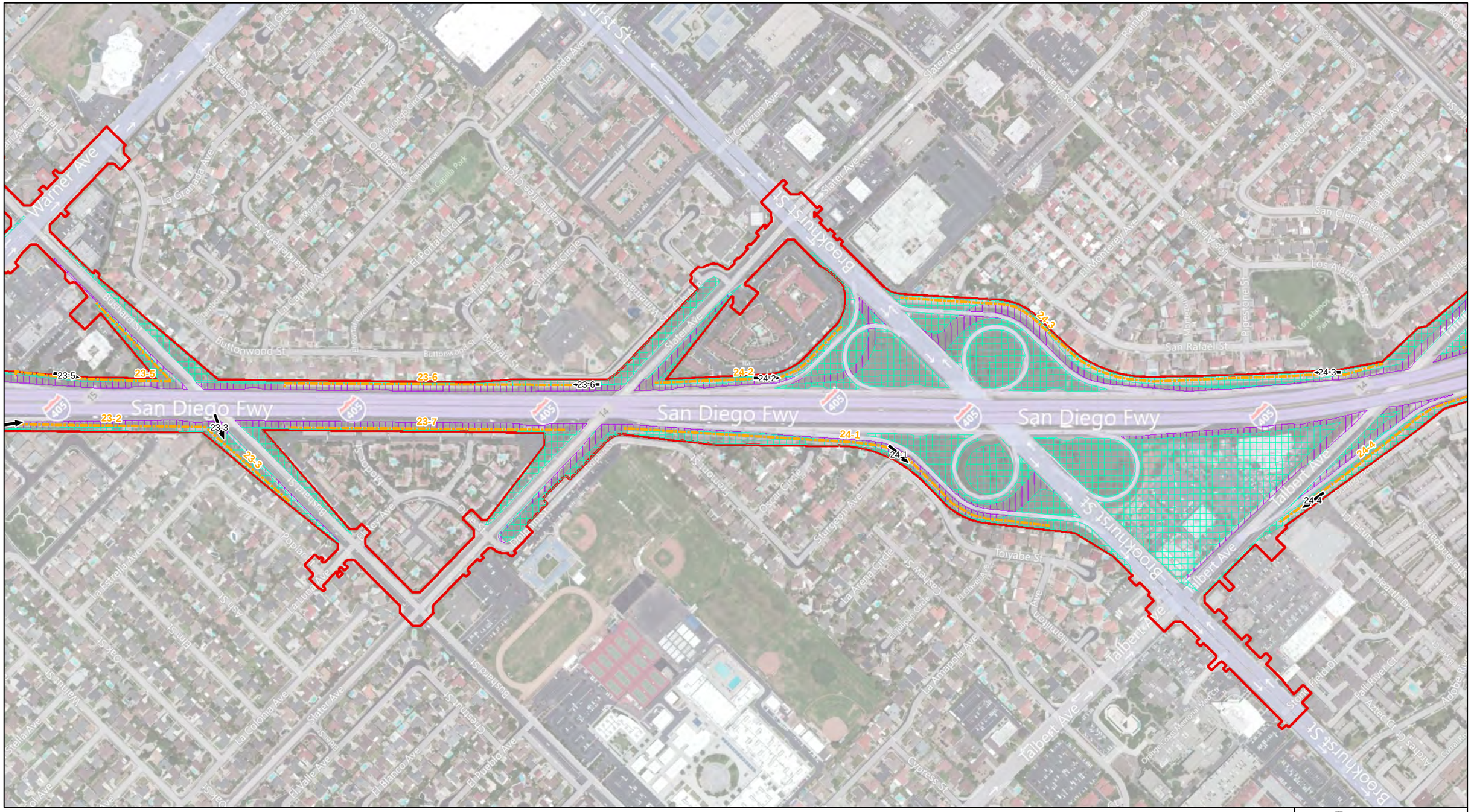
CWA Section 404
Jurisdictional Delineation
Alternative 2
March 2012
Figure 5-4



Study Area
Alternative 2 Temporary Impact
Alternative 2 Permanent Impact
Photo Location and Direction
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

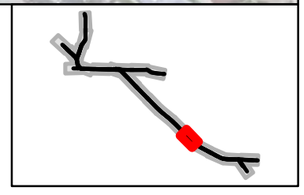
CWA Section 404
Jurisdictional Delineation
Alternative 2
March 2012
Figure 5-5



Study Area
Alternative 2 Temporary Impact
Alternative 2 Permanent Impact
Photo Location and Direction
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

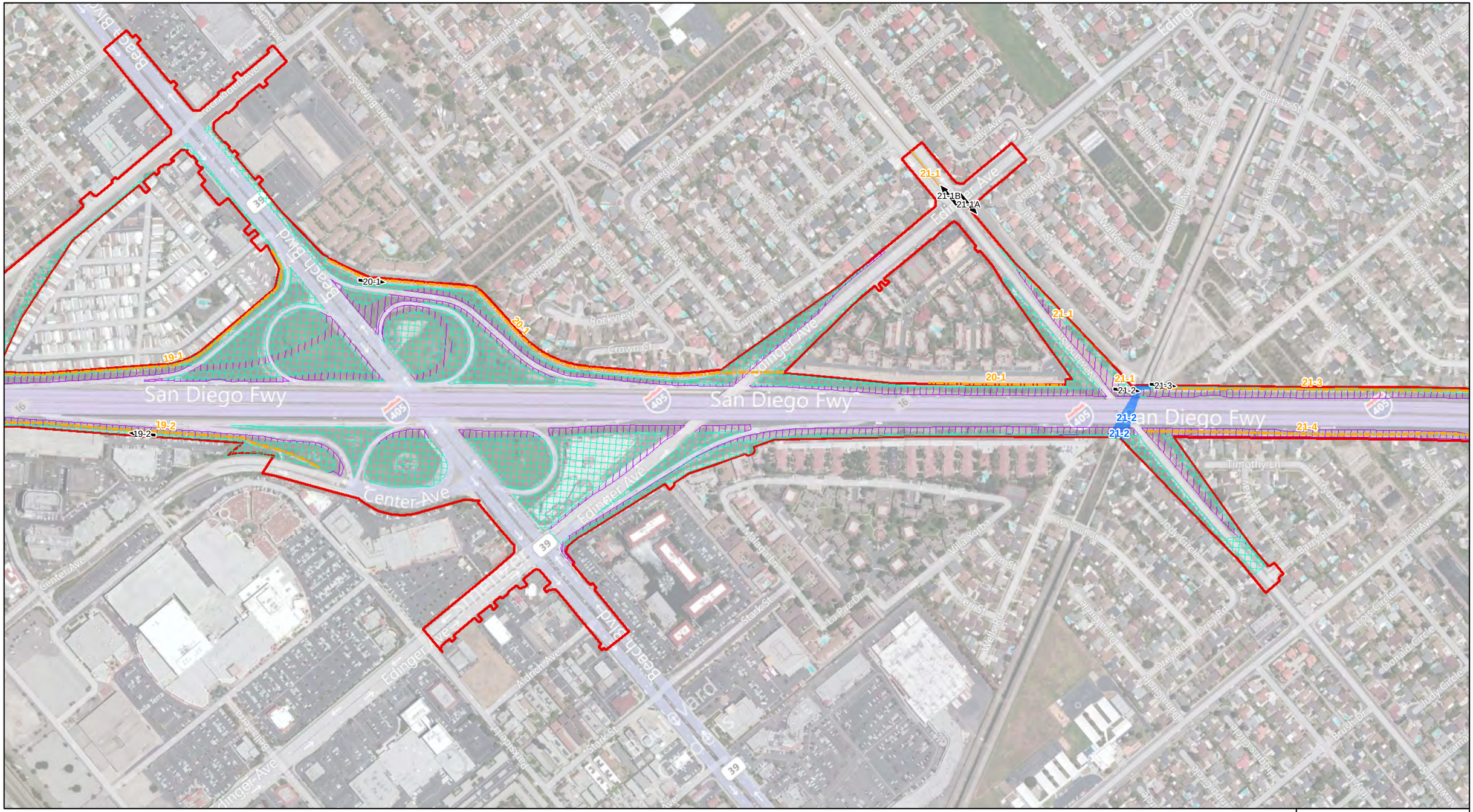
CWA Section 404
Jurisdictional Delineation
Alternative 2
March 2012
Figure 5-6



Study Area
Alternative 2 Temporary Impact
Alternative 2 Permanent Impact
Photo Location and Direction
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

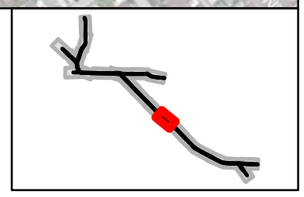
CWA Section 404
Jurisdictional Delineation
Alternative 2
March 2012
Figure 5-7



Study Area
Alternative 2 Temporary Impact
Alternative 2 Permanent Impact
Photo Location and Direction
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

CWA Section 404
Jurisdictional Delineation
Alternative 2
March 2012
Figure 5-8



Study Area
Alternative 2 Temporary Impact
Alternative 2 Permanent Impact
Photo Location and Direction
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

CWA Section 404
Jurisdictional Delineation
Alternative 2
March 2012
Figure 5-9

Study Area
Alternative 2 Temporary Impact
Alternative 2 Permanent Impact
Photo Location and Direction
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

CWA Section 404
Jurisdictional Delineation
Alternative 2
March 2012
Figure 5-10

Study Area
Alternative 2 Temporary Impact
Alternative 2 Permanent Impact
Photo Location and Direction
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

CWA Section 404
Jurisdictional Delineation
Alternative 2
March 2012
Figure 5-11

Study Area
Alternative 2 Temporary Impact
Alternative 2 Permanent Impact
Photo Location and Direction
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

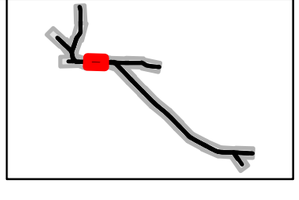
0 250 500 1,000 Feet

CWA Section 404
Jurisdictional Delineation
Alternative 2
March 2012
Figure 5-12

Study Area
Alternative 2 Temporary Impact
Alternative 2 Permanent Impact
Photo Location and Direction
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

CWA Section 404
Jurisdictional Delineation
Alternative 2
March 2012
Figure 5-13



Study Area
Alternative 2 Temporary Impact
Alternative 2 Permanent Impact
Photo Location and Direction
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

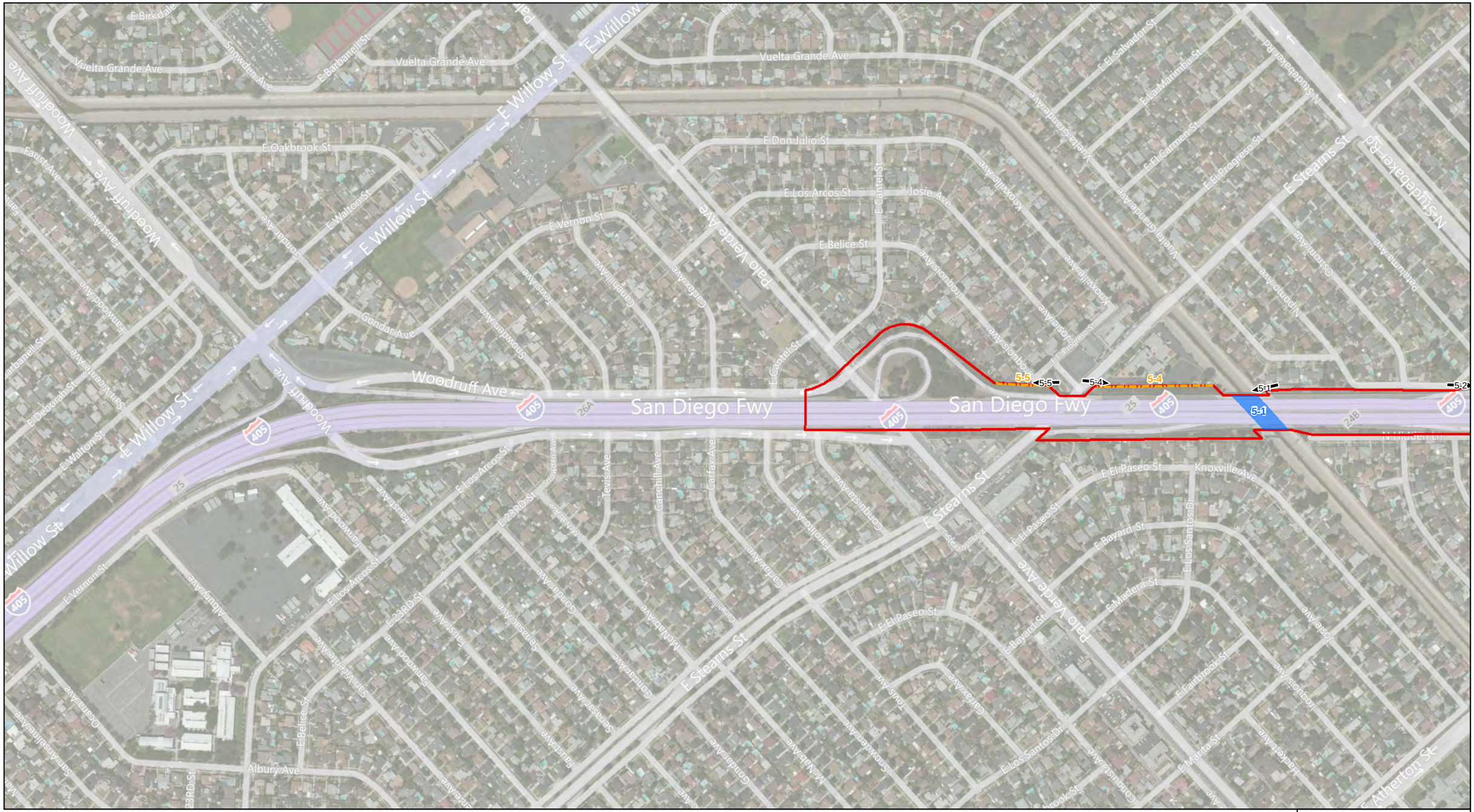
0 250 500 1,000 Feet

CWA Section 404
Jurisdictional Delineation
Alternative 2
March 2012
Figure 5-14

Study Area
Alternative 2 Temporary Impact
Alternative 2 Permanent Impact
Photo Location and Direction
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

CWA Section 404
Jurisdictional Delineation
Alternative 2
March 2012
Figure 5-15

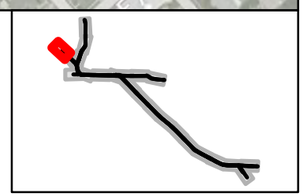


Study Area
Alternative 2 Temporary Impact
Alternative 2 Permanent Impact
Photo Location and Direction
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

CWA Section 404
Jurisdictional Delineation
Alternative 2
March 2012

Figure 5-16



Study Area
Alternative 2 Temporary Impact
Alternative 2 Permanent Impact
Photo Location and Direction
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

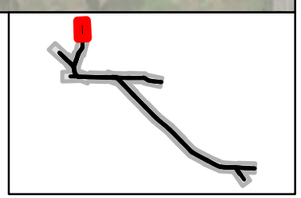
0 250 500 1,000 Feet

CWA Section 404
Jurisdictional Delineation
Alternative 2
March 2012
Figure 5-17

Study Area
Alternative 2 Temporary Impact
Alternative 2 Permanent Impact
Photo Location and Direction
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

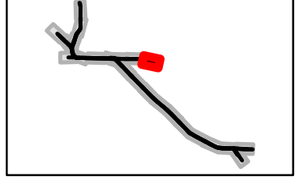
CWA Section 404
Jurisdictional Delineation
Alternative 2
March 2012
Figure 5-18



Study Area
Alternative 2 Temporary Impact
Alternative 2 Permanent Impact
Photo Location and Direction
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

CWA Section 404
Jurisdictional Delineation
Alternative 2
March 2012
Figure 5-19



Study Area
Alternative 2 Temporary Impact
Alternative 2 Permanent Impact
Photo Location and Direction
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

CWA Section 404
Jurisdictional Delineation
Alternative 2
March 2012
Figure 5-20

Study Area
Alternative 2 Temporary Impact
Alternative 2 Permanent Impact
Photo Location and Direction
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

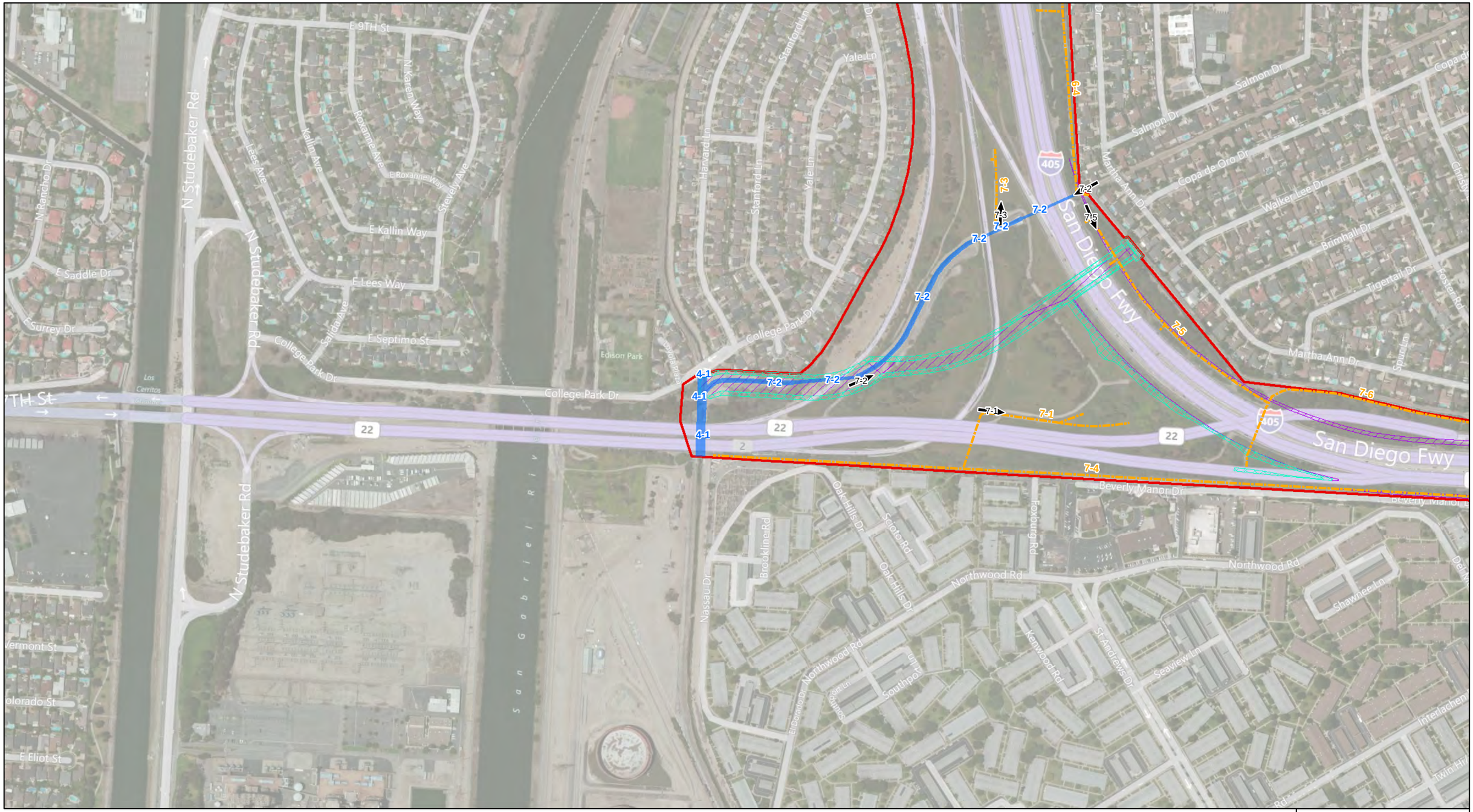
0 250 500 1,000 Feet

CWA Section 404
Jurisdictional Delineation
Alternative 2
March 2012
Figure 5-21

Study Area
Alternative 2 Temporary Impact
Alternative 2 Permanent Impact
Photo Location and Direction
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

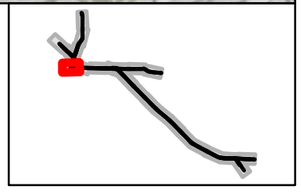
CWA Section 404
Jurisdictional Delineation
Alternative 2
March 2012
Figure 5-22



Study Area
Alternative 2 Temporary Impact
Alternative 2 Permanent Impact
Photo Location and Direction
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

CWA Section 404
Jurisdictional Delineation
Alternative 2
March 2012
Figure 5-23



FIGURES 6-1 THROUGH 6-23 – CWA SECTION 404 JURISDICTIONAL DETERMINATION – BUILD ALTERNATIVE 3

Study Area
Alternative 3 Temporary Impact
Alternative 3 Permanent Impact
Photo Location and Direction
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

CWA Section 404
Jurisdictional Delineation
Alternative 3
March 2012
Figure 6-1

Study Area
Alternative 3 Temporary Impact
Alternative 3 Permanent Impact
Photo Location and Direction
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

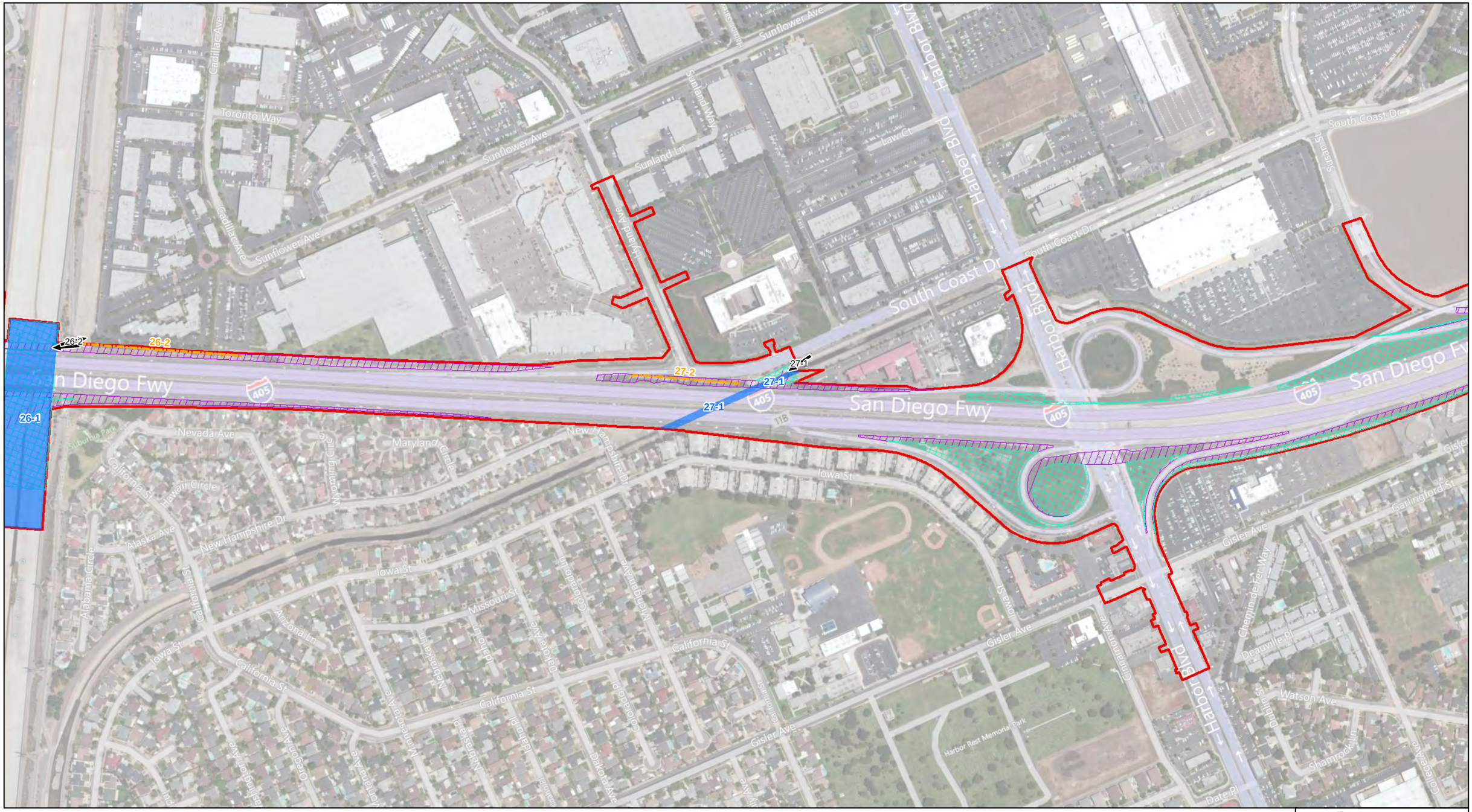
0 250 500 1,000 Feet

CWA Section 404
Jurisdictional Delineation
Alternative 3
March 2012
Figure 6-2

Study Area
Alternative 3 Temporary Impact
Alternative 3 Permanent Impact
Photo Location and Direction
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

CWA Section 404
Jurisdictional Delineation
Alternative 3
March 2012
Figure 6-3

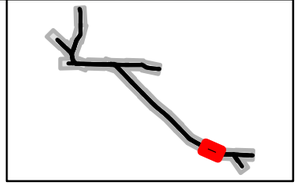


Study Area
Alternative 3 Temporary Impact
Alternative 3 Permanent Impact
Photo Location and Direction
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

CWA Section 404
Jurisdictional Delineation
Alternative 3
March 2012

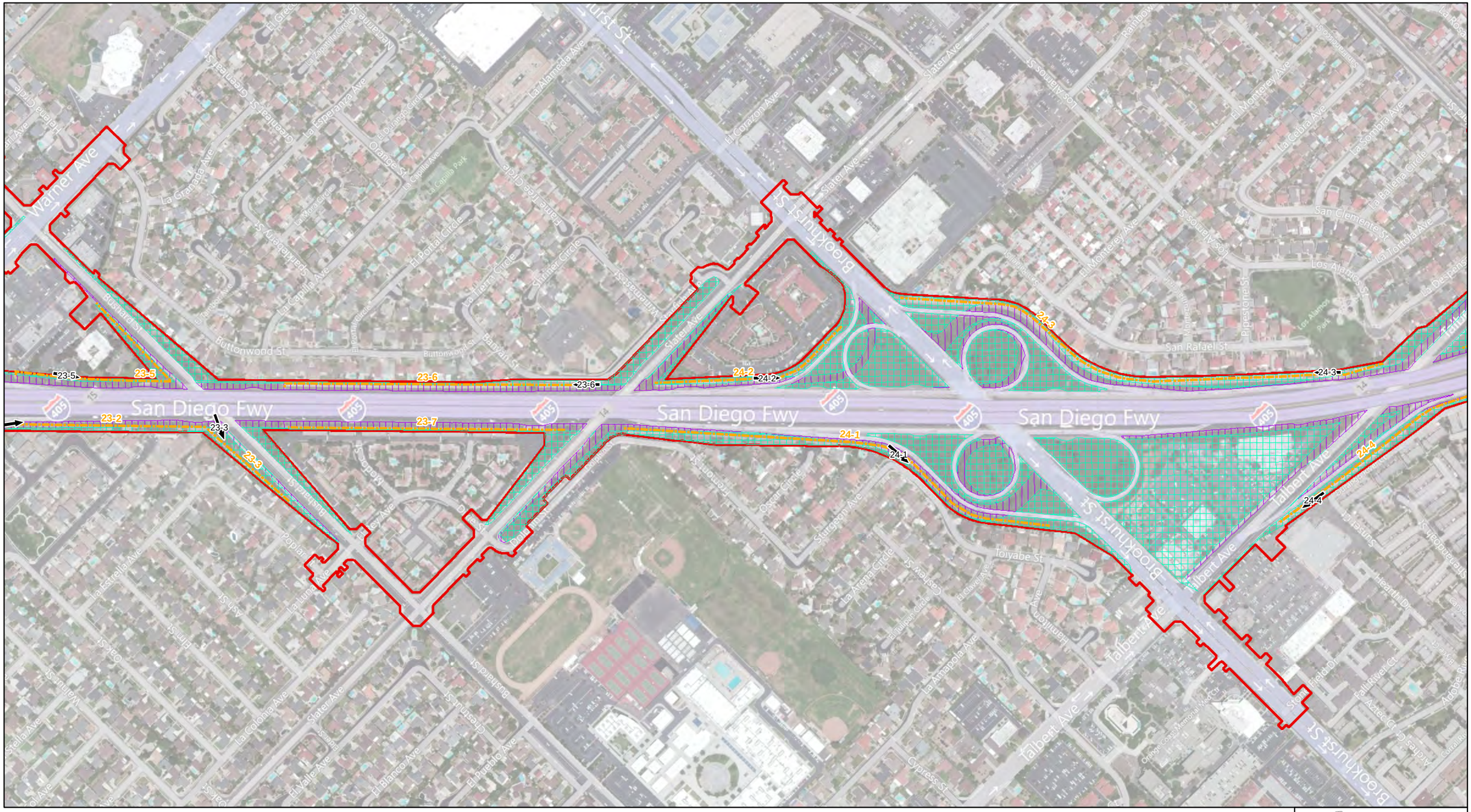
Figure 6-4



Study Area
Alternative 3 Temporary Impact
Alternative 3 Permanent Impact
Photo Location and Direction
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

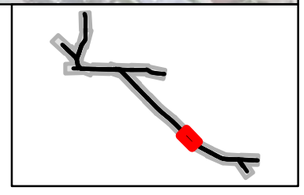
CWA Section 404
Jurisdictional Delineation
Alternative 3
March 2012
Figure 6-5



Study Area
Alternative 3 Temporary Impact
Alternative 3 Permanent Impact
Photo Location and Direction
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

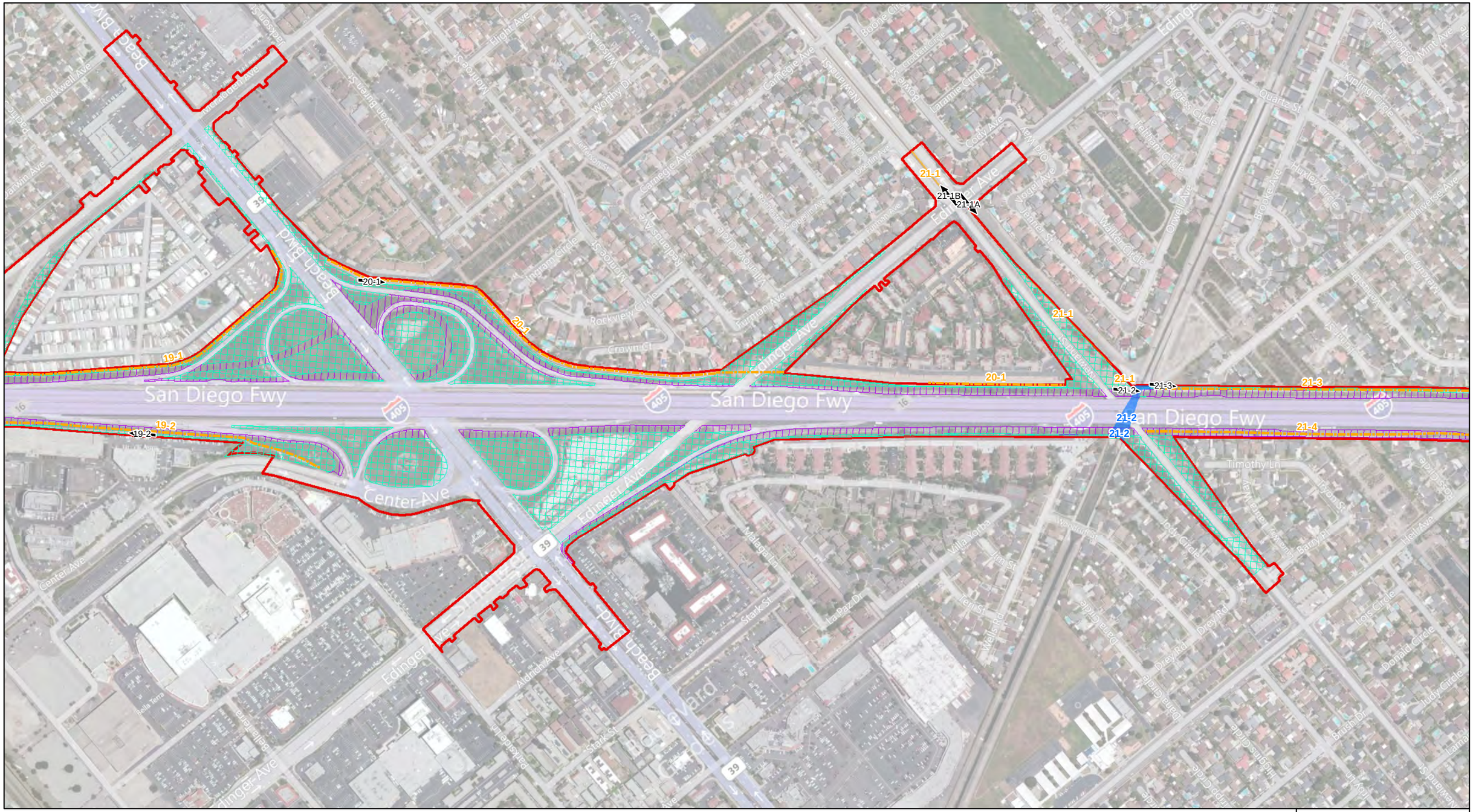
CWA Section 404
Jurisdictional Delineation
Alternative 3
March 2012
Figure 6-6



Study Area
Alternative 3 Temporary Impact
Alternative 3 Permanent Impact
Photo Location and Direction
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

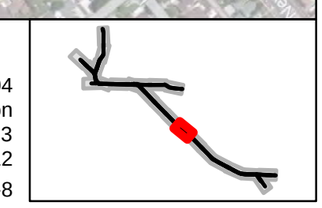
CWA Section 404
Jurisdictional Delineation
Alternative 3
March 2012
Figure 6-7



Study Area
Alternative 3 Temporary Impact
Alternative 3 Permanent Impact
Photo Location and Direction
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

CWA Section 404
Jurisdictional Delineation
Alternative 3
March 2012
Figure 6-8



Study Area
Alternative 3 Temporary Impact
Alternative 3 Permanent Impact
Photo Location and Direction
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

CWA Section 404
Jurisdictional Delineation
Alternative 3
March 2012
Figure 6-9

Study Area
Alternative 3 Temporary Impact
Alternative 3 Permanent Impact
Photo Location and Direction
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

CWA Section 404
Jurisdictional Delineation
Alternative 3
March 2012
Figure 6-10

Study Area
Alternative 3 Temporary Impact
Alternative 3 Permanent Impact
Photo Location and Direction
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

CWA Section 404
Jurisdictional Delineation
Alternative 3
March 2012
Figure 6-11

Study Area
Alternative 3 Temporary Impact
Alternative 3 Permanent Impact
Photo Location and Direction
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

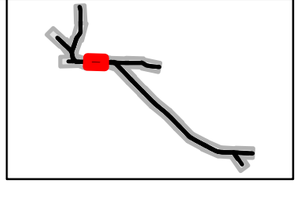
0 250 500 1,000 Feet

CWA Section 404
Jurisdictional Delineation
Alternative 3
March 2012
Figure 6-12

Study Area
Alternative 3 Temporary Impact
Alternative 3 Permanent Impact
Photo Location and Direction
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

CWA Section 404
Jurisdictional Delineation
Alternative 3
March 2012
Figure 6-13



Study Area
Alternative 3 Temporary Impact
Alternative 3 Permanent Impact
Photo Location and Direction
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

CWA Section 404
Jurisdictional Delineation
Alternative 3
March 2012
Figure 6-14

Study Area
Alternative 3 Temporary Impact
Alternative 3 Permanent Impact
Photo Location and Direction
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

CWA Section 404
Jurisdictional Delineation
Alternative 3
March 2012
Figure 6-15

Study Area
Alternative 3 Temporary Impact
Alternative 3 Permanent Impact
Photo Location and Direction
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

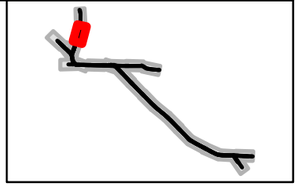
0 250 500 1,000 Feet

CWA Section 404
Jurisdictional Delineation
Alternative 3
March 2012
Figure 6-16

Study Area
Alternative 3 Temporary Impact
Alternative 3 Permanent Impact
Photo Location and Direction
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

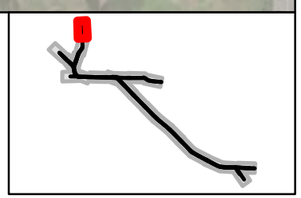
CWA Section 404
Jurisdictional Delineation
Alternative 3
March 2012
Figure 6-17



Study Area
Alternative 3 Temporary Impact
Alternative 3 Permanent Impact
Photo Location and Direction
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

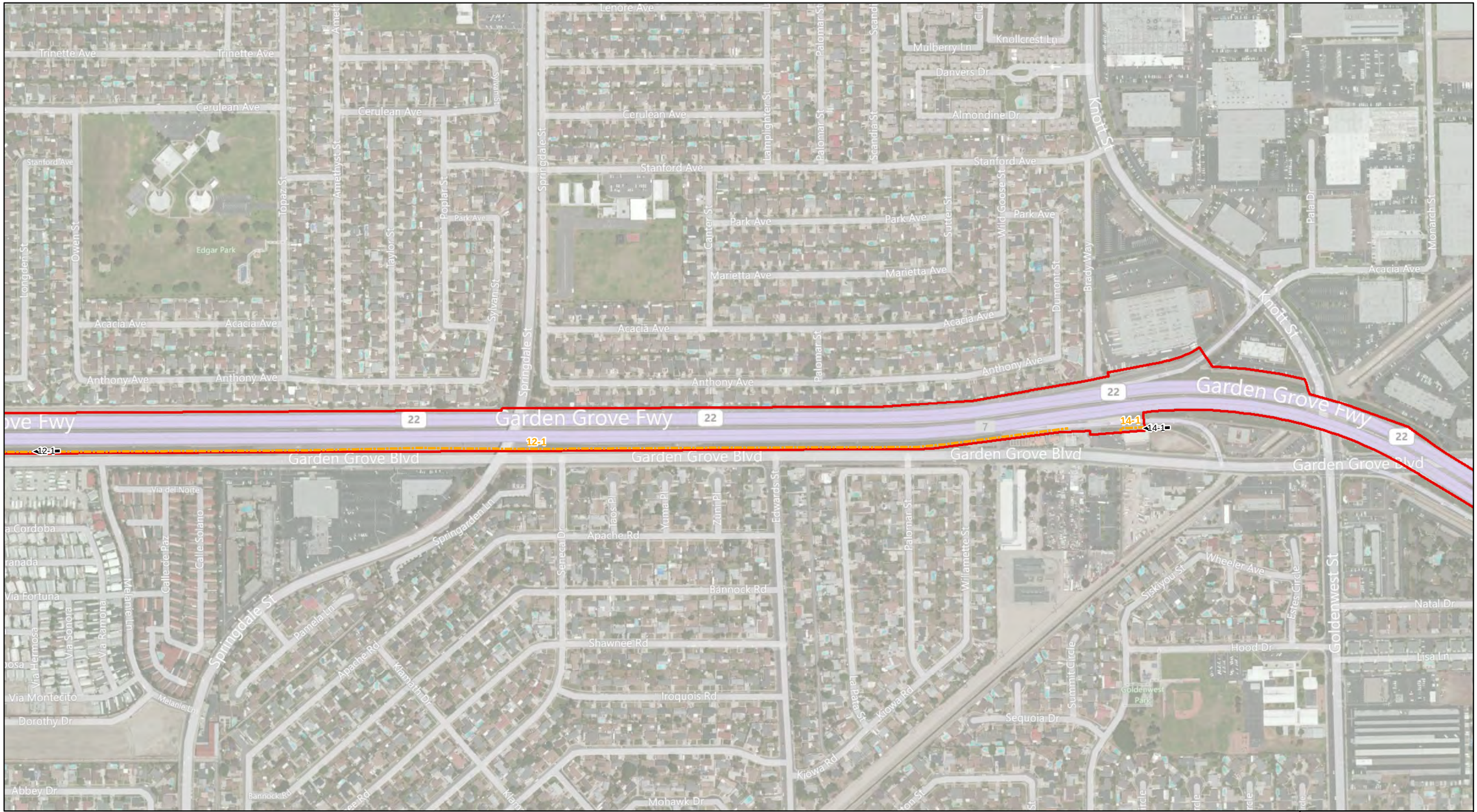
CWA Section 404
Jurisdictional Delineation
Alternative 3
March 2012
Figure 6-18



Study Area
Alternative 3 Temporary Impact
Alternative 3 Permanent Impact
Photo Location and Direction
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

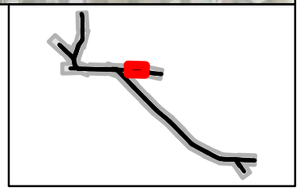
CWA Section 404
Jurisdictional Delineation
Alternative 3
March 2012
Figure 6-19



Study Area
Alternative 3 Temporary Impact
Alternative 3 Permanent Impact
Photo Location and Direction
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

CWA Section 404
Jurisdictional Delineation
Alternative 3
March 2012
Figure 6-20



Study Area
Alternative 3 Temporary Impact
Alternative 3 Permanent Impact
Photo Location and Direction
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

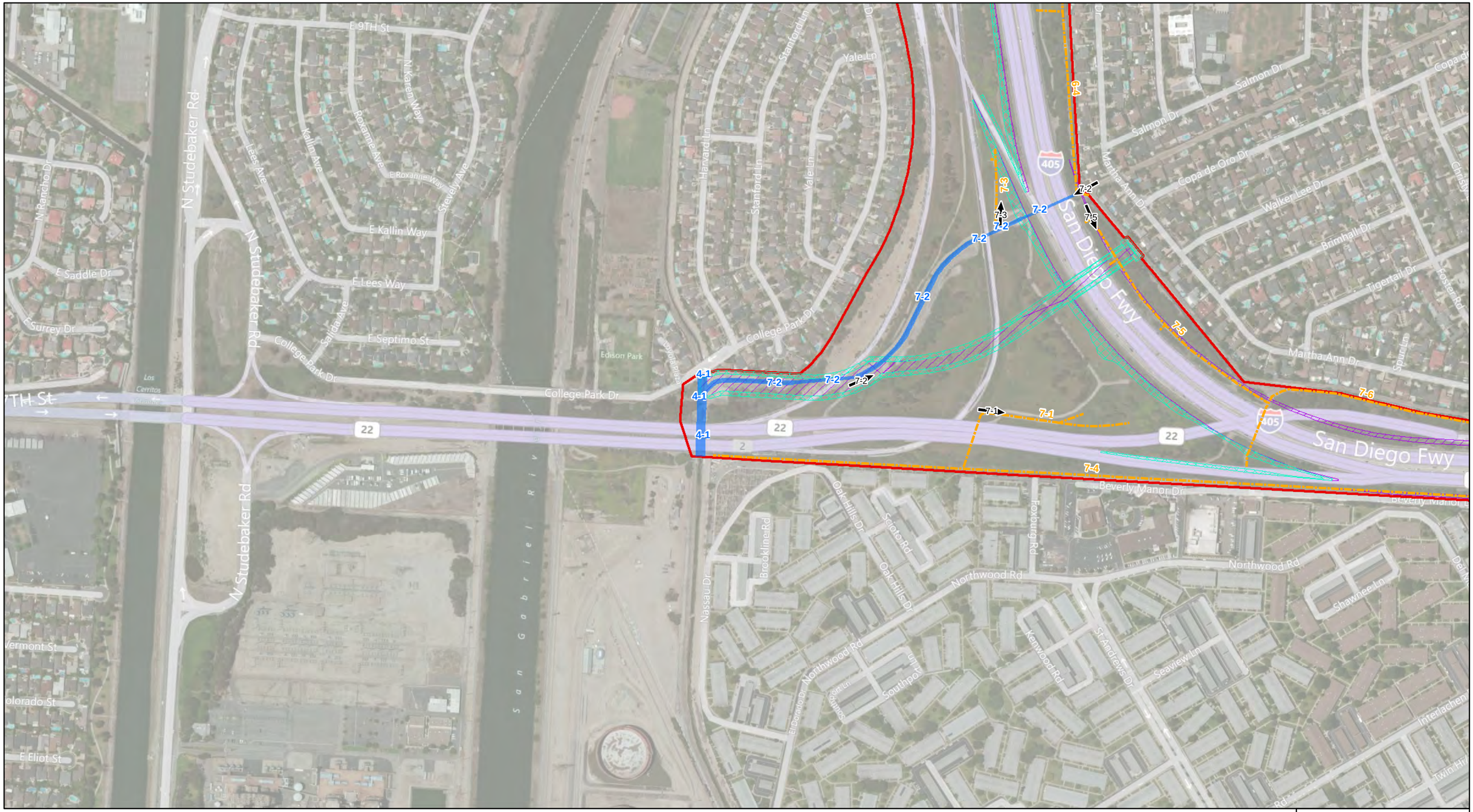
0 250 500 1,000 Feet

CWA Section 404
Jurisdictional Delineation
Alternative 3
March 2012
Figure 6-21

Study Area
Alternative 3 Temporary Impact
Alternative 3 Permanent Impact
Photo Location and Direction
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

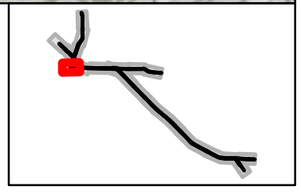
CWA Section 404
Jurisdictional Delineation
Alternative 3
March 2012
Figure 6-22



Study Area
Alternative 3 Temporary Impact
Alternative 3 Permanent Impact
Photo Location and Direction
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

CWA Section 404
Jurisdictional Delineation
Alternative 3
March 2012
Figure 6-23



5.1 WATERSHED ANALYSIS

The study area occurs at an approximate elevation range of 8 to 56 ft above mean seal level (msl) within relatively flat topography generally sloping up to a 2 % grade to the southwest. The overall watersheds encompassing the study area include: 1) San Gabriel (Hydrologic Unit Code [HUC] 18070106) which drains a 457,461-acre watershed, 2) Santa Ana (HUC 18070203), which drains a 1,080,874-acre watershed, 3) Seal Beach (HUC 18070201), which drains a 57,354-acre watershed, and 4) Newport Bay (HUC 18070204), which drains a 101,811-acre watershed.

The watersheds containing the study area are comprised mainly of densely-developed residential, commercial, and industrial areas. As a result, flows within the watersheds are channeled through constructed river systems (i.e., the lower San Gabriel and Santa Ana rivers) or through a complex system of constructed concrete-lined, earthen, plastic and/or rock rip rap flood-control drainages and culverts, all of which drain to tidal-influenced portions of drainages and bays, the nearest TNWs. Many of these flood-control drainages are identified as blue line features on USGS quadrangle maps. Generally proceeding from northwest to southeast within the study area, named blue line flood-control drainages include Coyote Creek, Los Alamitos Channel, Rossmoor Storm Channel, Los Cerritos Channel, San Gabriel River, Bolsa Chica Channel, Anaheim Barber City Channel, Westminster Channel, East Garden Grove Wintersburg Channel, Ocean View Channel, Fountain Valley Channel, Santa Ana River, Greenville Banning Channel, Gisler Storm Channel, and Santa Ana Dehli Channel (Figs. 4-1 through 4-23 and 8). These flood-control drainages intersect the study area within 5.9 miles or less of the Pacific Ocean and are all tributary to the Pacific Ocean. The majority of these flood-control drainages within the study area are in the FEMA's 100-year flood plain (FEMA 1998; Fig. 5) and are identified by the National Wetlands Inventory as Riverine (Fig. 7A and 7B). The FEMA 100-year flood plain map indicates the potential upper high water limits within a particular drainage or localized watershed.

5.2 SURFACE HYDROLOGY AND SOILS

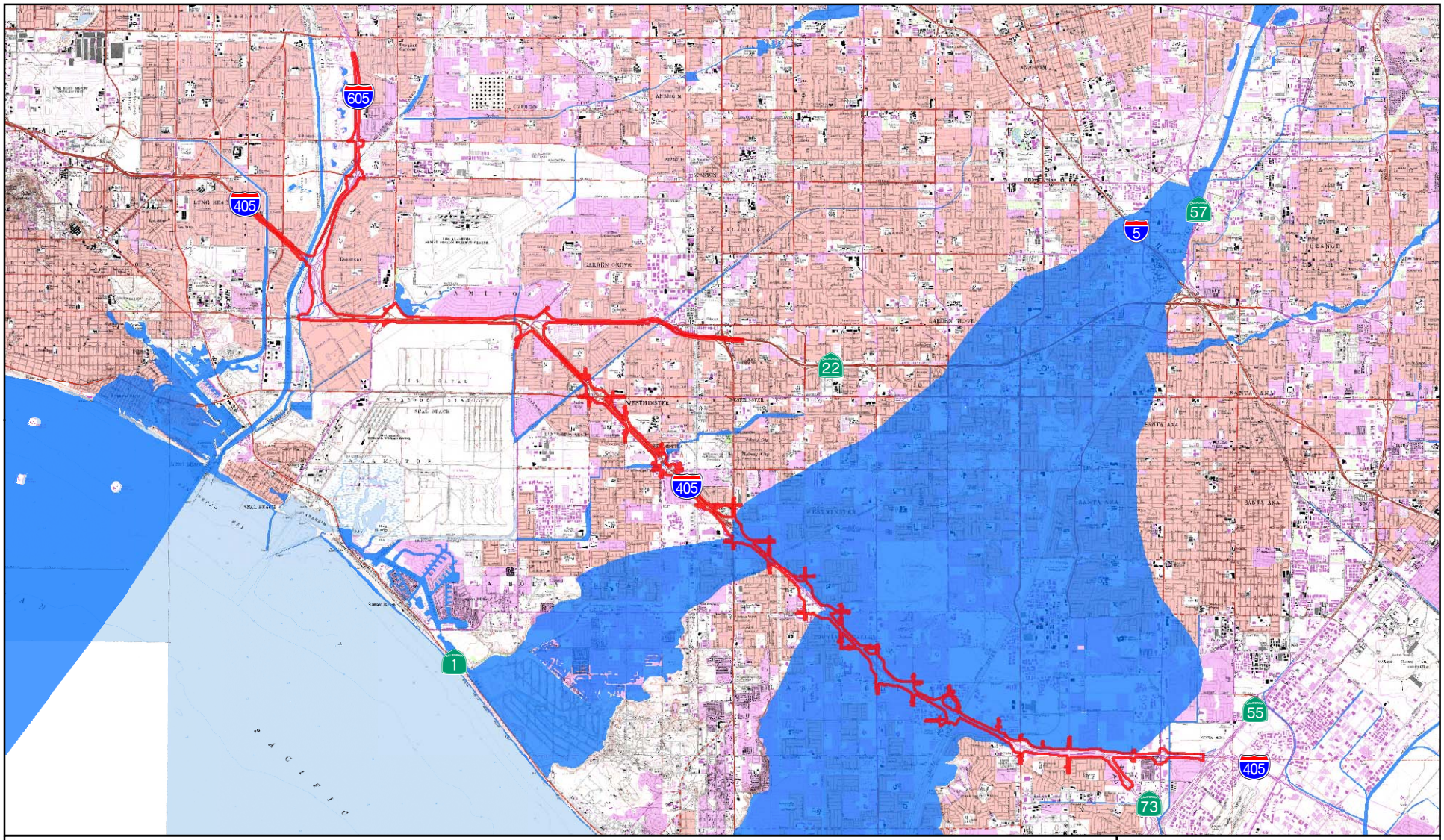
The regional climate within the vicinity of the study area consists of hot and dry summer months with relatively cool and wet winters. Seasonal rainfall occurs predominantly in the winter and spring months (Nov-April) and was below average prior to the 2009 surveys, and near average prior to the 2010 and 2011 surveys. The following precipitation data for the Long Beach Airport were utilized for this analysis (NWS 2011):

- Average annual precipitation measures 16.48 inches (data from 1939-2006);
- Seasonal precipitation prior to field work in 2009 (fall 2008 – spring 2009 season) measured 9.41 inches, which was 60 % of average precipitation (data from 1971-2000);
- Seasonal precipitation prior to field work in 2010 (fall 2009 – spring 2010 season) measured 15.60 inches, which was 94 % of average precipitation; and
- Seasonal precipitation prior to field work in 2011 (fall 2010 – winter 2011 season) measured 13.78 inches, which was 84 % of average precipitation.

Hydrology during the summer and early fall months is provided by surface water runoff from residential and commercial discharges, as well as from periodic summer precipitation events.

Two regional soil map units occur within the study area: Urban land-Sorrento-Hanford (s1026) and Zamora-Urban land-Ramona (s1033) (Fig. 6; USDA-NRCS 2006). None of the soil series within these map units are classified as hydric soils.

FIGURE 7 – FEMA 100-YEAR FLOOD ZONE



Legend

- Study Area
- FEMA 100-Year Flood Zone

0 1 2
Miles

FIGURE 7
FEMA 100-YEAR FLOOD ZONE

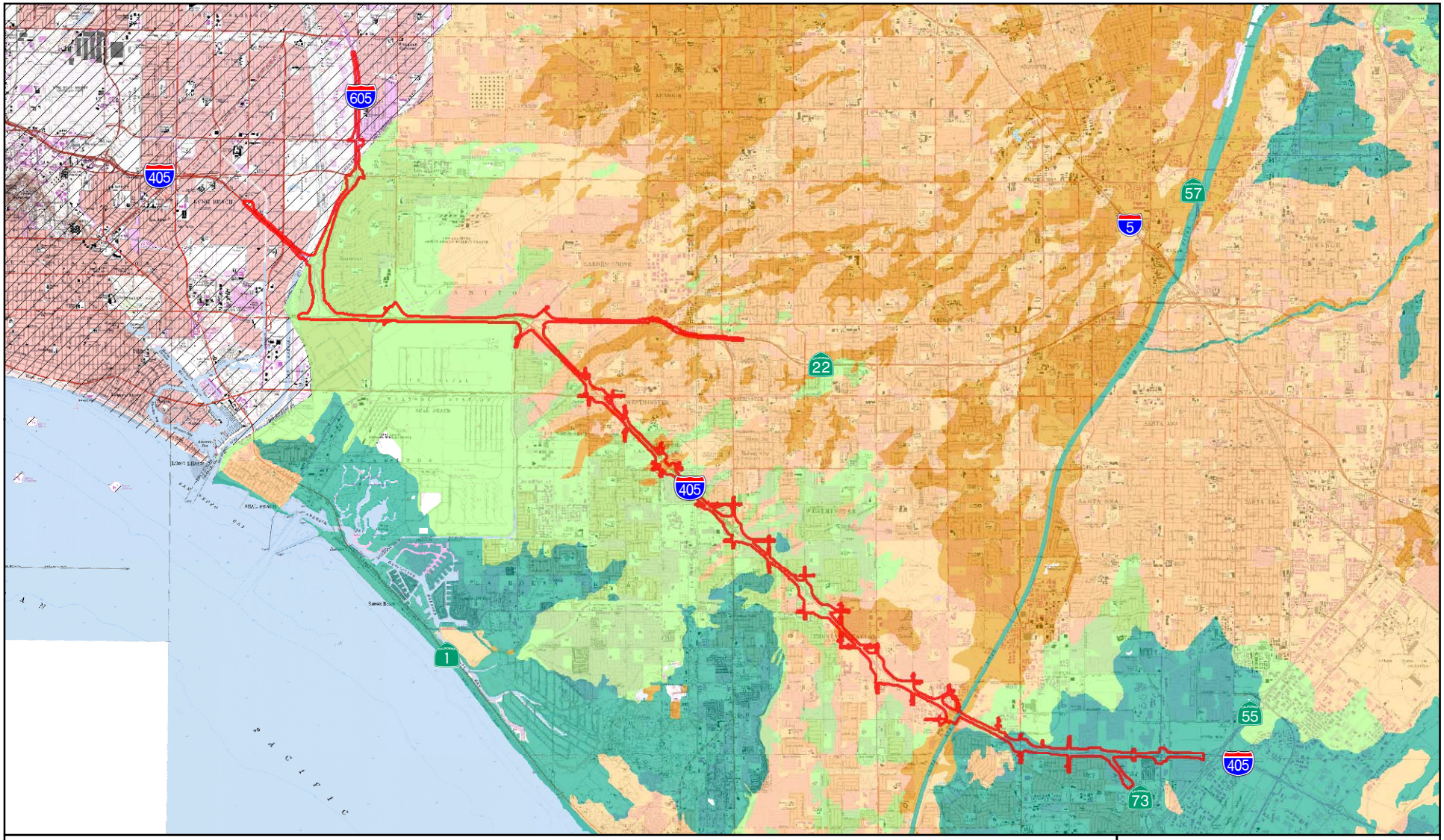
INTERSTATE 405 IMPROVEMENT PROJECT

Project No.: 29866416

Date: February 2011

Source: FEMA Q3 Flood Data (1995)

FIGURE 8 – SOILS



Legend

Study Area

Soil Permeability

- Soil Group A - High Infiltration Rate
- Soil Group B - Moderate-High Infiltration Rate
- Soil Group C - Moderate-Low Infiltration Rate
- Soil Group D - Low Infiltration Rate
- Soil Data Unavailable

N

0 1 2

Miles

FIGURE 8

SOILS

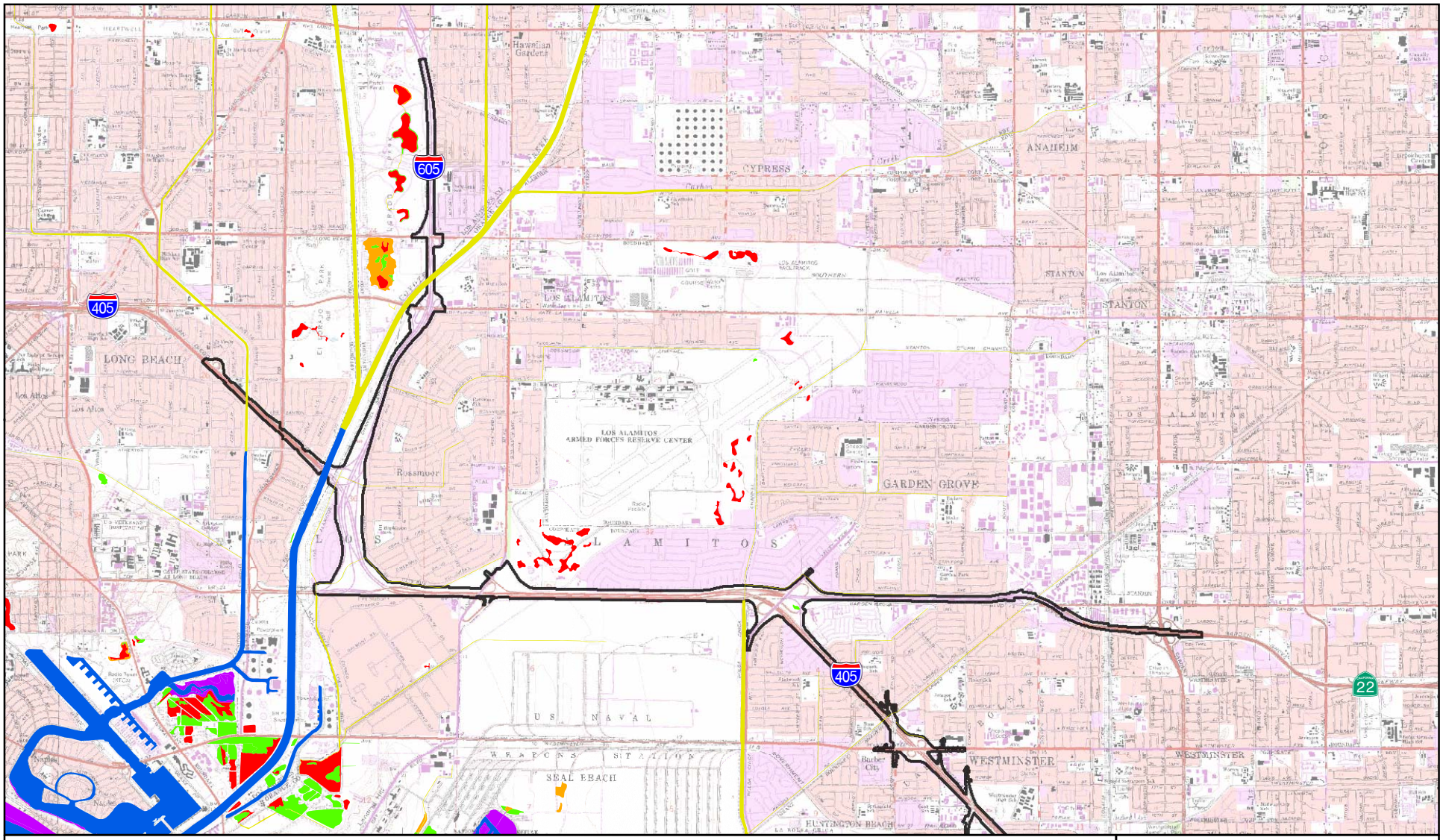
INTERSTATE 405 IMPROVEMENT PROJECT

Project No.: 29866416

Date: February 2011

Source: Natural Resources Conservation Service, Orange & Western Part of Riverside Counties Soil Survey (ca678), 2005

FIGURE 9A – NATIONAL WETLAND INVENTORY



Legend

- Study Area

National Wetland Inventory

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Riverine

N

0 1 2

Miles

FIGURE 9A
NATIONAL WETLAND INVENTORY

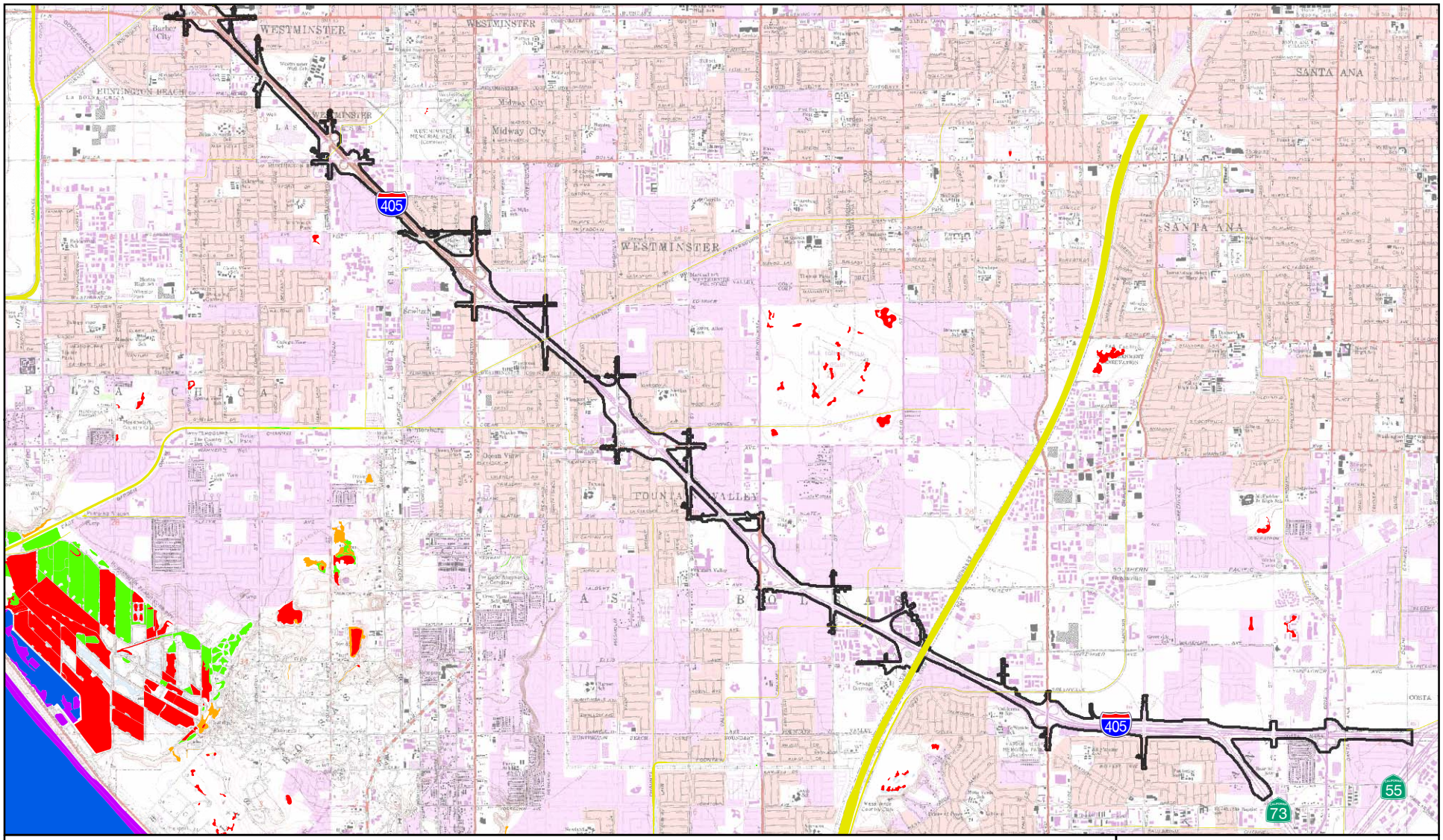
INTERSTATE 405 IMPROVEMENT PROJECT

Project No.: 29866416

Date: February 2011

Source: U.S. Fish and Wildlife Service, National Wetland Inventory, Classification of Wetlands and Deepwater Habitats of the United States. (2009)

FIGURE 9B – NATIONAL WETLAND INVENTORY



Legend

- Study Area

National Wetland Inventory

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Riverine

N

0 1 2

Miles

FIGURE 9B
NATIONAL WETLAND INVENTORY

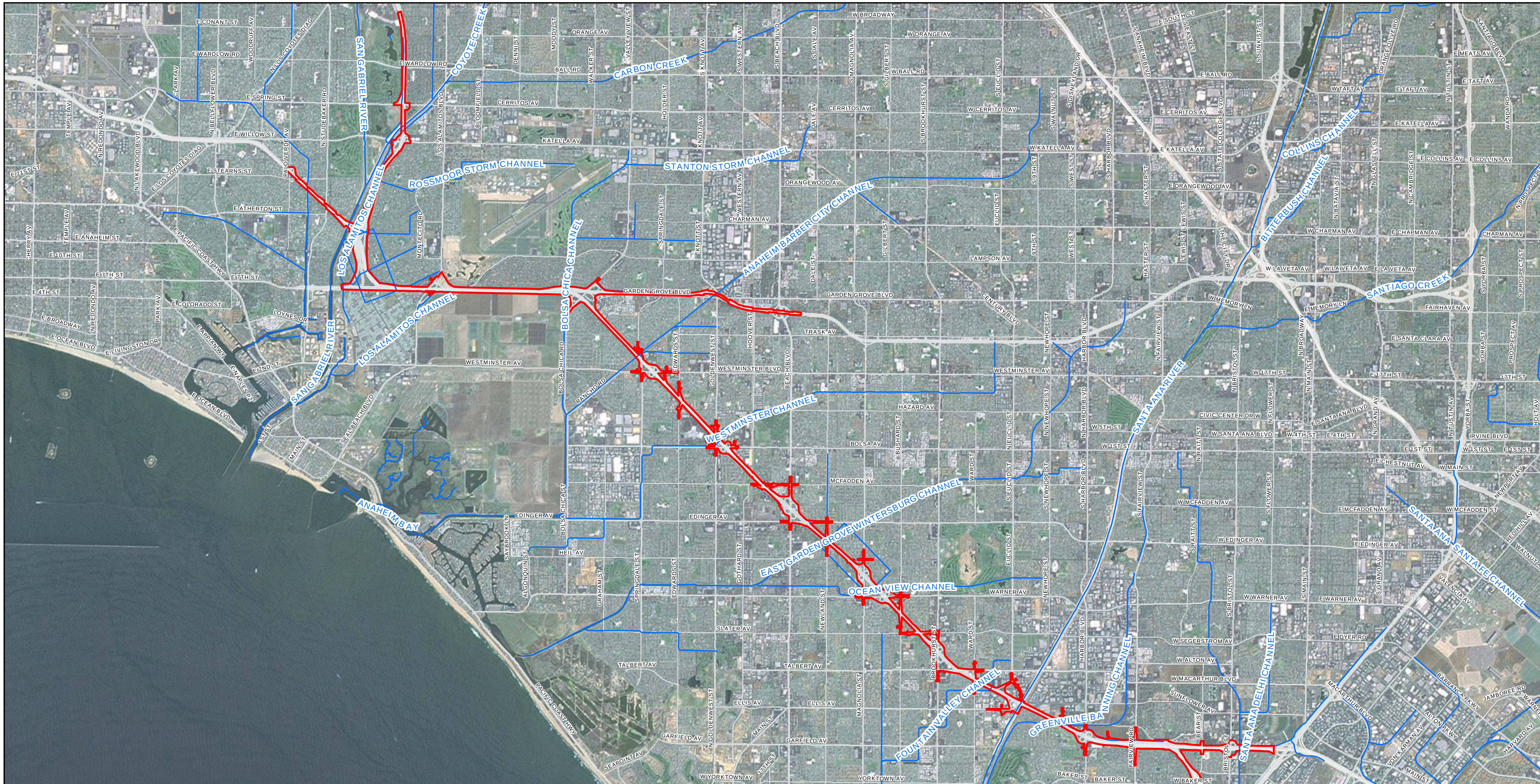
INTERSTATE 405 IMPROVEMENT PROJECT

Project No.: 29866416

Date: February 2011

Source: U.S. Fish and Wildlife Service, National Wetland Inventory, Classification of Wetlands and Deepwater Habitats of the United States. (2009)

FIGURE 10 – MAJOR HYDROLOGIC FEATURES



Legend

- Study Area
- Major Hydrologic Feature

0 1 2
Miles

FIGURE 10

MAJOR HYDROLOGIC FEATURES

INTERSTATE 405 IMPROVEMENT PROJECT

Project No.: 29866416

Date: February 2011

5.3 DETERMINATION OF USACE JURISDICTION

A total of 115 features within 4 watersheds (i.e., San Gabriel River-Coyote Creek, Anaheim Bay-Huntington Harbour; Santa Ana River; and Newport Bay) were observed within the study area, consisting of three feature categories: potential jurisdictional features, features requiring a significant nexus determination, and potential non-jurisdictional features. Nineteen potential WoUS occur within the study area (Figs. 4-1 through 6-23 and Table 2). Seventeen of these potential WoUS drainage features are classified as RPWs tributary to a Traditional Navigable Water. Each of these RPWs contains an ordinary high water mark and is subject to CWA Section 404 jurisdiction because they are RPWs tributary to a TNW. Detailed descriptions of RPW features, which are indicated by an asterisk within Table 2, are provided in Section 5.3.1. There are no areas within the study area that are within RHA Section 10 jurisdiction.

Two potential WoUS features are non-RPW drainage features containing a defined OHWM and tributary to a TNW (Table 2). These non-RPW drainage features were determined to have a significant nexus with a TNW. Each is discussed in more detail in Section 5.5 and individually characterized within Appendix C. Total CWA Section 404 jurisdiction within the study area is detailed within Table 2.

The remaining 98 features are all potentially non-jurisdictional because they are non-RPW features having no significant nexus to a TNW and isolated features that do not drain to or abut a jurisdictional tributary or TNW.

TABLE 2. SUMMARY OF FEATURES OBSERVED WITHIN THE STUDY AREA

Feature ID	Feature description	OHWM width (ft)	Length in Study Area (ft)	USACE CWA 404 (Other Waters)	USACE CWA 404 (Wetland)
San Gabriel River-Coyote Creek Watershed					
1-1	Flood Control Facility: 8-ft wide concrete drainage; non-RPW with no significant nexus; unvegetated; dry during survey (26 April 2010); drains road runoff south to culvert, then underground southwest to Feature 1-2 (Photo 1-1).	none	168	--	--
1-2	Flood Control Facility: 16-ft wide concrete drainage; non-RPW with no significant nexus; unvegetated; 1 inch standing water present during survey (26 April 2010); drains road and landscape runoff from developed and park areas to south to Coyote Creek and the San Gabriel River (A Traditional Navigable Water [TNW]) (Photo 1-2).	none	6,085	--	--
3-1	Ditch: 6-ft wide concrete v-ditch; non-RPW with no significant nexus; no OHWM; unvegetated; dry during survey (26 April 2010); drains landscape and road runoff south to Alamitos Drainage and the San Gabriel River (a RPW) (Photo 3-1).	none	5,489	--	--
3-2	Ditch: 2-ft wide concrete v-ditch; non-RPW with no significant nexus; no OHWM; drains road and landscape runoff to Los Alamitos Channel and the San Gabriel River (a RPW); unvegetated (Photo 3-2).	none	397	--	--

Feature ID	Feature description	OHWM width (ft)	Length in Study Area (ft)	USACE CWA 404 (Other Waters)	USACE CWA 404 (Wetland)
3-3	Ditch: 3-ft concrete v-ditch; non-RPW with no significant nexus; no OHWM; drains road and landscape runoff to Los Alamitos Channel and the San Gabriel River (a RPW); unvegetated (no photo).	none	211	--	--
3-4	Ditch: 4-ft concrete v-ditch; non-RPW with no significant nexus; no OHWM; drains road and landscape runoff to Feature 3-5 and the San Gabriel River (a RPW); unvegetated (no photo).	none	357	--	--
3-5	Flood Control Facility: 30-ft-wide concrete drainage; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff to Los Alamitos Channel and the San Gabriel River (a RNW) (Photo 3-5).	none	483	--	--
3-6*	Flood Control Facility: Coyote Creek; 150-ft wide concrete drainage; blue line; RPW; unvegetated; drains commercial, residential, and road runoff to San Gabriel River, a RPW (Photo 3-6).	150	333	1.22	--
4-1*	Flood Control Facility and Detention Basin: Los Alamitos Channel; blue line; earthen basin; RPW; 2 inches flowing water during survey (27 April 2010); drains road, residential, and commercial runoff to the San Gabriel River, a RPW; upland vegetated (Photos 4-1a and 4-1b).	220	4,878	12.45	--
4-2	Flood Control Facility: Rossmoor Storm Channel; blue line; 18-ft wide concrete drainage; unvegetated; drains to Los Alamitos Channel and San Gabriel River, a RNW (Photo 4-2).	none	18	--	--
4-3*	Flood Control Facility: Mainway Dr. Channel; 15-ft wide concrete drainage; unnamed blue line; RPW; drains west to Los Alamitos Channel and San Gabriel River, a RPW; drains surface water runoff (Photo 4-3).	4	974	0.09	--
4-4*	Flood Control Facility and Wetland: San Gabriel River; blue line; RPW; earthen and rock riprap drainage with included wetland (see Wetland Data Sheet SGR-W and SGR-U and Photos 4-4a and 4-4b)	258	384	1.30	0.93
4-5	Flood Control Facility: 5-ft-wide concrete drainage; non-RPW with no significant nexus; unvegetated; drains irrigation runoff to Mainway Drive Channel, Los Alamitos Channel, and San Gabriel River, a TNW (no photo).	none	1,103	--	--

Feature ID	Feature description	OHWM width (ft)	Length in Study Area (ft)	USACE CWA 404 (Other Waters)	USACE CWA 404 (Wetland)
4-6	Flood Control Facility: 11-ft concrete drainage; non-RPW with no significant nexus; unvegetated; drains storm and irrigation runoff to Los Alamitos Channel and San Gabriel River, a TNW (no photo).	4	620	--	--
5-1*	Flood Control Facility: Los Cerritos Channel; 94-ft-wide; blue line; concrete drainage; RPW, 1 inch flowing water during survey (27 April 2010); unvegetated; drains residential, industrial, and road runoff to Los Cerritos Channel and Alamitos Bay , both RPWs (Photo 5-1).	94	237	0.50	--
5-2	Ditch: 4-ft-wide concrete v-ditch; non-RPW with no significant nexus; no OHWM; unvegetated; dry during survey (26 April 2010); drains storm water from residential lands to street gutter that drains to Los Cerritos Channel, a RPW (Photo 5-2).	none	390	--	--
5-3	Ditch: 4-ft-wide concrete v-ditch; non-RPW with no significant nexus; unvegetated; dry during survey (26 April 2010); drains residential and roadway runoff to street gutter that drains to Los Cerritos Channel, a RPW (Photo 5-3).	2	608	--	--
5-4	Ditch: 1-ft-wide concrete v-drainage; non-RPW with no significant nexus; unvegetated; dry during survey (27 April 2010); drains commercial and residential runoff to Los Cerritos Channel (an RPW) (Photo 5-4)	none	565	--	--
5-5	Ditch: 2-ft wide concrete v-drainage; non-RPW with no significant nexus; unvegetated; dry during survey (27 April 2010); drains roadway and landscape runoff to street gutter and Los Cerritos Channel, a RPW (Photo 5-5).	none	263	--	--
6-1	Ditch: 2-ft wide concrete v-ditch; non-RPW with no significant nexus; unvegetated; dry during survey (27 April 2010); drains roadway and landscape runoff to street gutter that drains to Los Cerritos Channel, a RPW (Photo 6-1).	1	1113	--	--
6-2	Flood Control Facility: 16-ft-wide concrete drainage; non-RPW with no significant nexus; un-vegetated; dry during survey (27 April 2010); drains road runoff to San Gabriel River, an RPW (Photo 6-2).	none	756	--	--
6-3	Flood Control Facility: 8-ft-wide concrete drainage; non-RPW with no significant nexus; unvegetated; dry during survey (26 April 2010); drains road runoff to Los Alamitos Channel and San Gabriel River, a TNW (no photo).	none	417	--	--

Feature ID	Feature description	OHWM width (ft)	Length in Study Area (ft)	USACE CWA 404 (Other Waters)	USACE CWA 404 (Wetland)
6-4	Ditch: 8-ft wide concrete v-drainage; non-RPW with no significant nexus; unvegetated; drains irrigation and road runoff to Copa De Oro Channel, Los Alamitos Channel and the San Gabriel River, an RPW (no photo).	2	3,858	--	--
7-1	Ditch: 8-ft wide concreted v-ditch; non-RPW with no significant nexus; unvegetated; dry during survey (28 April 2010); drains road runoff to Los Alamitos Channel and the San Gabriel River, a RPW (Photo 7-1).	none	1,127	--	--
7-2*	Flood Control Facility: Copa De Oro Channel; 12-ft-wide concrete (east of I-405) and 40-ft-wide earthen (west of I-405); unnamed blue line; RPW; drains surface water and irrigation runoff to Los Alamitos Channel and San Gabriel River (an RPW) (Photos 7-2a and 7-2b).	3-25	2,233	1.02	--
7-3	Ditch: 4-ft-wide concrete v-ditch; non-RPW with no significant nexus; unvegetated; dry during survey (27 April 2010); drains landscape runoff to Copa De Oro Channel (Photo 7-3).	none	374	--	--
7-4	Ditch: 2-ft-wide concrete v-ditch; non-RPW with no significant nexus; unvegetated; drains surface and irrigation runoff to Los Alamitos Channel and San Gabriel River (a RPW) (no photo).	none	5,210	--	--
7-5	Ditch: 6-ft-wide concrete v-ditch; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff to Los Alamitos Channel and the San Gabriel River (an RPW) (Photo 7-5).	none	1,683	--	--
7-6	Ditch: 2-ft-wide concrete v-ditch; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff to Los Alamitos Channel and the San Gabriel River (an RPW) (no photo).	none	1,512	--	--
7-7	Flood Control Facility: Seal Beach Boulevard Channel; 12-ft-wide concrete drainage; unnamed blue line; unvegetated; drains surface water and irrigation runoff to Copa De Oro Channel, Los Alamitos Channel, and the San Gabriel River (an RPW) (Photo 7-7).	none	577	--	--
8-1	Ditch: 8-ft-wide concrete v-ditch; non-RPW with no significant nexus; unvegetated; drains surface and irrigation runoff to street gutter, Los Alamitos Channel, and the San Gabriel River (an RPW) (Photo 8-1).	none	466	--	--

Feature ID	Feature description	OHWM width (ft)	Length in Study Area (ft)	USACE CWA 404 (Other Waters)	USACE CWA 404 (Wetland)
8-2[1]	Flood Control Facility: 7-ft-wide concrete channel; non-RPW with significant nexus; unvegetated; drains irrigation and surface runoff to Los Alamitos Channel and San Gabriel River (an RPW). (Photo 8-2).	2	9306	0.43	--
8-3	Flood Control Facility: 6-ft-wide concrete drainage; non-RPW with significant nexus; unvegetated; drains irrigation and surface runoff. underground through culvert to Los Alamitos Channel and the San Gabriel River (an RPW).	none	1,092	--	--
9-1	Flood Control Facility and Detention basin: 6-ft-wide concrete v-drainage; non-RPW with no significant nexus; upland vegetated detention basin; drains road and irrigation runoff to Los Alamitos Channel and the San Gabriel River (an RPW) (Photo 9-1).	none	1,366	--	--
9-2	Flood Control Facility: 2-ft wide concrete box drainage; non-RPW with no significant nexus; unvegetated; drains irrigation and road runoff underground through culvert to Los Alamitos Channel and the San Gabriel River, a RPW (no photo).	none	6,463	--	--
Anaheim Bay-Huntington Harbour Watershed					
10-1*	Flood Control Facility: Bolsa Chica Channel; 38-ft-wide; blue line; RPW; concrete/earthen/rock riprap south of I-405; drains to tidally-influenced portion of Bolsa Chica Channel (an RPW) (Photo 10-1).	38	583	0.50	--
10-2[2]	Flood Control Facility: 12-ft wide concrete drainage; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff to Bolsa Chica Channel (an RPW) (no photo).	none	1,706	--	--
10-3	Flood Control Facility: 15-ft-wide concrete drainage; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff to Bolsa Chica Channel (an RPW) (Photo 10-3).	none	590	--	--
10-4	Ditch: 8-ft wide concrete v-ditch; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff to Bolsa Chica Channel (an RPW) (no photo).	none	444	--	--
10-5	Flood Control Facility: 27-ft-wide concrete drainage; unvegetated; drains irrigation and surface runoff to Bolsa Chica Channel (an RPW) (Photo 10-5).	none	1,102	--	--
11-1*	Flood Control Facility: 22-ft-wide concrete drainage; 1-inch standing water during survey (28 April 2010); unvegetated; drains roadside and landscape runoff to Bolsa Chica Channel (an RPW) (Photo 11-1).	none	2,781	--	--

Feature ID	Feature description	OHWM width (ft)	Length in Study Area (ft)	USACE CWA 404 (Other Waters)	USACE CWA 404 (Wetland)
11-2	Flood Control Facility: 12-ft-wide concrete drainage; non-RPW with no significant nexus; unvegetated; dry during survey (28 April 2010); drains landscape and road runoff to Bolsa Chica Channel (an RPW) (Photo 11-2).	none	5,633	--	--
11-3	Flood Control Facility: 8-ft-wide concrete drainage; non-RPW with no significant nexus; drains road runoff to Feature 11-1 and Bolsa Chica Channel, a RPW (Photo 11-3).	none	30	--	--
11-4	Flood Control Facility: 12-ft-wide concrete v-drainage; non-RPW with no significant nexus; unvegetated; dry during survey (28 April 2010); drains landscape and road runoff to Bolsa Chica Channel (an RPW) (Photo 11-4).	none	1,382	--	--
11-5	Flood Control Facility: 7-ft-wide concrete drainage; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff to Bolsa Chica Channel (an RPW) (no photo).	none	574	--	--
11-6	Flood Control Facility: 15-ft-wide concrete drainage; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff to Bolsa Chica Channel (an RPW) (no photo).	none	1,013	--	--
11-7	Flood Control Facility: 7-ft-wide concrete drainage; non-RPW with no significant nexus; unvegetated; drains irrigation and commercial surface runoff to Bolsa Chica Channel (an RPW) (Photo 11-7).	none	5,141	--	--
12-1	Ditch: 2-ft-wide concrete v-ditch; non-RPW with no significant nexus; unvegetated; dry during survey (26 April 2010); drains irrigation and road runoff to Anaheim Barber City Channel and Bolsa Chica Channel (an RPW) (Photo 12-1).	none	6,005	--	--
14-1	Ditch: 4-ft-wide concrete v-ditch; no OHWM; non- RPW with no significant nexus; dry during survey (26 April 2010); unvegetated; drains irrigation and road runoff to Anaheim Barber City Channel (Photo 14-1).	none	132	--	--
14-2	Flood Control Facility: 6-ft-wide concrete drainage; non-RPW with no significant nexus; unvegetated; dry during survey (26 April 2010); drains landscape, commercial, and road runoff underground to Anaheim Barber City Channel and Bolsa Chica Channel (an RPW) (Photo 14-2).	none	1,484	--	--

Feature ID	Feature description	OHWM width (ft)	Length in Study Area (ft)	USACE CWA 404 (Other Waters)	USACE CWA 404 (Wetland)
16-1	Flood Control Facility: 16-ft-wide concrete drainage; non-RPW with significant nexus; unvegetated; drains irrigation and residential surface runoff to Anaheim Barber City Channel and Bolsa Chica Channel (an RPW) (no photo).	2	242	0.01	--
16-2*	Flood Control Facility: Anaheim Barber City Channel; 40-ft-wide concrete box drainage; RPW; blue line; unvegetated; drains surface runoff to Bolsa Chica Channel (an RPW) (Photo 16-2).	40	483	0.47	--
16-3*	Flood Control Facility: Westminster Avenue Channel; 34-ft-wide concrete drainage; RPW; blue line; unvegetated; drains irrigation and surface runoff to Anaheim Barber City Channel and Bolsa Chica Channel (an RPW) (Photo 16-3).	5	1,218	0.14	--
16-4	Flood Control Facility: 15-ft-wide concrete drainage; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff to Westminster Avenue Channel, Anaheim Barber City Channel and Bolsa Chica Channel (an RPW) (no photo).	none	1,920	--	--
16-5	Flood Control Facility: 6-ft-wide concrete drainage; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff underground through culvert to Anaheim Barber City Channel and Bolsa Chica Channel (an RPW) (Photo 16-5).	none	644	--	--
16-6	Ditch: 2-ft-wide concrete v-ditch; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff underground through culvert to Anaheim Barber City Channel and Bolsa Chica Channel (an RPW) (Photo 16-6).	none	3,084	--	--
17-1	Ditch: 2-ft-wide concrete v-ditch; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff to Anaheim Barber City Channel and Bolsa Chica Channel (an RPW) (Photo 17-1).	none	429	--	--
17-2	Flood Control Facility: 4-ft-wide concrete v-drainage; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff to street gutter (Photo 17-2).	none	1,704	--	--
17-3	Ditch: 4-ft-wide concrete v-ditch; no OHWM; non- RPW with no significant nexus; unvegetated; drains surface runoff underground through culvert to Bolsa Chica Channel (an RPW) (Photo 17-3).	none	1,313	--	--

Feature ID	Feature description	OHWM width (ft)	Length in Study Area (ft)	USACE CWA 404 (Other Waters)	USACE CWA 404 (Wetland)
17-4	Ditch: 4-ft-wide earthen ditch; no OHWM; non-RPW with no significant nexus; upland vegetated; drains surface runoff to Bolsa Chica Channel (an RPW) (Photo 17-4).	none	451	--	--
17-5	Ditch: 4-ft-wide concrete v-ditch; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff to Bolsa Chica Channel (an RPW) (Photo 17-5).	none	1,004	--	--
18-1	Ditch: 4-ft-wide concrete and earthen v-drainage; non-RPW with no significant nexus; unvegetated; drains surface runoff underground through culvert to Westminster Channel (an RPW) (Photo 18-1).	none	2,547	--	--
18-2	Ditch: 4-ft-wide concrete v-ditch; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff underground through culvert to Westminster Channel (an RPW) (Photo 18-2).	none	2,458	--	--
18-3	Flood Control Facility: 4-ft-wide concrete drainage; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff to Westminster Channel (an RPW) (Photo 18-3).	none	810	--	--
18-4*	Flood Control Facility: Westminster Channel; concrete box drainage; blue line; RPW; unvegetated; drains surface runoff to tidal portions of the drainage (a TNW) (Photo 18-4).	30	658	0.50	--
18-5	Flood Control Facility: 12-ft-wide concrete drainage; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff underground through culvert to Westminster Channel (an RPW) (Photo 18-5).	none	1,052	--	--
18-6	Ditch: 1-ft-wide concrete ditch; no OHWM; non- RPW with no significant nexus; unvegetated; drains irrigation and surface runoff underground to Westminster Channel (an RPW) (Photo 18-6).	none	564	--	--
18-7	Ditch: 3-ft-wide concrete v-ditch; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff underground through culvert to Westminster Channel (an RPW) (no photo).	none	1,159	--	--
18-8	Flood Control Facility: 4-ft-wide concrete drainage; non-RPW with no significant nexus; unvegetated; drains irrigation runoff underground through culvert to Westminster Channel (an RPW) (Photo 18-8).	none	2,629	--	--

Feature ID	Feature description	OHWM width (ft)	Length in Study Area (ft)	USACE CWA 404 (Other Waters)	USACE CWA 404 (Wetland)
19-1	Ditch: 4-ft-wide concrete v-ditch; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff underground through culvert to Westminster Channel (an RPW) (Photo 19-1).	none	3,313	--	--
19-2	Ditch: 5-ft-wide concrete v-ditch; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff underground through culvert to Westminster Channel (an RPW) (Photo 19-2).	none	3,108	--	--
20-1	Flood Control Facility: 20-ft-wide concrete drainage; unvegetated; drains irrigation and surface runoff to East Garden Grove Wintersburg Channel (an RPW) (Photo 20-1).	none	3,039	--	--
21-1	Flood Control Facility: 35-ft-wide rock riprap and concrete drainage; 6 inches flowing water during survey (4 August 2009); no significant nexus; low density hydrophytic vegetation between riprap; drains residential and road runoff to East Garden Grove Wintersburg Channel (an RPW) (Photos 21-1a and 21-1b).	none	1,400	--	--
21-2*	Flood Control Facility: East Garden Grove Wintersburg Channel; 26- to 65-ft-wide concrete drainage north of I-405; 52-ft-wide concrete drainage south of I-405; blue line; RPW; 2 inches flowing water present during survey (4 August 2009); unvegetated within study area; drains surface runoff to tidally influenced portion of the Channel (Photo 21-2).	26-65	267	0.14	--
21-3	Flood Control Facility: 12-ft-wide concrete drainage; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff to East Garden Grove Wintersburg Channel (an RPW) (Photo 21-3).	none	1,994	--	--
21-4	Flood Control Facility: 10-ft-wide concrete v-drainage; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff to East Garden Grove Wintersburg Channel (an RPW).	none	1,816	--	--
21-5	Flood Control Facility: Heil Avenue Storm Channel; 18-ft wide concrete box drainage; non-RPW with no significant nexus; unvegetated; drains surface runoff to East Garden Grove Wintersburg Channel (an RPW) (Photo 21-5).	none	590	--	--

Feature ID	Feature description	OHWM width (ft)	Length in Study Area (ft)	USACE CWA 404 (Other Waters)	USACE CWA 404 (Wetland)
22-1	Ditch: 4-ft-wide concrete v-ditch; non-RPW with no significant nexus; unvegetated; drains irrigation and road runoff to East Garden Grove Wintersburg Channel (an RPW) (Photo 22-1).	none	492	--	--
22-2	Flood Control Facility: 8-ft-wide concrete drainage; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff to East Garden Grove Wintersburg Channel (an RPW) (Photo 22-2).	none	1,953	--	--
22-3	Flood Control Facility: 4-ft-wide concrete drainage; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff to Ocean View Channel and East Garden Grove Wintersburg Channel (an RPW) (Photo 22-3).	none	1,809	--	--
22-4	Ditch: 5-ft-wide concrete v-ditch; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff underground to East Garden Grove Wintersburg Channel (an RPW) (no photo).	none	573	--	--
22-5	Ditch: 8-ft-wide concrete v-ditch; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff to Ocean View Channel and East Garden Grove Wintersburg Channel (an RPW) (Photo 22-5).	none	749	--	--
22-7[2]	Flood Control Facility: 12-ft-wide concrete box drainage; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff to Ocean View Channel and East Garden Grove Wintersburg Channel (an RPW) (no photo).	none	1,312	--	--
23-1*	Flood Control Facility: Ocean View Channel; 25-ft-wide concrete box drainage; blue line; RPW; unvegetated; drains irrigation and surface runoff underground to East Garden Grove Wintersburg Channel (an RPW) (Photo 23-1).	20	466	0.86	--
Santa Ana River Watershed					
22-6[1]	Flood Control Facility: 5-ft-wide concrete drainage; non-RPW with no significant nexus; unvegetated; drains irrigation runoff to Ocean View Channel and East Garden Grove Wintersburg Channel (an RPW) (Photo 22-6).	none	729	--	--
22-8	Flood Control Facility: 5-ft-wide concrete drainage; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff underground to Ocean View Channel and East Garden Grove	none	1,174	--	--

Feature ID	Feature description	OHWM width (ft)	Length in Study Area (ft)	USACE CWA 404 (Other Waters)	USACE CWA 404 (Wetland)
	Wintersburg Channel (an RPW) (no photo).				
23-2	Flood Control Facility: 8-ft-wide concrete drainage; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff to Talbert Channel (an RPW) (Photo 23-2).	none	916	--	--
23-3	Flood Control Facility: 4-ft-wide concrete v-drainage; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff to Talbert Channel (an RPW) (Photo 23-3).	none	540	--	--
23-4	Flood Control Facility: 12-ft-wide concrete drainage; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff to East Garden Grove Wintersburg Channel (an RPW) (no photo).	none	354	--	--
23-5	Flood Control Facility: 5-ft-wide concrete drainage; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff to East Garden Grove Wintersburg Channel (an RPW) (Photo 23-5).	none	1,309	--	--
23-6	Flood Control Facility: 12-ft-wide concrete drainage; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff to Talbert Channel (an RPW) (Photo 23-6).	none	1,424	--	--
23-7	Flood Control Facility: 5-ft-wide concrete v-drainage; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff to Talbert Channel (an RPW) (no photo).	none	1,348	--	--
24-1	Flood Control Facility: 12-ft-wide concrete drainage; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff to Talbert Channel (an RPW) (Photo 24-1).	none	2,195	--	--
24-2	Flood Control Facility: 12-ft-wide concrete drainage; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff to Talbert Channel (an RPW) (Photo 24-1).	none	1,007	--	--
24-3	Flood Control Facility: 15-ft-wide concrete drainage; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff to Fountain Valley Channel (an RPW) (Photo 24-3).	none	2,457	--	--
24-4	Flood Control Facility: 18-ft-wide concrete drainage; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff to Fountain Valley Channel (an RPW) (Photo 24-4).	none	2,083	--	--

Feature ID	Feature description	OHWM width (ft)	Length in Study Area (ft)	USACE CWA 404 (Other Waters)	USACE CWA 404 (Wetland)
25-1	Flood Control Facility: 6-ft-wide concrete drainage; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff to Fountain Valley Channel (an RPW) (no photo).	2	814	--	--
25-2	Flood Control Facility: 4-ft wide concrete drainage; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff to Fountain Valley Channel, a RPW (Photo 25-2).	none	1,449	--	--
25-3	Flood Control Facility: 5-ft wide concrete drainage; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff to Fountain Valley Channel, a RPW (no photo).	none	2,186	--	--
25-4*	Flood Control Facility: Fountain Valley Channel; blue line; 40-ft-wide rock riprap drainage; RPW; negligible hydrophytic vegetation; drains to the Huntington Beach Channel (a TNW) (Photo 25-4).	9	357	0.19	--
25-5	Flood Control Facility: 6-ft-wide concrete drainage; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff to tidal portions of Fountain Valley Channel (an RPW) (Photo 25-5).	none	2,579	--	--
26-1*	Flood Control Facility: Santa Ana River; blue line; concrete box drainage; RPW; unvegetated; drains to Pacific Ocean (a TNW) (Photo 26-1).	238	998	5.44	--
26-2	Ditch: 6-ft-wide concrete v-ditch; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff to the Santa Ana River (an RPW). (Photo 26-2).	none	816	--	--
27-1*	Flood Control Facility: Greenville Banning Channel; 73-ft-wide concrete/rock riprap drainage northeast of I-405; blue line; RPW; unvegetated; 4 inches flowing water during survey (28 April 2010); drains surface runoff to the Santa Ana River (a TNW) (Photo 27-1).	30	677	0.52	--
27-2	Flood Control Facility: 8-ft-wide concrete drainage; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff to Greenville Banning Channel (an RPW) (no photo).	none	537	--	--
28-1	Ditch: 4-ft-wide concrete v-ditch; non-RPW with no significant nexus; unvegetated; dry during survey (28 April 2010); drains irrigation and road runoff to street gutter (Photo 28-1).	none	1,204	--	--

Feature ID	Feature description	OHWM width (ft)	Length in Study Area (ft)	USACE CWA 404 (Other Waters)	USACE CWA 404 (Wetland)
28-2*	Flood Control Facility: Gisler Channel; 56-ft-wide; concrete upslope and earthen/rock riprap downslope; blue line; RPW; unvegetated; drains surface water runoff to Greenville Banning Channel (an RPW) (Photos 28-2a and 28-2b).	20	1237	0.61	--
29-1	Ditch: 4-ft-wide concrete v-ditch; non-RPW with no significant nexus; upland vegetation; drains road runoff to Greenville Banning Channel (an RPW) (Photo 29-1).	none	1,676	--	--
29-2	Flood Control Facility: 4-ft-wide concrete drainage; non-RPW with no significant nexus; unvegetated; drains irrigation and surface runoff drains surface water runoff to Newport Back Bay (a TNW) (no photo).	none	1,829	--	--
30-1	Flood Control Facility: 5-ft-wide concrete drainage; non-RPW with no significant nexus; unvegetated; dry during survey (27 April 2010); drains road, landscape, and commercial surface runoff to Newport Back Bay (a TNW) (Photo 30-1).	none	1919	--	--
30-2	Ditch: 5-ft-wide concrete v-ditch; non-RPW with no significant nexus; unvegetated; dry during survey (27 April 2010); drains road and landscape runoff to Newport Back Bay (a TNW) (Photo 30-2).	none	1,548	--	--
31-1	Flood Control Facility: 4-ft-wide concrete drainage; non-RPW with no significant nexus; unvegetated; dry during survey (27 April 2010); drains landscape and road runoff to Newport Back Bay (a TNW) (Photo 31-1).	none	1,858	--	--
Newport Bay Watershed					
31-2*	Flood Control Facility: Santa Ana Delhi Channel; 58-ft-wide concrete box drainage north of I-405; 42-ft-wide south of I-405; blue line; RPW; unvegetated; 2 inches flowing water present during survey (27 April 2010); drains commercial surface, road, and landscape runoff to Newport Back Bay (a TNW) (Photos 31-2a and 31-2b).	42-58	394	0.41	--
31-3	Flood Control Facility: 4-ft-wide concrete drainage; non-RPW with no significant nexus; unvegetated; drains landscape and road runoff to Newport Back Bay (a TNW) (Photo 31-3).	none	234	--	--
31-4	Flood Control Facility: 12-ft-wide concrete drainage; non-RPW with no significant nexus; dry during survey (27 April 2010); unvegetated; drains residential and road runoff to Newport Back Bay (a TNW) (Photo 31-4).	none	2,673	--	--
Total				27.0	0.9

Feature ID	Feature description	OHWM width (ft)	Length in Study Area (ft)	USACE CWA 404 (Other Waters)	USACE CWA 404 (Wetland)

[1] Also in Anaheim Bay-Huntington Harbour Watershed
[2] Also in Santa Ana River Watershed

-- No jurisdiction
* Identified as an RPW in Appendix D

5.3.1 Relatively Permanent Water (RPW) Features

A total of 17 potentially jurisdictional drainage features observed within the study area are classified as RPWs tributary to a TNW (Table 3). Each of these features is identified as a blue line (USGS 1981). A detailed description of RPWs is provided below, which are categorized by the watershed that they occur within. Relatively Permanent Water features include features that have continuous flow at least seasonally (i.e., greater than 3 months) and are not ephemeral or intermittent tributaries that flow only in response to precipitation events or nuisance flows. It is assumed that the majority of these features flow continuously during the wet season and were observed having continuous flows during the dry season, where hydrology is mainly provided by surface water runoff from residential and commercial irrigation and other nuisance waste discharges.

RPW features within the study area consist of flood control facilities (e.g., constructed flood-control facilities consisting of concrete box or trapezoid cross-section drainages, which are usually open-air drainages extending below grade) with or without culverts, with few exceptions. Feature 4-1 is classified as a flood control facility with a detention basin, and Feature 4-4 is classified as a flood control facility with an included wetland (i.e., having a prevalence of plants that grow in permanently or semi-permanently flooded or saturated conditions).

TABLE 3. RPW JURISDICTIONAL FEATURES WITHIN THE STUDY AREA

Feature ID	Map pages	Feature ID	Map pages	Feature ID	Map pages
3-6	4-17, 5-17, 6-17	10-1	4-12, 5-12, 6-12 4-21, 5-21, 6-21	25-4	4-55, 5-5, 6-5
4-1	4-17, 5-17, 6-17, 4-20, 5-20, 6-20	16-2	4-11, 5-11, 6-11	26-1	4-5, 5-5, 6-5
4-3	4-15, 5-15, 6-15, 4-22, 5-22, 6-22	16-3	4-11, 5-11, 6-11	27-1	4-4, 5-4, 6-4
4-4	4-15, 5-15, 6-15, 4-22, 5-22, 6-22	18-4	4-9, 5-9, 6-9, 4-10, 5-10, 6-10	28-2	4-3, 5-3, 6-3
5-1	4-16, 5-16, 6-16	21-2	4-8, 5-8, 6-8	31-2	4-2, 5-2, 6-2
7-2	4-23, 5-23, 6-23	23-1	4-7, 5-7, 6-7		

San Gabriel River Watershed

Coyote Creek: Coyote Creek is a large, concrete-lined, flood-control drainage within the study area. It is identified as a named blue line drainage on the Los Alamitos USGS topographic map (USGS 1981) (Feature 3-6 on Figs. 4-17, 5-17, 6-17 and Table 2; Appendix B, Photo 3-6). It includes a well-defined OHWM 150 ft in width consisting of primary indicators of watermarks, sediment deposits, and flowing surface water. Coyote Creek appears to sustain relatively permanent flow based on the presence of flowing water at the time of the survey (July-August 2009), which was during the summer dry season in a below-average precipitation year (NWS 2010). Coyote Creek receives storm water flows from seasonal precipitation events as well as from year-round surface water runoff from excess landscape irrigation and

point source discharges associated with commercial and residential developments. Coyote Creek is tributary to the San Gabriel River and Pacific Ocean and drains a substantial upstream watershed consisting of heavily urbanized surface runoff. It directs flows south beyond the study area before emptying into the San Gabriel River just north of the intersection of I-405 and I-605. The intertidal portion of downstream San Gabriel River is the nearest TNW.

Coyote Creek is unvegetated within the study area and does not contain any USACE-defined wetlands or any associated riparian vegetation. It is classified by the National Wetlands Inventory as R4SBCx (Riverine [R], Intermittent [4] Streambed [SB], Seasonally flooded [C], excavated [x]) (USFWS 2009).

Because Coyote Creek contains a defined OHWM, conveys relatively permanent flows, and is tributary to a TNW, it is subject to USACE jurisdiction pursuant to Section 404 of the CWA (Table 2).

Los Alamitos Channel: Los Alamitos Channel is a large flood-control drainage containing both earthen and concrete-lined portions within the study area (Feature 4-1 on Figs. 4-17, 4-20, 5-17, 5-20, 6-17, 6-20; Table 2; Appendix B, Photo 4-1a, b). It is identified as named blue line drainage on the Los Alamitos USGS topographic map (USGS 1981). It includes a well-defined OHWM 220 ft in width consisting of debris deposits, terracing within earthen areas, and flowing surface water. It appears to sustain relatively permanent flow based on the presence of flowing water at the time of the survey (July-August 2009), which was during the summer dry season in a below-average precipitation year (NWS 2010). Los Alamitos Channel receives storm water flows from seasonal precipitation events as well as from year-round surface water runoff from excess landscape irrigation and point source discharges associated with commercial and residential developments. Los Alamitos Channel is tributary to the San Gabriel River and drains a substantial upstream watershed consisting of heavily urbanized areas within the city of Los Alamitos. It directs flows south and west beyond the study area before emptying into the San Gabriel River in the vicinity of the Los Alamitos Generating Station. The intertidal portion of downstream San Gabriel River is the nearest TNW.

Earthen portions of the Los Alamitos Channel within the study area do not contain a dominance of hydrophytic vegetation or any associated riparian vegetation. It is not classified as a wetland by the National Wetlands Inventory (USFWS 2009).

Because Los Alamitos Channel contains a well-defined OHWM, conveys relatively permanent flows, and is tributary to a TNW, it is subject to USACE jurisdiction pursuant to Section 404 of the CWA (Table 2).

Los Cerritos Channel: Los Cerritos Channel is a 94-ft wide, concrete-lined, flood-control drainage within the study area and is identified as a blue line drainage on the Los Alamitos USGS topographic map (Feature 5-1 on Figs. 4-16, 5-16, 6-16 and Table 2; Appendix B, Photo 4-5). It includes a well-defined OHWM 94 ft in width consisting of watermarks and flowing surface water. It appears to sustain relatively permanent flow based on the presence of flowing water at the time of the survey (July-August 2009), which was during the summer dry season in a below-average precipitation year (NWS 2010). Los Cerritos Channel receives storm water flows from seasonal precipitation events as well as from year-round surface water runoff from excess landscape irrigation and point source discharges associated with commercial and residential developments.Los Cerritos Channel is tributary the Pacific Ocean. It drains a large upstream watershed consisting of residential, industrial, and recreational (golf course) areas within the cities of Long Beach and Signal Hill. It directs flows south beyond the study area for 2.3 miles before emptying into the intertidal portion of Los Cerritos Channel, the nearest TNW.

Los Cerritos Channel is unvegetated and does not contain any USACE-defined wetlands or associated riparian vegetation. It is unclassified by the National Wetlands Inventory (USFWS 2009).

Because Los Cerritos Channel contains a well-defined OHWM, conveys relatively permanent flows, and is tributary to a TNW, it is subject to USACE jurisdiction pursuant to Section 404 of the CWA (Table 2).

San Gabriel River: The San Gabriel River is identified as a named blue line drainage on the Los Alamitos USGS topographic map (Feature 4-4 on Figs. 4-15, 5-15, 6-15, 4-22, 5-22, 6-22, and Table 2; Appendix B, Photo 4-4) (USGS 1981). Within the study area, the San Gabriel River contains an earthen bottom with rock riprap banks and a well-defined OHWM 258 ft in width consisting of watermarks and flowing surface water. The San Gabriel River conveys relatively permanent flow based on the presence of flowing water at the time of the survey (July-August 2009 and April 2010). The San Gabriel River receives storm water flows from seasonal precipitation events as well as from year-round surface water runoff from excess landscape irrigation and point source discharges associated with commercial and residential developments. It also contains tidal influence approximately 1000 ft downstream and outside of the study area, and is therefore a TNW within downslope portions in the intertidal zone. The San Gabriel River drains a very large upstream watershed consisting of heavily urbanized areas and directs flows through the study area to the south for 3.4 miles before emptying into the Pacific Ocean.

Portions of the San Gabriel River within the study area contain a dominance of hydrophytic vegetation including California bulrush (*Scirpus californicus*; OBL) and giant reed (*Arundo donax*; FACW) (Appendix A, Wetland Data Form SGR-W). It also contains non-hydrophytic, invasive vegetation, including castor bean (*Ricinis communis*). This vegetation is best described as riparian vegetation that has been disturbed by channelized flows that have enabled the proliferation of invasive species. It does not contain any riparian vegetation beyond its banks. Soils exhibited physical and/or chemical characteristics indicative of permanent or periodic saturation including a sandy redox matrix. Therefore, hydrophytic-vegetated portions of the San Gabriel River meet the vegetation, soil, and hydrology criteria of a USACE-defined wetland. It is classified by the National Wetlands Inventory as E1UBLx (Estuarine [E], subtidal [1] Unconsolidated Bottom [UB], Subtidal [L], excavated [x]) (USFWS 2009).

Because the San Gabriel River contains a well-defined OHWM, conveys relatively permanent flows, is tributary to a TNW, and contains included USACE-defined wetlands, it is subject to USACE jurisdiction pursuant to Section 404 of the CWA (Table 2).

Copa De Oro Drive Channel: An unnamed blue line drainage (hereafter referred to as the "Copa De Oro Channel") occurs parallel and north of Copa De Oro Drive within the City of Rossmoor (Feature 7-2 on Figs. 4-23, 5-23, 6-23, and Table 2; Appendix B, Photo 7-2) (USGS 1981). The Copa De Oro Channel is a 15-ft wide, concrete-lined, flood-control drainage east of I-405 and an earthen drainage west of I-405. It contains a well-defined OHWM ranging from 3-25 ft in width consisting of watermarks and standing water. It appears to sustain relatively permanent flow based on the presence of flowing water at the time of the surveys (July-August 2009 and April 2010). Copa De Oro Channel receives storm water flows from seasonal precipitation events as well as from year-round surface water runoff from excess landscape irrigation and point source discharges associated with commercial and residential developments. Copa De Oro Channel is tributary to the Los Alamitos Channel and drains a substantial upstream watershed consisting of residential areas within the city of Rossmoor. It directs flows southwest through the study area before emptying into the Los Alamitos Channel just north of the intersection of I-405 and I-605. Flows within the Los Alamitos Channel are then directed south and west beyond the study area before emptying into the San Gabriel River in the vicinity of the Los Alamitos Generating Station. The intertidal portion of the San Gabriel River is the nearest TNW.

The Copa De Oro Drive Channel is unvegetated, or sparsely vegetated within small portion of the earthen section, and does not contain any USACE-defined wetlands or associated riparian vegetation. It is unclassified by the National Wetlands Inventory (USFWS 2009).

Because the Copa De Oro Drive Channel contains a well-defined OHWM, conveys relatively permanent flows, and is tributary to a TNW, it is subject to USACE jurisdiction pursuant to Section 404 of the CWA (Table 2).

Seal Beach Watershed

Bolsa Chica Channel: Bolsa Chica Channel is a concrete-lined flood-control drainage within the study area (Feature 10-1 on Figs. 4-12, 5-12, 6-12, 4-21, 5-21, 6-21, and Table 2; Appendix B, Photo 10-1). It is identified as a named blue line drainage on the Los Alamitos USGS topographic map. It includes a well-defined OHWM 38 ft in width consisting of water marks, debris deposits, and flowing surface water. It appears to sustain relatively permanent flow based on the presence of flowing water at the time of the survey (July-August 2009), which was during the summer dry season in a below-average precipitation year (NWS 2010). Bolsa Chica Channel receives storm water flows from seasonal precipitation events as well as from year-round surface water runoff from excess landscape irrigation and point source discharges associated with commercial and residential developments. It is unvegetated within the study area. Bolsa Chica Channel is tributary to Huntington Harbor and drains a substantial upstream watershed consisting of heavily urbanized areas within the cities of Los Alamitos, Garden Grove, and Cypress. It directs flows south beyond the study area before emptying into Huntington Harbor and ultimately the Pacific Ocean. The intertidal portions of Bolsa Chica Channel are the nearest TNW

Bolsa Chica Channel is concrete-lined and it does not contain any USACE-defined wetlands or any associated riparian vegetation. It is classified by the National Wetlands Inventory as R4SBCx (Riverine [R], Intermittent [4] Streambed [SB], Seasonally flooded [C], excavated [x]) (USFWS 2009).

Because Bolsa Chica Channel contains a well-defined OHWM, conveys relatively permanent flows, and is tributary to a TNW, it is subject to USACE jurisdiction pursuant to Section 404 of the CWA (Table 2).

Anaheim Barber City Channel: The Anaheim Barber City Channel is a concrete-lined flood-control drainage within the study area (Feature 16-2 on Figs. 4-11, 5-11, 6-11, and Table 2; Appendix B, Photo 16-2) and is identified as a named blue line drainage on the Los Alamitos USGS topographic map. It includes a well-defined OHWM 40 ft in width consisting of debris deposits, water marks, and flowing surface water. It appears to sustain relatively permanent flow based on the presence of flowing water at the time of the summer dry season survey (July-August 2009). The Anaheim Barber City Channel receives storm water flows from seasonal precipitation events as well as from year-round surface water runoff from excess landscape irrigation and point source discharges associated with commercial and residential developments. The Anaheim Barber City Channel is tributary to the Bolsa Chica Channel and drains a substantial upstream watershed consisting of heavily urbanized areas within the cities of Fullerton, Anaheim, Stanton, and Westminster. It directs flows southwest for 1.4 miles beyond the study area before emptying into Bolsa Chica Channel, which then flows south and west 4.7 miles to Huntington Harbor and ultimately the Pacific Ocean. The intertidal portions of Bolsa Chica Channel are the nearest TNW.

The Anaheim Barber City Channel is unvegetated and does not contain any USACE-defined wetlands or associated riparian vegetation. It is classified by the National Wetlands Inventory as R4SBCx (Riverine [R], Intermittent [4] Streambed [SB], Seasonally flooded [C], excavated [x]) (USFWS 2009).

Because the Anaheim Barber City Channel contains a well-defined OHWM, conveys relatively permanent flows, and is tributary to a TNW, it is subject to USACE jurisdiction pursuant to Section 404 of the CWA (Table 2).

Westminster Channel: The Westminster Channel is a concrete-lined flood-control drainage within the study area (Feature 18-4 on Figs. 4-9, 5-9, 6-9, 4-10, 5-10, 6-10, and Table 2; Appendix B, Photo 18-4) and is identified as a named blue line drainage on the Seal Beach USGS topographic map. It includes a well-defined OHWM 30 ft in width consisting of water marks and flowing surface water. It appears to sustain relatively permanent flow based on the presence of flowing water at the time of the dry season survey (July-August 2009) (NWS 2010). The Westminster Channel receives storm water flows from seasonal precipitation events as well as from year-round surface water runoff from excess landscape irrigation and point source discharges associated with commercial and residential developments. The Westminster Channel is tributary to the Bolsa Chica Channel and drains a substantial upstream watershed consisting of heavily urbanized areas within the cities of Fullerton, Anaheim, Stanton, Garden Grove, and Westminster. It directs flows south for approximately 1.2 miles beyond the study area before emptying into Bolsa Chica Channel, which directs flows south for 4.7 miles beyond the study area before emptying into Huntington Harbor and ultimately the Pacific Ocean. The intertidal portions of Bolsa Chica Channel are the nearest TNW.

The Westminster Channel is unvegetated and does not contain any USACE-defined wetlands or associated riparian vegetation. It is classified by the National Wetlands Inventory as R4SBCx (Riverine [R], intermittent [4] Streambed [SB], Seasonally flooded [C], excavated [x]) (USFWS 2009).

Because the Westminster Channel contains a well-defined OHWM, conveys relatively permanent flows, and is tributary to a TNW, it is subject to USACE jurisdiction pursuant to Section 404 of the CWA (Table 2).

East Garden Grove Wintersburg Channel: The East Garden Grove Wintersburg Channel is a concrete-lined flood-control drainage within the study area (Feature 21-2 on Fig. 4-8, 5-8, 6-8, and Table 2; Appendix B, Photos 21-2a and 21-2b) and is identified as named blue line drainage on the Newport Beach USGS topographic map. It includes a well-defined OHWM ranging from 26-65 ft in width consisting of water marks, debris deposits, and flowing surface water. It appears to sustain relatively permanent flow based on the presence of flowing water at the time of the survey (July-August 2009), which was during the summer dry season in a below-average precipitation year (NWS 2010). The East Garden Grove Wintersburg Channel receives storm water flows from seasonal precipitation events as well as from year-round surface water runoff from excess landscape irrigation and point source discharges associated with commercial and residential developments. The East Garden Grove Wintersburg Channel is tributary to Bolsa Chica Bay and drains a substantial upstream watershed consisting of heavily urbanized areas within the cities of Anaheim, Fountain Valley, Garden Grove, and Westminster. It directs flows south for approximately 4.5 miles beyond the study area before emptying into Bolsa Chica Bay, which outlets to the Pacific Ocean. The intertidal portions of East Garden Grove Wintersburg Channel are the nearest TNW.

The East Garden Grove Wintersburg Channel is concrete-lined and unvegetated within the study area both north and south of I-405. It does not contain any USACE-defined wetlands or associated riparian vegetation. It is classified by the National Wetlands Inventory as R4SBCx (Riverine [R], intermittent [4] Streambed [SB], Seasonally flooded [C], excavated [x]) (USFWS 2009).

Because the East Garden Grove Wintersburg Channel contains a well-defined OHWM, conveys relatively permanent flows, and is tributary to a TNW, it is subject to USACE jurisdiction pursuant to Section 404 of the CWA (Table 2).

Ocean View Channel: The Ocean View Channel is a concrete-lined flood-control drainage within the study area (Feature 23-1 on Fig. 4-7, 5-7, 6-7, and Table 2; Appendix B, Photo 23-1) and is identified as a named blue line drainage on the Newport Beach USGS topographic map. It includes a well-defined OHWM 20 ft in width consisting of water marks and flowing surface water. It appears to sustain relatively permanent flow based on the presence of flowing water at the time of the dry season survey (July-August 2009) (NWS 2010). The Ocean View Channel receives storm water flows from seasonal precipitation events as well as from year-round surface water runoff from excess landscape irrigation and point source discharges associated with commercial and residential developments. The Ocean View Channel is tributary to the East Garden Grove Wintersburg Channel and drains a substantial upstream watershed consisting of heavily urbanized areas within the cities of Fullerton and Santa Ana. It passes underground on the east side of the I-405 and flows west for approximately 1.7 miles beyond the study area before entering the East Garden Grove Wintersburg Channel, which then empties into Bolsa Chica Bay and the Pacific Ocean. The intertidal portions of Oceanview Channel are the nearest TNW

The Ocean View Channel is unvegetated within the study area and does not contain any USACE-defined wetlands or associated riparian vegetation. It is classified by the National Wetlands Inventory as R4SBCx (Riverine [R], intermittent [4] Streambed [SB], Seasonally flooded [C], excavated [x]) (USFWS 2009).

Because the Ocean View Channel contains a well-defined OHWM, conveys relatively permanent flows, and is tributary to a TNW, it is subject to USACE jurisdiction pursuant to Section 404 of the CWA (Table 2).

Santa Ana Watershed

Fountain Valley Channel: The Fountain Valley Channel is a concrete-lined flood-control drainage within the study area (Feature 25-4 on Figure 4-5, 5-5, 6-5, and Table 2; Appendix B, Photo 25-4) and is identified as a named blue line drainage on the Newport Beach USGS topographic map. It includes a well-defined OHWM 9 ft in width consisting of water marks and flowing surface water. It appears to sustain relatively permanent flow based on the presence of flowing water at the time of the dry season survey (July-August 2009) (NWS 2010). The Fountain Valley Channel receives storm water flows from seasonal precipitation events as well as from year-round surface water runoff from excess landscape irrigation and point source discharges associated with commercial and residential developments. The Fountain Valley Channel is tributary to the Huntington Beach Channel and drains a substantial upstream watershed consisting of heavily urbanized areas within the cities of Fountain Valley and Santa Ana. It flows southwest for approximately 2.3 miles beyond the study area before entering the Huntington Beach Channel, which then flows 3.8 miles before emptying into the Pacific Ocean just north of the Santa Ana River. The intertidal portions of Huntington Beach Channel are the nearest TNW.

The Fountain Valley Channel is unvegetated and does not contain any USACE-defined wetlands or associated riparian vegetation. It is classified by the National Wetlands Inventory as R4SBCx (Riverine [R], Intermittent [4] Streambed [SB], Seasonally flooded [C], excavated [x]) (USFWS 2009).

Because the Fountain Valley Channel contains a well-defined OHWM, conveys relatively permanent flows, and is tributary to a TNW, it is subject to USACE jurisdiction pursuant to Section 404 of the CWA (Table 2).

Santa Ana River: The Santa Ana River is a large, concrete-lined, flood-control drainage within the study area and is identified as a named blue line drainage on the Newport Beach USGS topographic map (Feature 26-1 on Fig. 4-5, 5-5, 6-5, and Table 2; Appendix B, Photo 26-1). It includes a well-defined OHWM 238 ft in width consisting of watermarks, debris deposits, and flowing surface water. It appears to sustain relatively permanent flow based on the presence of flowing water at the time of the dry season survey

(July-August 2009) (NWS 2010). The Santa Ana River receives storm water flows from seasonal precipitation events as well as from year-round surface water runoff from excess landscape irrigation and point source discharges associated with commercial and residential developments. The Santa Ana River is tributary to the Pacific Ocean and drains a vast upstream watershed extending into Riverside County. It directs flows south beyond the study area for 4.8 miles before emptying into the Pacific Ocean. The intertidal portions of the Santa Ana River are the nearest TNW.

The Santa Ana River is unvegetated within the study area and does not contain any USACE-defined wetlands or associated riparian vegetation. It is classified by the National Wetlands Inventory as R4SBCx (Riverine [R], Intermittent [4] Streambed [SB], Seasonally flooded [C], excavated [x]) (USFWS 2009).

Because the Santa Ana River contains a well-defined OHWM, conveys relatively permanent flows, and is tributary to a TNW, it is subject to USACE jurisdiction pursuant to Section 404 of the CWA (Table 2).

Greenville Banning Channel: The Greenville Banning Channel is a concrete and rock, rip-rap-lined, flood-control drainage within the study area and is identified as a named blue line drainage on the Newport Beach USGS topographic map (Feature 27-1 on Fig. 4-4, 5-4, 6-4, and Table 2; Appendix B, Photo 27-1) (USGS 1981). It includes a well-defined OHWM 30 ft in width consisting of drift deposits and flowing surface water. It appears to sustain relatively permanent flow based on the presence of flowing water at the time of the dry season survey (July-August 2009; NWS 2010). The Greenville Banning Channel receives storm water flows from seasonal precipitation events as well as from year-round surface water runoff from excess landscape irrigation and point source discharges associated with commercial and residential developments. It is unvegetated within the study area. The Greenville Banning Channel is tributary to the Santa Ana River and drains a large upstream watershed consisting of heavily urbanized areas within the cities of Santa Ana, Costa Mesa, and Tustin. It directs flows southwest beyond the study area for 3.8 miles before emptying into the Santa Ana River, which then flows 1.3 miles to the Pacific Ocean. The intertidal portions of the Santa Ana River are the nearest TNW.

The Greenville Banning Channel is unvegetated and does not contain any USACE-defined wetlands or associated riparian vegetation within the study area. It is classified by the National Wetlands Inventory as R4SBCx (Riverine [R], Intermittent [4] Streambed [SB], Seasonally flooded [C], excavated [x]) (USFWS 2009).

Because the Greenville Banning Channel contains a well-defined OHWM, conveys relatively permanent flows, and is tributary to a TNW, it is subject to USACE jurisdiction pursuant to Section 404 of the CWA (Table 2).

Gisler Storm Channel: The Gisler Storm Channel contains either concrete-lined, rock rip-rap-lined, or earthen portions that daylight in several locations within the study area (Feature 28-2 on Figs. 4-3, 5-3, 6-3; Table 2; Appendix B, Photos 28-2a and 28-2b). It is identified as a blue line drainage on the Newport Beach USGS topographic map, but includes a well-defined OHWM 20 ft in width consisting of water marks, debris deposits, and flowing surface water. It is unvegetated within the study area. It appears to sustain relatively permanent flow based on the presence of flowing water at the time of the dry season survey (July-August 2009) (NWS 2010). The Gisler Storm Channel receives storm water flows from seasonal precipitation events as well as from year-round surface water runoff from excess landscape irrigation and point source discharges associated with commercial and residential developments.The Gisler Storm Channel is tributary to the Greenville Banning Channel and drains a considerable upstream watershed consisting of heavily urbanized areas within the cities of Costa Mesa and Santa Ana. It flows west beyond the study area for approximately 0.9 miles before entering the Greenville Banning Channel, then 3.8 miles before emptying

into the Santa Ana River, which then flows 1.3 miles to the Pacific Ocean. The intertidal portions of the Greenville Banning Channel are the nearest TNW.

The Gisler Storm Channel is unvegetated and does not contain any USACE-defined wetlands or associated riparian vegetation. It is not classified by the National Wetlands Inventory (USFWS 2009).

Because the Gisler Storm Channel contains a well-defined OHWM, conveys relatively permanent flows, and is tributary to a TNW (i.e., Pacific Ocean), it is subject to USACE jurisdiction pursuant to Section 404 of the CWA (Table 2).

Newport Bay Watershed

Santa Ana Delhi Channel: The Santa Ana Delhi Channel is a large, concrete-lined, flood-control drainage within the study area and is identified as a named blue line drainage on the Newport Beach USGS topographic map (Feature 31-2 on Fig. 4-2, 5-2, 6-2, and Table 2; Appendix B, Photos 31-2a and 31-2b). It includes a well-defined OHWM ranging from 42-58 ft in width consisting of watermarks, debris deposits, and flowing surface water. It appears to sustain relatively permanent flow. The Santa Ana Delhi Channel receives storm water flows from seasonal precipitation events as well as from year-round surface water runoff from excess landscape irrigation and point source discharges associated with commercial and residential developments. The Santa Ana Delhi Channel is tributary to Newport Back Bay and drains a vast upstream watershed extending into Riverside County. It directs flows south beyond the study area for 3.0 miles before emptying into the Newport Back Bay, the nearest TNW.

The Santa Ana Delhi Channel is unvegetated within the study area and does not contain any USACE-defined wetlands or associated riparian vegetation. It is classified by the National Wetlands Inventory as R4SBAx (Riverine [R], Intermittent [4] Streambed [SB], Temporarily flooded [A], excavated [x]) (USFWS 2009).

Because the Santa Ana Delhi Channel contains a well-defined OHWM, conveys relatively permanent flows, and is tributary to a TNW, it is subject to USACE jurisdiction pursuant to Section 404 of the CWA (Table 2).

5.4 WETLANDS

The San Gabriel River is the only feature within the study area with areas that meet the vegetation, soil, and hydrology criteria of a USACE-defined wetland. It is classified by the National Wetlands Inventory as E1UBLx (Estuarine [E], subtidal [1] Unconsolidated Bottom [UB], Subtidal [L], excavated [x]) (USFWS 2009). The San Gabriel River is identified as named blue line drainage on the Los Alamitos USGS topographic map and contains an earthen bottom with rock riprap banks and a well-defined OHWM consisting of watermarks and flowing surface water. Portions of the San Gabriel River within the study area contain a dominance of hydrophytic vegetation including California bulrush (*Scirpus californicus*; OBL) and giant reed (*Arundo donax*; FACW). This community is a riparian wetland community that has received disturbance from channelized flows that have facilitated the proliferation of invasive riparian species.

5.5 NON-RPW FEATURES HAVING A SIGNIFICANT NEXUS TO A TWN

There are 2 unnamed drainage features throughout the length of the study area that contain an OHWM and are classified as non-RPWs tributary to a TNW (Table 2; Figs. 4-1 to 6-23; Appendix B). These features include features 8-2 and 16-1, and consist of concrete-lined flood control facilities. Each contains an OHWM and a defined bed/bank. Accordingly, these non-RPWs require a significant nexus analysis to establish USACE jurisdiction.

In general these non-RPWs contain a substantially long relevant reach, and drain a considerably large watershed in which surface flows are conveyed to larger, higher-order downstream tributaries that ultimately drain to a TNW. These features are unvegetated and provide negligible ground water infiltration or bio filtration - which facilitates the conveyance of contaminants to the receiving TNW that can adversely impact beneficial uses. Flows of sizable seasonal volume, duration, and frequency arise from rainfall events, urban runoff, and landscape irrigation. Each of these non-RPWs are also in close proximity, and tributary to, a TNW (between 1-6 miles). Consequently, these features provide more than a negligible or minimal contribution to the nearest TNW.

In addition, these non-RPWs drain pollutants from highly-industrialized areas, roadways and other developed lands that contain chemical and physical contaminants, trash and debris; as well as providing functions and values for wildlife while flowing, and supporting / aiding with vegetation dispersal and regional species diversity. Wildlife that utilize these non-RPWs includes many avian species (e.g., passerine and waterfowl), mammals (coyote, raccoon, and opossum), amphibians (frogs), and reptiles (snakes). Within a densely-developed landscape lacking natural aquatic habitat, these features provide artificial aquatic habitat for foraging and in some cases refuging. As a result, each of these features is assumed to have a more than speculative or insubstantial effect on the chemical, physical, and biological integrity of the receiving TNW and therefore are within the jurisdiction of the USACE (CWA Section 404). Appendix C provides a more robust significant nexus analyses for each of these non-RPWs. In summary, these features convey flows that may adversely impact the beneficial uses of downstream receiving waterbodies.

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Appendix A
USACE Wetland Determination Data Forms

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: I-405 Improvement Project	City/County: Los Angeles	Sampling Date: 4Aug09
Applicant/Owner: OCTA	State: CA	Sampling Point: SGR-U
Investigator(s): G. Hoisington, C. Snellen	Section, Township, Range: T 4S, R 3W	
Landform (hillslope, terrace, etc.): flood control channel	Local Relief (concave, convex, none): concave	Slope (%): 0-2
Subregion (LRR): C Lat: 33º 47.201	Long: 118º 5.604	Datum: WGS 84
Soil Map Unit Name: Bolsa Silt Loam, drained	NWI Classification: E1UBLx / R4SBCx	

Are climatic/hydrological conditions on the site typical for this time of the year? ☑ Yes ☐ No

Are Vegetation, ☐ Soil, ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" Present? ☑ Yes ☐ No

Are Vegetation, ☐ Soil, ☐ or Hydrology ☐ naturally problematic? (If needed, explain answers in remarks)

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

Hydrophytic Vegetation Present?	☐ Yes	☑ No	**Is the Sampled Area within a Wetland?** ☐ Yes ☑ No
Hydric Soil Present?	☐ Yes	☑ No	
Wetland Hydrology Present?	☐ Yes	☑ No	

Remarks: San Gabriel River at 605 offramp (north of 405). Paired upland data point (SGR-U).

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. N/A			
2.			
3.			
4.			
Total Cover:			

Sapling/Shrub Stratum			
1. N/A			
2.			
3.			
4.			
5.			
Total Cover:			

Herb Stratum			
1. *Ricinis communis*	10%	N	NI
2. *Brassica nigra*	50%	Y	NI
3. *Bromus madrietensis*	30%	Y	NI
4.			
5.			
6.			
7.			
8.			
Total Cover:	90%		

Woody Vine Stratum			
1. N/A			
2.			
Total Cover:			

% Bare Ground in Herb Stratum: 10 % | % Cover of Biotic Crust:

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiplied by:	
OBL species		x1 =	0
FACW species		x2 =	0
FAC species		x3 =	0
FACU species		x4 =	0
UPL species		x5 =	0
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A = #DIV/0!

Hydrophytic Vegetation Indicators:

☐ Dominance Test is >50%

☐ Prevalence Index is ≤3.0[1]

☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? ☐ Yes ☑ No

Remarks:

SOIL

Sampling Point: SGR-U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 4/3	100%					sandy loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):
Type: _____
Depth (inches): _____

Hydric Soil Present? ☐ Yes ☑ No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizopheres along Living Roots (C3)
- ☐ Presence Of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	☐ Yes	☑ No	Depth (inches): _____
Water Table Present?	☐ Yes	☑ No	Depth (inches): _____
Saturation Present? (Includes capillary fringe)	☐ Yes	☑ No	Depth (inches): _____

Wetland Hydrology Present? ☐ Yes ☑ No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: I-405 Improvement Project	City/County: Los Angeles	Sampling Date: 4Aug09
Applicant/Owner: OCTA	State: CA	Sampling Point: SGR-W
Investigator(s): G. Hoisington, C. Snellen	Section, Township, Range: T 4S, R 3W	
Landform (hillslope, terrace, etc.): flood control channel	Local Relief (concave, convex, none): concave	Slope (%): 0-2
Subregion (LRR): C Lat: 33º 47.201	Long: 118º 5.604	Datum: WGS 84
Soil Map Unit Name: Bolsa Silt Loam, drained	NWI Classification: E1UBLx / R4SBCx	

Are climatic/hydrological conditions on the site typical for this time of the year? ☑ Yes ☐ No

Are Vegetation, ☐ Soil, ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" Present? ☑ Yes ☐ No

Are Vegetation, ☐ Soil, ☐ or Hydrology ☐ naturally problematic? (If needed, explain answers in remarks)

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

Hydrophytic Vegetation Present?	☑ Yes	☐ No	**Is the Sampled Area within a Wetland?** ☑ Yes ☐ No
Hydric Soil Present?	☑ Yes	☐ No	
Wetland Hydrology Present?	☑ Yes	☐ No	

Remarks: San Gabriel River at 605 offramp (north of 405). Paired wetland point (SGR-W).

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. N/A			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1. N/A			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. *Scirpus californicus*	60%	Y	OBL
2. *Melilotus albus*	10%	N	FACU
3. *Foeniculum vulgare*	5%	N	FACU
4. *Arundo donax*	15%	N	FACW
5.			
6.			
7.			
8.			
Total Cover:	90%		
Woody Vine Stratum			
1. N/A			
2.			
Total Cover:			
% Bare Ground in Herb Stratum: 10%	% Cover of Biotic Crust:		

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiplied by:	
OBL species	60	x1 =	60
FACW species	15	x2 =	30
FAC species	0	x3 =	0
FACU species	15	x4 =	60
UPL species	0	x5 =	0
Column Totals:	90 (A)		150 (B)

Prevalence Index = B/A = 1.67

Hydrophytic Vegetation Indicators:

☐ Dominance Test is >50%

☑ Prevalence Index is ≤3.0[1]

☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation[1] (Explain)

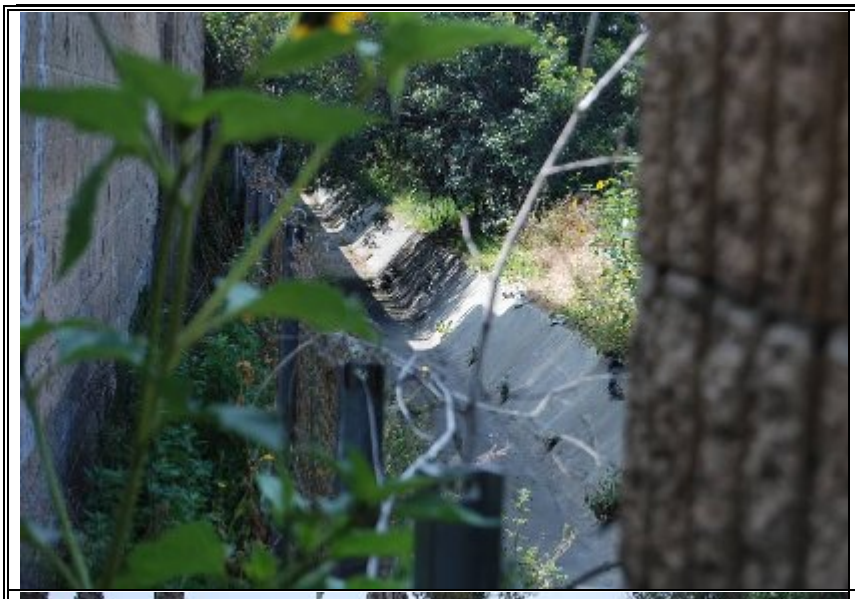
[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? ☑ Yes ☐ No

Remarks:

SOIL **Sampling Point: SGR-W**

Appendix B
Site Photographs



Feature ID: 1-1

Photo Date: 26 April 2010

Direction: South

Status: No USACE CWA Section 404 Jurisdiction

Feature ID: 1-2

Photo Date: 26 April 2010

Direction: South

Status: No USACE CWA Section 404 Jurisdiction

Feature ID: 3-1

Photo Date: 27 April 2010

Direction: Southwest

Status: No USACE CWA Section 404 Jurisdiction

Feature ID: 3-2

Photo Date: 23 July 2009

Direction: North

Status: No USACE CWA Section 404 Jurisdiction

Feature ID: 3-5

Photo Date: 4 August 2009

Direction: Southwest

Status: No USACE CWA Section 404 Jurisdiction

Feature ID: 3-6 (Coyote Creek)

Photo Date: 23 July 2009

Direction: Southwest

Status: USACE Jurisdictional CWA Section 404

Feature ID: 4-1a (Alamitos Channel)

Photo Date: 23 July 2009

Direction: North

Status: USACE Jurisdictional CWA Section 404

Feature ID: 4-1b (Alamitos Channel)

Photo Date: 27 April 2010

Direction: South

Status: USACE Jurisdictional CWA Section 404

Feature ID: 4-2 (Rossmoor Storm Channel)

Photo Date: 23 July 2009

Direction: West

Status: No USACE CWA Section 404 Jurisdiction

Feature ID: 4-3 (Mainway Drive Channel)

Photo Date: 23 July 2009

Direction: West

Status: USACE Jurisdictional CWA Section 404

Feature ID: 4-4a (San Gabriel River east)

Photo Date: 23 July 2009

Direction: North

Status: USACE Jurisdictional CWA Section 404

Feature ID: 4-4b (San Gabriel River west)

Photo Date: 26 April 2010

Direction: North

Status: USACE Jurisdictional CWA Section 404

Feature ID: 5-1 (Los Cerritos Channel)

Photo Date: 26 April 2010

Direction: Northwest

Status: USACE Jurisdictional CWA Section 404

Feature ID: 5-2

Photo Date: 26 April 2010

Direction: Southeast

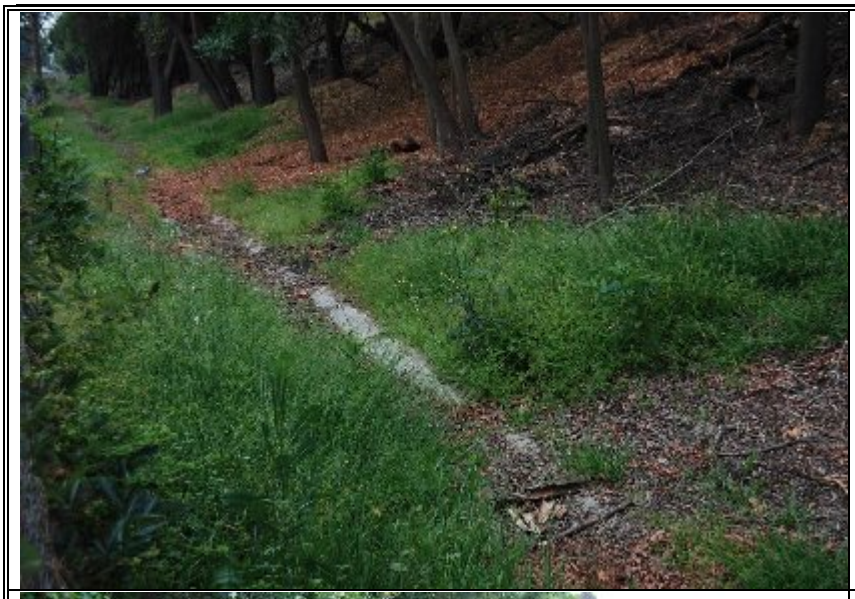
Status: No USACE CWA Section 404 Jurisdiction

Feature ID: 5-3

Photo Date: 27 April 2010

Direction: Northwest

Status: No USACE CWA Section 404 Jurisdiction

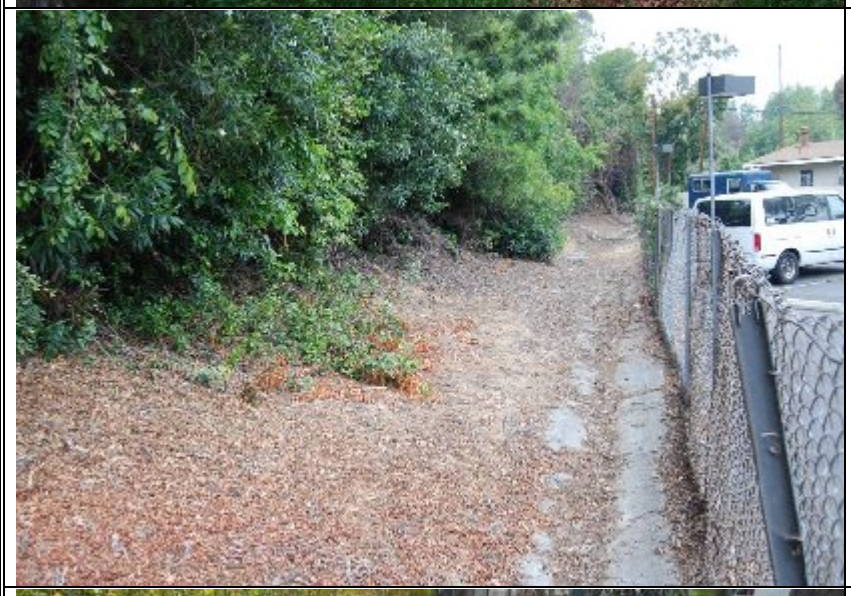


Feature ID: 5-4

Photo Date: 27 April 2010

Direction: Southeast

Status: No USACE CWA Section 404 Jurisdiction

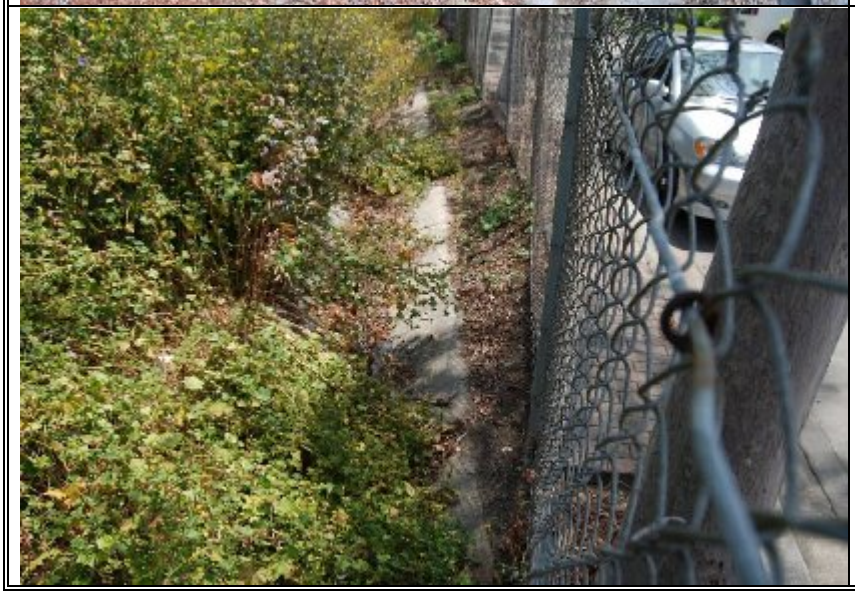


Feature ID: 5-5

Photo Date: 27 April 2010

Direction: Northwest

Status: No USACE CWA Section 404 Jurisdiction



Feature ID: 6-1

Photo Date: 26 April 2010

Direction: Southeast

Status: No USACE CWA Section 404 Jurisdiction

Feature ID: 6-2

Photo Date: 26 April 2010

Direction: Southeast

Status: No USACE CWA Section 404 Jurisdiction

Feature ID: 7-1

Photo Date: 27 April 2010

Direction: East

Status: No USACE CWA Section 404 Jurisdiction

Feature ID: 7-2a (Copa De Oro Channel east)

Photo Date: 23 July 2009

Direction: West, from east of I-405

Status: USACE Jurisdictional CWA Section 404

Feature ID: 7-2b (Copa De Oro Channel west)

Photo Date: 28 April 2010

Direction: East, from west of I-405

Status: USACE Jurisdictional CWA Section 404

Feature ID: 7-3

Photo Date: 28 April 2010

Direction: North

Status: No USACE CWA Section 404 Jurisdiction

Feature ID: 7-5

Photo Date: 29 July 2009

Direction: South

Status: No USACE CWA Section 404 Jurisdiction

Feature ID: 7-7 (Seal Beach Blvd. Channel)

Photo Date: 4 August 2009

Direction: West

Status: No USACE CWA Section 404 Jurisdiction

Feature ID: 8-1

Photo Date: 4 August 2009

Direction: West

Status: No USACE CWA Section 404 Jurisdiction

Feature ID: 8-2

Photo Date: 23 July 2009

Direction: East

Status: USACE Jurisdictional CWA Section 404

Feature ID: 9-1

Photo Date: 23 July 2009

Direction: Northeast

Status: No USACE CWA Section 404 Jurisdiction

Feature ID: 10-1 (Bolsa Chica Channel south)

Photo Date: 28 April 2010

Direction: North, from south of I-405

Status: USACE Jurisdictional CWA Section 404

Feature ID: 10-3

Photo Date: 4 August 2009

Direction: West

Status: No USACE CWA Section 404 Jurisdiction

Feature ID: 10-5

Photo Date: 4 Aug 2009

Direction: East

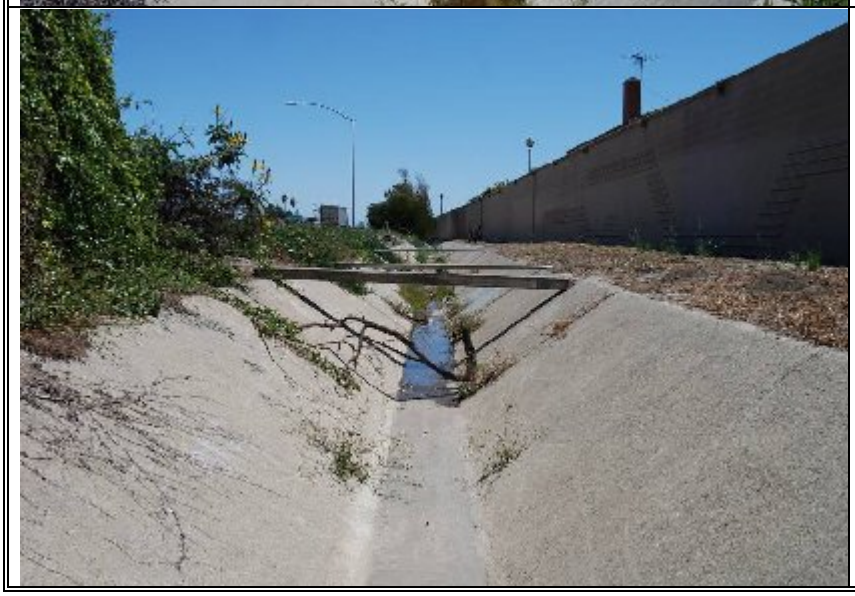
Status: No USACE CWA Section 404 Jurisdiction

Feature ID: 11-1

Photo Date: 28 April 2010

Direction: North

Status: No USACE CWA Section 404 Jurisdiction



Feature ID: 11-2

Photo Date: 28 April 2010

Direction: Southeast

Status: No USACE CWA Section 404 Jurisdiction

Feature ID: 11-3

Photo Date: 28 April 2010

Direction: North

Status: No USACE CWA Section 404 Jurisdiction

Feature ID: 11-4

Photo Date: 28 April 2010

Direction: North

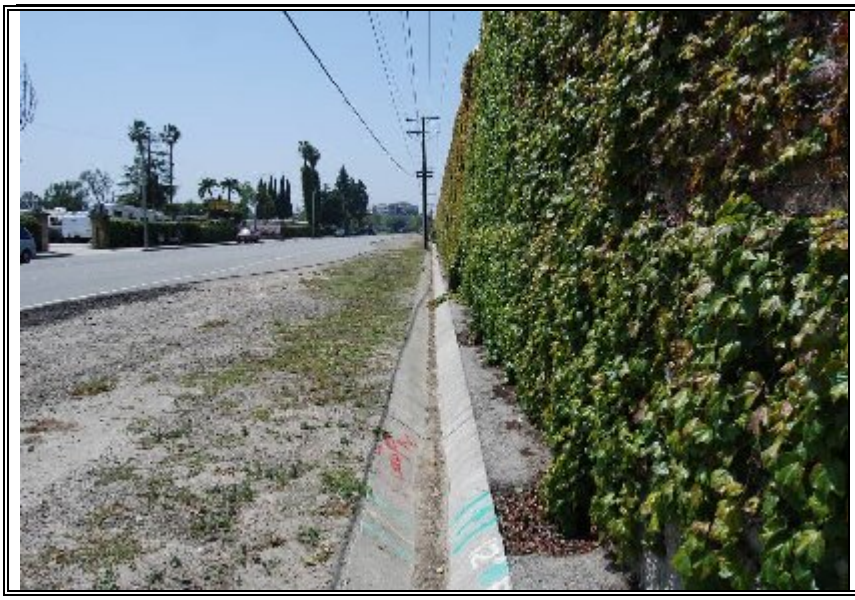
Status: No USACE CWA Section 404 Jurisdiction

Feature ID: 11-7

Photo Date: 4 August 2009

Direction: Southwest

Status: No USACE CWA Section 404 Jurisdiction

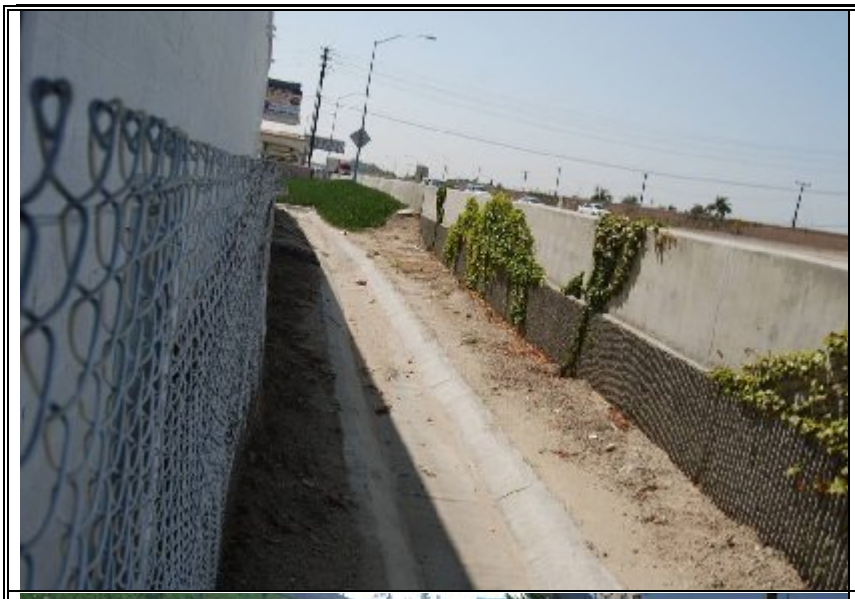


Feature ID: 12-1

Photo Date: 26 April 2010

Direction: West

Status: No USACE CWA Section 404 Jurisdiction

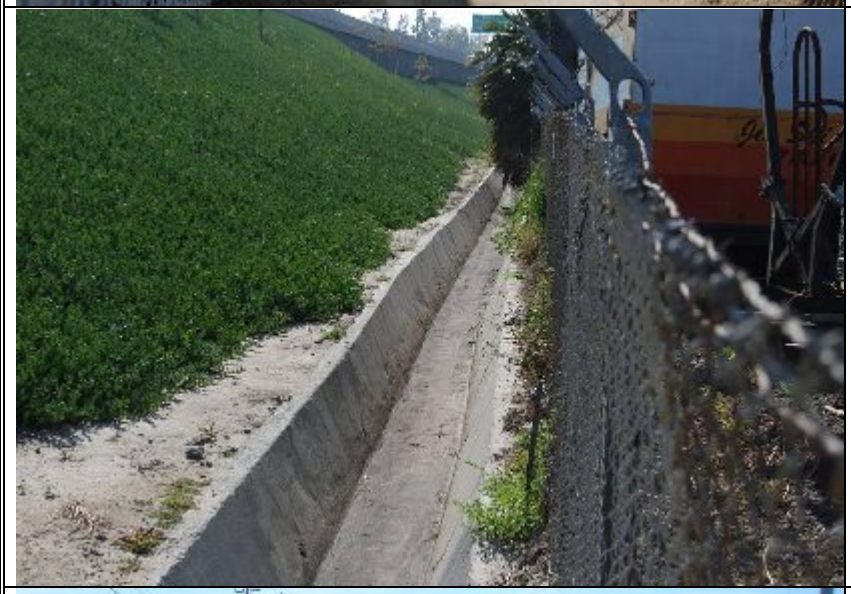


Feature ID: 14-1

Photo Date: 26 April 2010

Direction: Northwest

Status: No USACE CWA Section 404 Jurisdiction



Feature ID: 14-2

Photo Date: 26 April 2010

Direction: West

Status: No USACE CWA Section 404 Jurisdiction

Feature ID: 16-2 (Anaheim Barber City Channel)

Photo Date: 23 July 2009

Direction: Southwest, from north of I-405

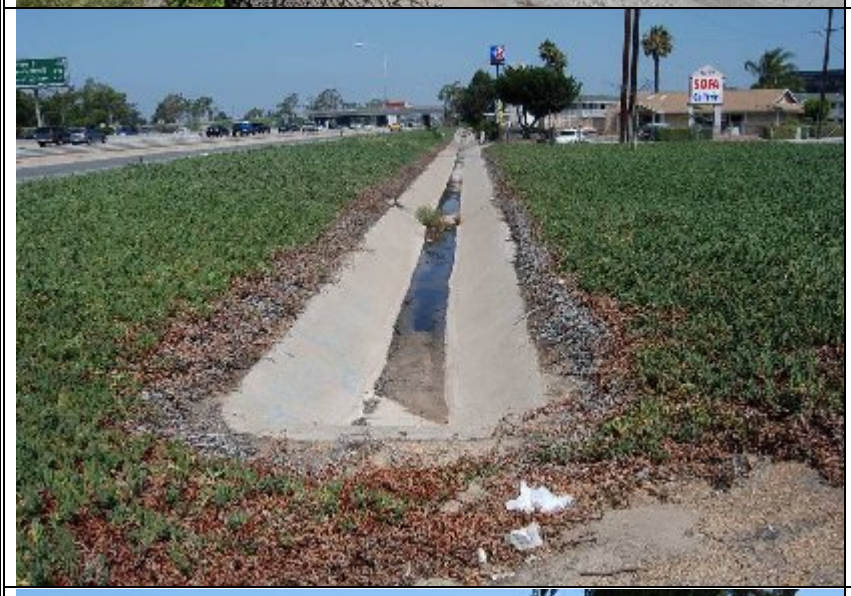
Status: USACE Jurisdictional CWA Section 404

Feature ID: 16-3

Photo Date: 27 July 2009

Direction: Southeast

Status: USACE Jurisdictional CWA Section 404

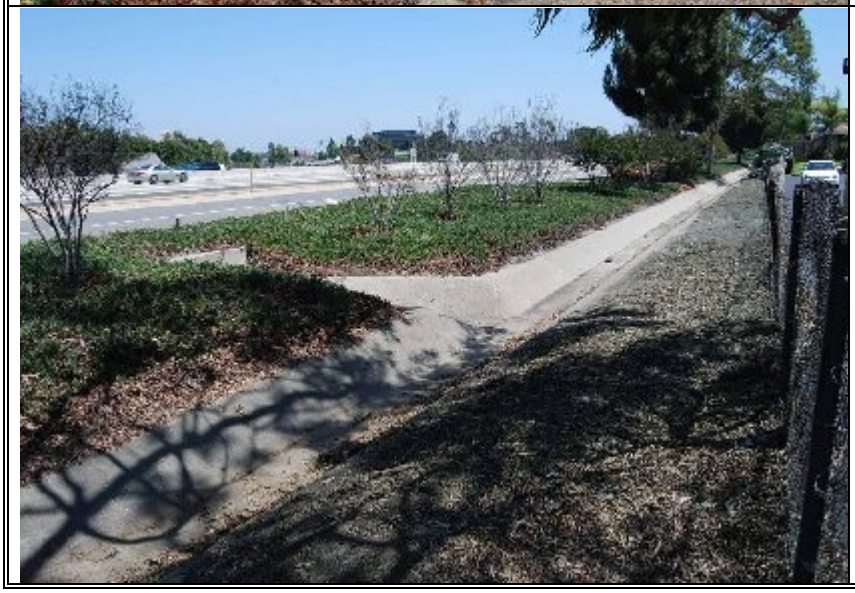


Feature ID: 16-4

Photo Date: 27 July 2009

Direction: Northwest

Status: No USACE CWA Section 404 Jurisdiction



Feature ID: 16-5

Photo Date: 4 August 2009

Direction: East

Status: No USACE CWA Section 404 Jurisdiction

Feature ID: 16-6

Photo Date: 27 July 2009

Direction: Southeast

Status: No USACE CWA Section 404 Jurisdiction

Feature ID: 17-1

Photo Date: 27 July 2009

Direction: South

Status: No USACE CWA Section 404 Jurisdiction

Feature ID: 17-2

Photo Date: 27 July 2009

Direction: West

Status: No USACE CWA Section 404 Jurisdiction

Feature ID: 17-3

Photo Date: 27 July 2009

Direction: Northwest

Status: No USACE CWA Section 404 Jurisdiction

Feature ID: 17-4

Photo Date: 27 July 2009

Direction: West

Status: No USACE CWA Section 404 Jurisdiction

Feature ID: 17-5

Photo Date: 27 July 2009

Direction: Northwest

Status: No USACE CWA Section 404 Jurisdiction

Feature ID: 18-1

Photo Date: 27 July 2009

Direction: Northwest

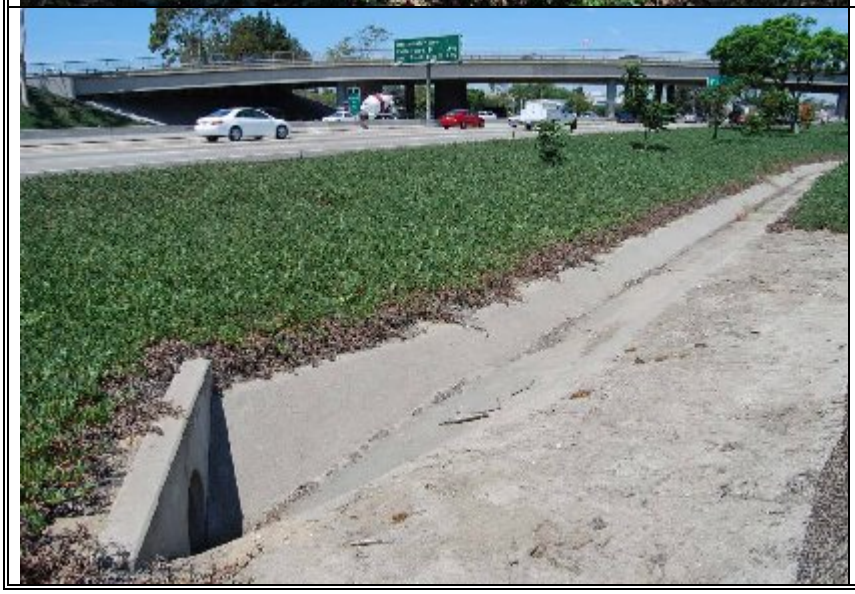
Status: No USACE CWA Section 404 Jurisdiction

Feature ID: 18-2

Photo Date: 27 July 2009

Direction: East

Status: No USACE CWA Section 404 Jurisdiction



Feature ID: 18-3

Photo Date: 27 July 2009

Direction: Northwest

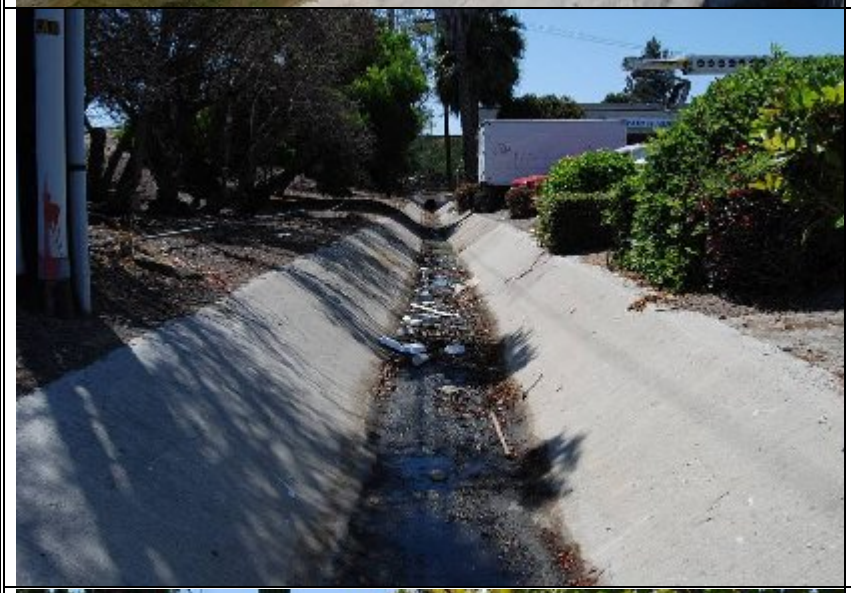
Status: No USACE CWA Section 404 Jurisdiction

Feature ID: 18-4 (Westminster Channel)

Photo Date: 27 July 2009

Direction: Northeast

Status: USACE Jurisdictional CWA Section 404



Feature ID: 18-5

Photo Date: 27 July 2009

Direction: West

Status: No USACE CWA Section 404 Jurisdiction

Feature ID: 18-6

Photo Date: 27 July 2009

Direction: West

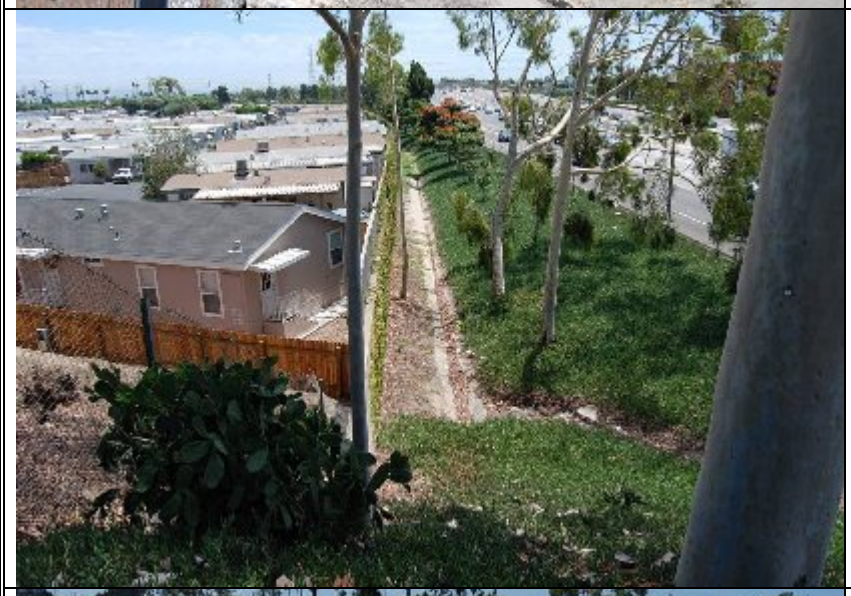
Status: No USACE CWA Section 404 Jurisdiction

Feature ID: 18-8

Photo Date: 27 July 2009

Direction: Southeast

Status: No USACE CWA Section 404 Jurisdiction



Feature ID: 19-1

Photo Date: 4 August 2009

Direction: Southeast

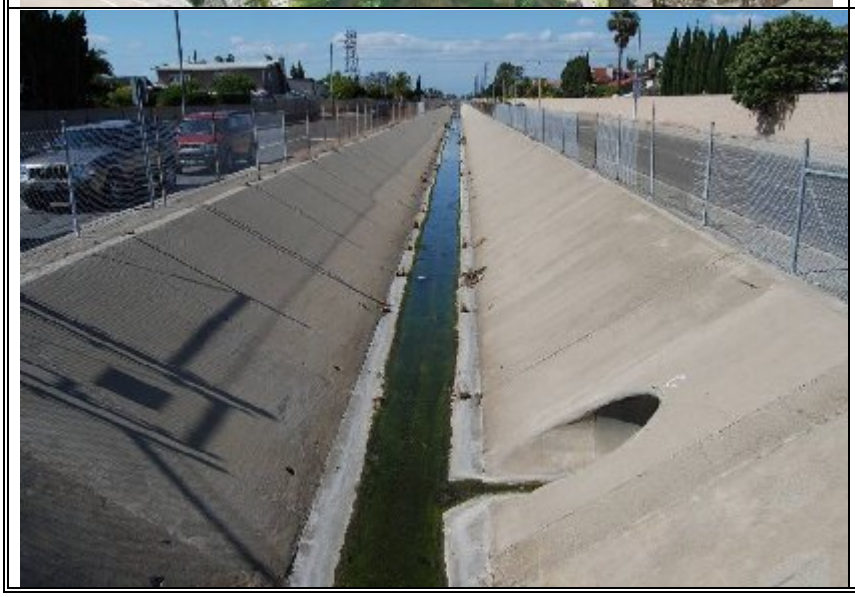
Status: No USACE CWA Section 404 Jurisdiction

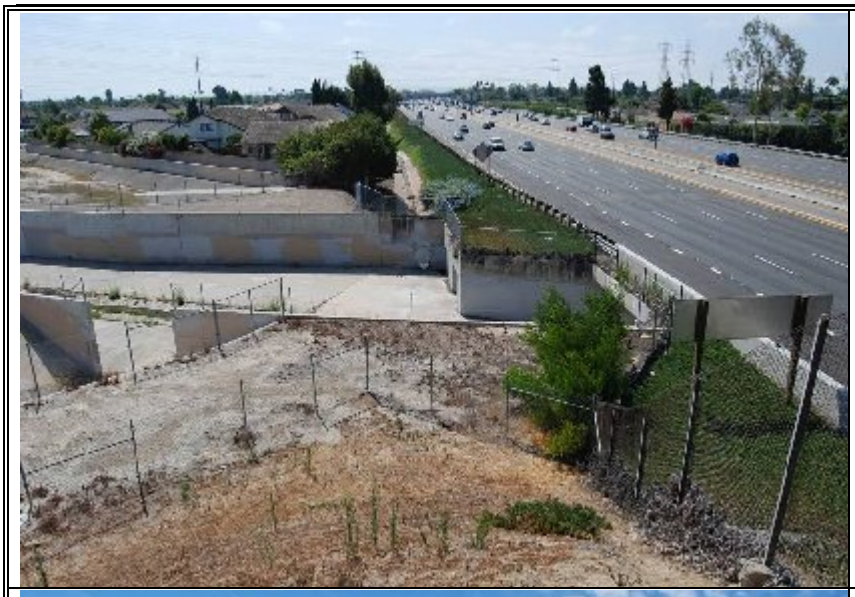
Feature ID: 19-2

Photo Date: 4 August 2009

Direction: North

Status: No USACE CWA Section 404 Jurisdiction

	Feature ID: 20-1 **Photo Date:** 4 August 2009 **Direction:** Southeast **Status:** No USACE CWA Section 404 Jurisdiction
	Feature ID: 21-1a **Photo Date:** 4 August 2009 **Direction:** South **Status:** No USACE CWA Section 404 Jurisdiction
	**Feature ID:** 21-1b **Photo Date:** 28 April 2010 **Direction:** North **Status:** No USACE CWA Section 404 Jurisdiction



Feature ID: 21-2 (East Garden Grove Wintersburg Channel)

Photo Date: 4 August 2009

Direction: Southeast, north of I-405

Status: USACE Jurisdictional CWA Section 404

Feature ID: 21-3

Photo Date: 4 August 2009

Direction: Southeast

Status: No USACE CWA Section 404 Jurisdiction

Feature ID: 21-5 (Heil Ave. Storm Drain)

Photo Date: 4 August 2009

Direction: Northeast

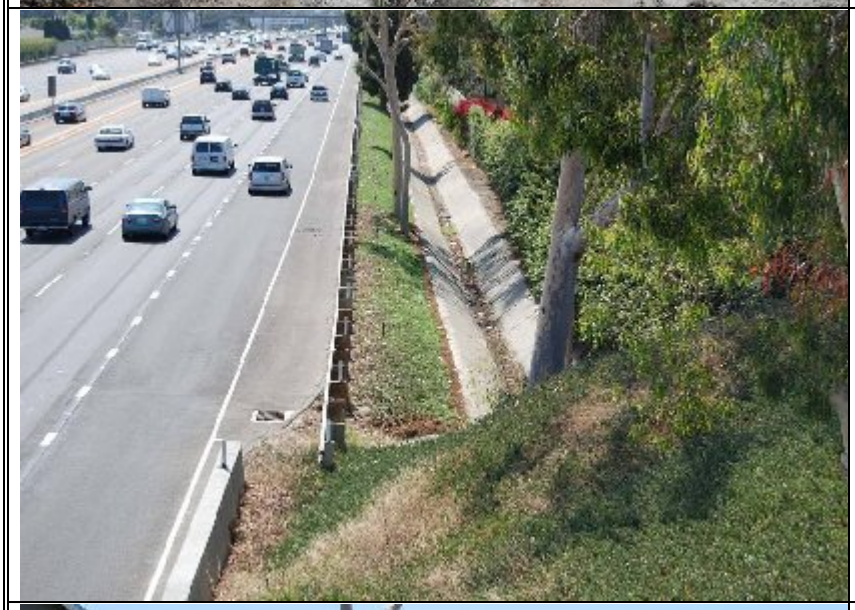
Status: No USACE CWA Section 404 Jurisdiction

Feature ID: 22-1

Photo Date: 4 August 2009

Direction: Southwest

Status: No USACE CWA Section 404 Jurisdiction

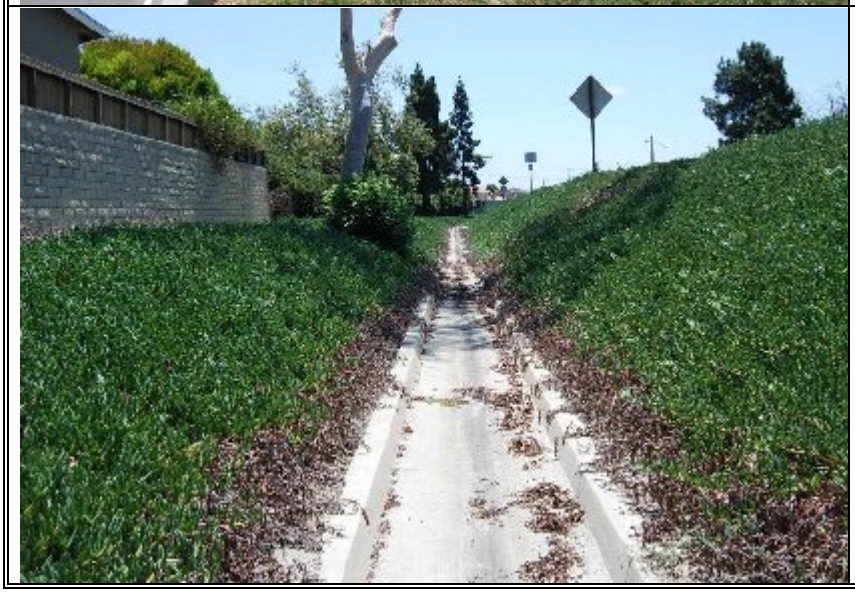


Feature ID: 22-2

Photo Date: 4 August 2009

Direction: Southeast

Status: No USACE CWA Section 404 Jurisdiction



Feature ID: 22-3

Photo Date: 4 August 2009

Direction: Southeast

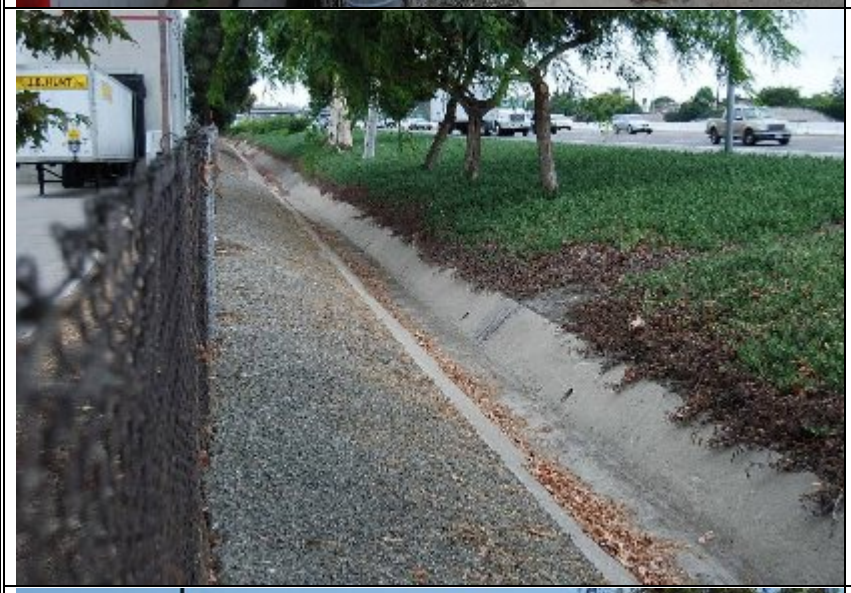
Status: No USACE CWA Section 404 Jurisdiction

Feature ID: 22-5

Photo Date: 29 July 2009

Direction: Northwest

Status: No USACE CWA Section 404 Jurisdiction



Feature ID: 22-6

Photo Date: 29 July 2009

Direction: Northwest

Status: No USACE CWA Section 404 Jurisdiction

Feature ID: 23-1 (Oceanview Channel)

Photo Date: 28 July 2009

Direction: Southeast

Status: USACE Jurisdictional CWA Section 404

Feature ID: 23-2

Photo Date: 28 July 2009

Direction: Southeast

Status: No USACE CWA Section 404 Jurisdiction

Feature ID: 23-3

Photo Date: 28 July 2009

Direction: Northwest

Status: No USACE CWA Section 404 Jurisdiction

Feature ID: 23-5

Photo Date: 28 July 2009

Direction: Southeast

Status: No USACE CWA Section 404 Jurisdiction

Feature ID: 23-6

Photo Date: 29 July 2009

Direction: Northwest

Status: No USACE CWA Section 404 Jurisdiction

Feature ID: 24-1

Photo Date: 29 July 2009

Direction: South

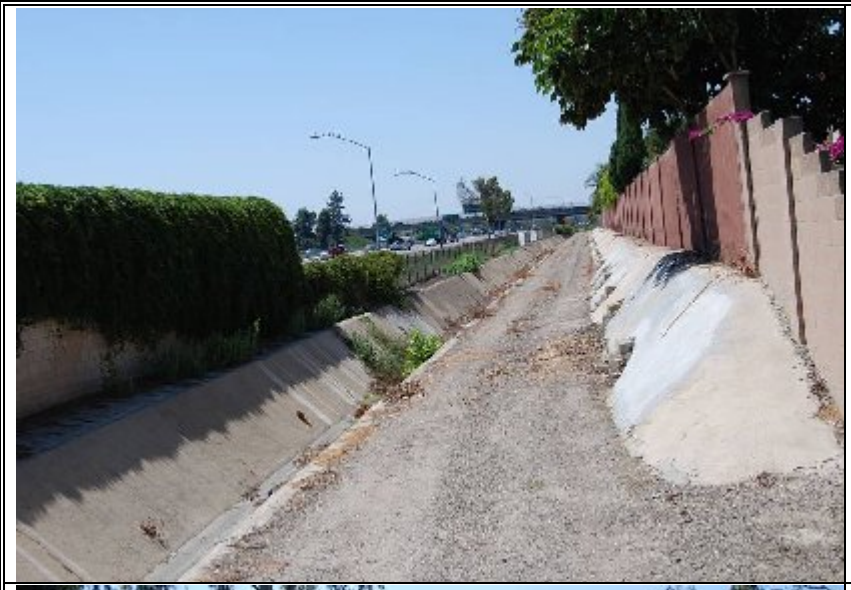
Status: No USACE CWA Section 404 Jurisdiction

Feature ID: 24-2

Photo Date: 28 July 2009

Direction: Southeast

Status: No USACE CWA Section 404 Jurisdiction



Feature ID: 24-3

Photo Date: 28 July 2009

Direction: Northwest

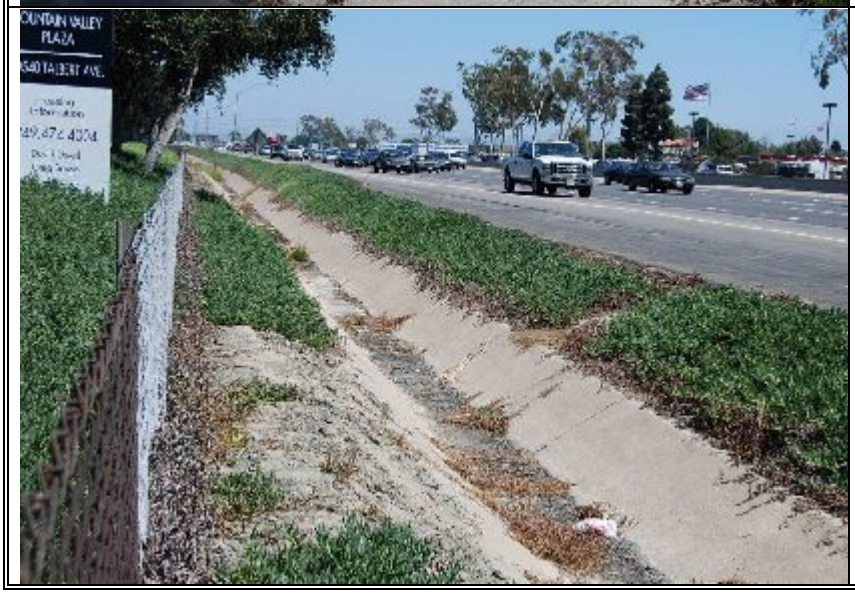
Status: No USACE CWA Section 404 Jurisdiction

Feature ID: 24-4

Photo Date: 28 July 2009

Direction: Northwest

Status: No USACE CWA Section 404 Jurisdiction

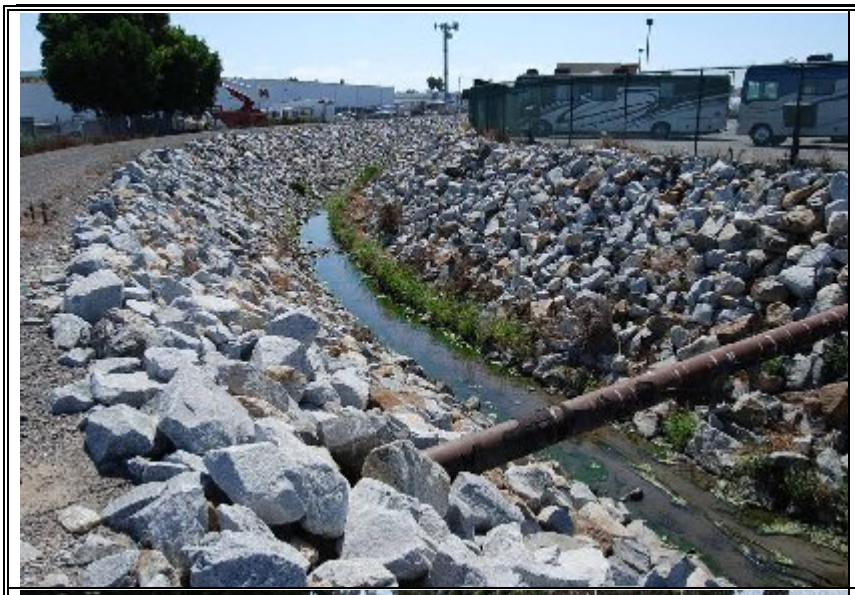


Feature ID: 25-2

Photo Date: 28 July 2009

Direction: East

Status: No USACE CWA Section 404 Jurisdiction



Feature ID: 25-4 (Fountain Valley Channel)

Photo Date: 28 July 2009

Direction: Southwest, from south of I-405

Status: USACE Jurisdictional CWA Section 404

Feature ID: 25-5

Photo Date: 4 August 2009

Direction: North

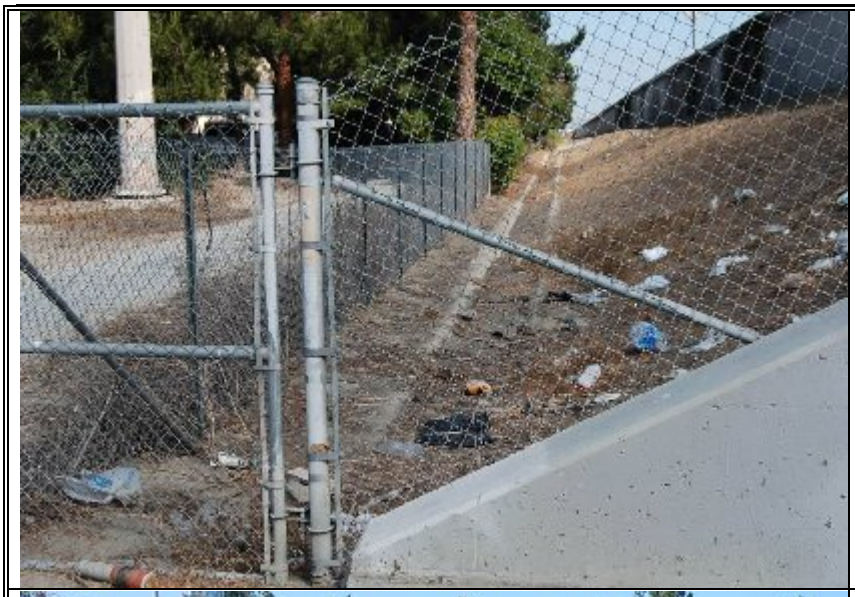
Status: No USACE CWA Section 404 Jurisdiction

Feature ID: 26-1 (Santa Ana River)

Photo Date: 29 July 2009

Direction: Northwest

Status: USACE Jurisdictional CWA Section 404



Feature ID: 26-2

Photo Date: 29 July 2009

Direction: Southeast

Status: No USACE CWA Section 404 Jurisdiction

Feature ID: 27-1 (Greenville Banning Channel north)

Photo Date: 28 April 2010

Direction: West

Status: USACE Jurisdictional CWA Section 404

Feature ID: 28-1

Photo Date: 27 April 2010

Direction: West

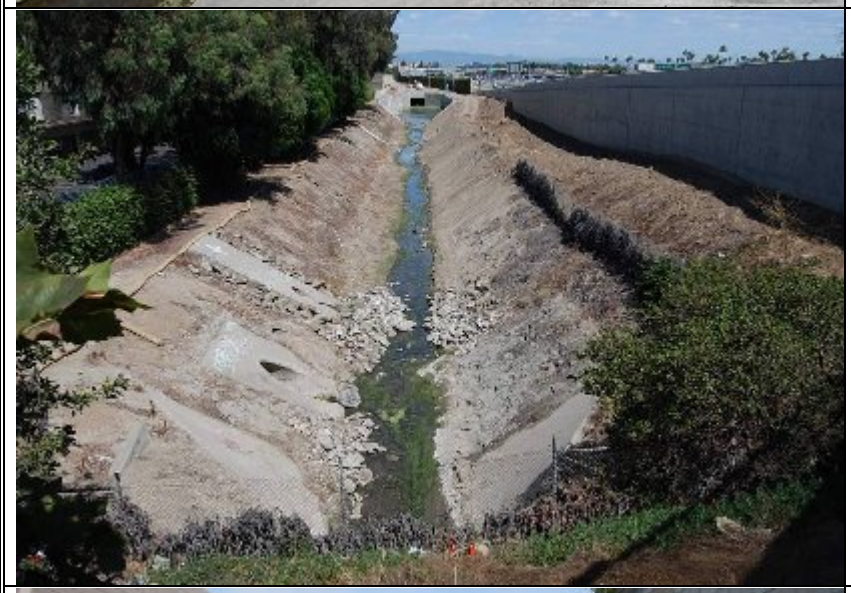
Status: No USACE CWA Section 404 Jurisdiction

Feature ID: 28-2a (Gisler Storm Channel west)

Photo Date: 4 April 2009

Direction: Northwest

Status: USACE Jurisdictional CWA Section 404



Feature ID: 28-2b (Gisler Storm Channel East)

Photo Date: 4 April 2009

Direction: Southeast

Status: USACE Jurisdictional CWA Section 404

Feature ID: 29-1

Photo Date: 27 April 2010

Direction: Southwest

Status: No USACE CWA Section 404 Jurisdiction

Feature ID: 30-1

Photo Date: 27 April 2010

Direction: East

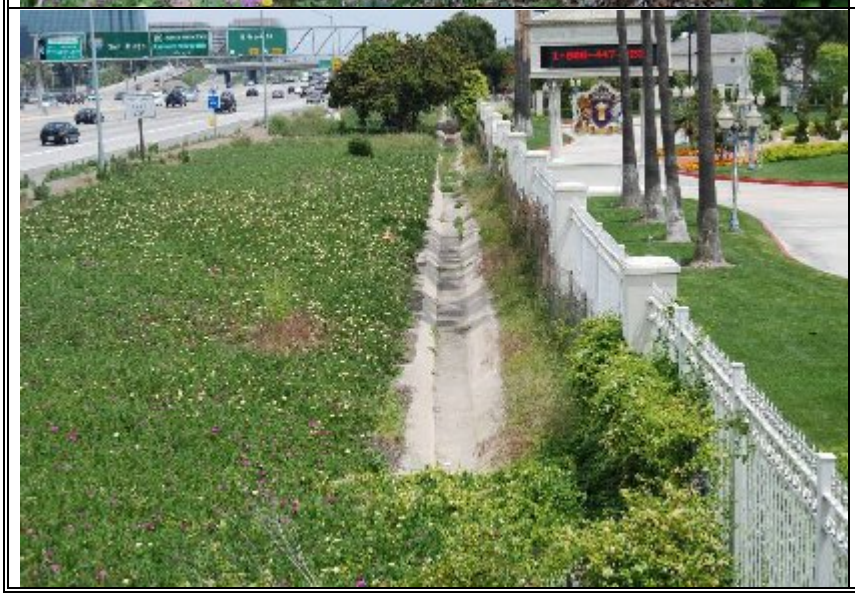
Status: No USACE CWA Section 404 Jurisdiction

Feature ID: 30-2

Photo Date: 27 April 2010

Direction: East

Status: No USACE CWA Section 404 Jurisdiction



Feature ID: 31-1

Photo Date: 27 April 2010

Direction: East

Status: No USACE CWA Section 404 Jurisdiction

Feature ID: 31-2a (Santa Ana Delhi Channel north)

Photo Date: 27 April 2010

Direction: South

Status: USACE Jurisdictional CWA Section 404

Feature ID: 31-2a (Santa Ana Delhi Channel south)

Photo Date: 27 April 2010

Direction: North

Status: USACE Jurisdictional CWA Section 404

Feature ID: 31-3

Photo Date: 27 April 2010

Direction: West

Status: No USACE CWA Section 404 Jurisdiction

Feature ID: 31-4

Photo Date: 27 April 2010

Direction: East

Status: No USACE CWA Section 404 Jurisdiction

Appendix C
Approved Jurisdictional Determination Forms

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD):

B. DISTRICT OFFICE, FILE NAME, AND NUMBER:

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State:CA County/parish/borough: LA City: Los Alamitos
Center coordinates of site (lat/long in degree decimal format): Lat. ° **Pick List**, Long. ° **Pick List**.
Universal Transverse Mercator: 399907 m E, 3741189 m N
Name of nearest waterbody: Feature 3-6, Coyote Creek, is a blueline drainage tributary to the San Gabriel River.
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Tidally-influenced portion of the San Gabriel River
Name of watershed or Hydrologic Unit Code (HUC): San Gabriel River (18070106)

- ☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
- ☒ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

- ☐ Office (Desk) Determination. Date:
- ☐ Field Determination. Date(s):

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Are no** *"navigable waters of the U.S."* within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]

- ☐ Waters subject to the ebb and flow of the tide.
- ☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. Explain: .

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Are** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):** [1]
   - ☐ TNWs, including territorial seas
   - ☐ Wetlands adjacent to TNWs
   - ☒ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
   - ☐ Non-RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
   - ☐ Impoundments of jurisdictional waters
   - ☐ Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**
   Non-wetland waters: 333 linear feet: 150 width (ft) and/or 1.22 acres.
   Wetlands: 0.0 acres.

   c. **Limits (boundaries) of jurisdiction** based on: **Established by OHWM.**
   Elevation of established OHWM (if known):approximately 14 ft above msl.

2. **Non-regulated waters/wetlands (check if applicable):**[3]
   - ☐ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional. Explain: .

---

[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).
[3] Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. TNW
Identify TNW: .

Summarize rationale supporting determination: .

2. Wetland adjacent to TNW
Summarize rationale supporting conclusion that wetland is "adjacent": .

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. Characteristics of non-TNWs that flow directly or indirectly into TNW

(i) General Area Conditions:
Watershed size: 457,461 **acres**
Drainage area: approximately 7800 **acres**
Average annual rainfall: 16 inches
Average annual snowfall: 0 inches

(ii) Physical Characteristics:
(a) Relationship with TNW:
☒ Tributary flows directly into TNW.
☐ Tributary flows through **Pick List** tributaries before entering TNW.

Project waters are **2-5** river miles from TNW.
Project waters are **1 (or less)** river miles from RPW.
Project waters are **1-2** aerial (straight) miles from TNW.
Project waters are **1 (or less)** aerial (straight) miles from RPW.
Project waters cross or serve as state boundaries. Explain: No state boundaries are crossed.

[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

Identify flow route to TNW[5]: Storm water flows within Coyote Creek originate approximately 7.2 miles northeast within the City of La Habra. Flows are directed through a concrete flood-control channel for approximately 6.4 miles before reaching the tidally-influenced portion of the San Gabriel River, which is a TNW.
Tributary stream order, if known: 2.

(b) General Tributary Characteristics (check all that apply):

Tributary is:
- ☐ Natural
- ☒ Artificial (man-made). Explain: The tributary is a concrete-lined flood control channel.
- ☐ Manipulated (man-altered). Explain: .

Tributary properties with respect to top of bank (estimate):
Average width: 150 feet
Average depth: 15 feet
Average side slopes: **2:1.**

Primary tributary substrate composition (check all that apply):

☐ Silts	☐ Sands	☒ Concrete
☐ Cobbles	☐ Gravel	☐ Muck
☐ Bedrock	☐ Vegetation. Type/% cover:	
☐ Other. Explain: .		

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: Stable.
Presence of run/riffle/pool complexes. Explain: None.
Tributary geometry: **Relatively straight**
Tributary gradient (approximate average slope): 1 %

(c) Flow:
Tributary provides for: **Seasonal flow**
Estimate average number of flow events in review area/year: **20 (or greater)**
Describe flow regime: Flows originate from seasonal storm runoff and excess irrigation runoff associated with roadways and other infrastructure.
Other information on duration and volume: Flows are present within the low-flow channel of Coyote Creek for most of the year. During storm events, considerable flows are present.

Surface flow is: **Confined.** Characteristics: Flows are confined within a concrete channel.

Subsurface flow: **No**. Explain findings: Concrete lining has no water infiltration.
- ☐ Dye (or other) test performed: .

Tributary has (check all that apply):
- ☐ Bed and banks
- ☒ OHWM[6] (check all indicators that apply):

☐ clear, natural line impressed on the bank	☐ the presence of litter and debris
☐ changes in the character of soil	☐ destruction of terrestrial vegetation
☐ shelving	☐ the presence of wrack line
☐ vegetation matted down, bent, or absent	☐ sediment sorting
☐ leaf litter disturbed or washed away	☐ scour
☐ sediment deposition	☐ multiple observed or predicted flow events
☒ water staining	☐ abrupt change in plant community
☐ other (list):	

- ☐ Discontinuous OHWM.[7] Explain: .

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):

☐ High Tide Line indicated by:	☐ Mean High Water Mark indicated by:
☐ oil or scum line along shore objects	☐ survey to available datum;
☐ fine shell or debris deposits (foreshore)	☐ physical markings;
☐ physical markings/characteristics	☐ vegetation lines/changes in vegetation types.
☐ tidal gauges	
☐ other (list):	

[5] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.
[6] A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.
[7] Ibid.

(iii) Chemical Characteristics:

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).

Explain: Flows resulting from runoff originate within a densely-developed urban environment containing major roadways and residential/commercial developments.

Identify specific pollutants, if known: Pollutants within urban environements include, but are not limited to, pathogens, fertilizers/nutrients, hydrocarbons, and metals. Common automotive contaminates include suspended solids, lead, phosphorus, polycyclic aromatic hydrocarbons, trash, and debris.

(iv) Biological Characteristics. Channel supports (check all that apply):

☐ Riparian corridor. Characteristics (type, average width): .
☐ Wetland fringe. Characteristics: .
☐ Habitat for:
☐ Federally Listed species. Explain findings: .
☐ Fish/spawn areas. Explain findings: .
☐ Other environmentally-sensitive species. Explain findings: .
☒ Aquatic/wildlife diversity. Explain findings: Flows within Coyote Creek, a RPW, provide aquatic habitat for commonly-occurring birds, mammals, and amphibians.

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW

(i) Physical Characteristics:

(a) General Wetland Characteristics:
Properties:
Wetland size:0.0 acres
Wetland type. Explain: .
Wetland quality. Explain: .
Project wetlands cross or serve as state boundaries. Explain: .

(b) General Flow Relationship with Non-TNW:
Flow is: **Pick List**. Explain: .

Surface flow is**: Pick List**
Characteristics: .

Subsurface flow: **Pick List**. Explain findings: .
☐ Dye (or other) test performed: .

(c) Wetland Adjacency Determination with Non-TNW:
☐ Directly abutting
☐ Not directly abutting
☐ Discrete wetland hydrologic connection. Explain: .
☐ Ecological connection. Explain: .
☐ Separated by berm/barrier. Explain: .

(d) Proximity (Relationship) to TNW
Project wetlands are **Pick List** river miles from TNW.
Project waters are **Pick List** aerial (straight) miles from TNW.
Flow is from: **Pick List.**
Estimate approximate location of wetland as within the **Pick List** floodplain.

(ii) Chemical Characteristics:

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: .
Identify specific pollutants, if known: .

(iii) Biological Characteristics. Wetland supports (check all that apply):

☐ Riparian buffer. Characteristics (type, average width): .
☐ Vegetation type/percent cover. Explain: .
☐ Habitat for:
☐ Federally Listed species. Explain findings: .
☐ Fish/spawn areas. Explain findings: .
☐ Other environmentally-sensitive species. Explain findings: .
☐ Aquatic/wildlife diversity. Explain findings: .

3. Characteristics of all wetlands adjacent to the tributary (if any)

All wetland(s) being considered in the cumulative analysis: **Pick List**
Approximately ( ) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Directly abuts? (Y/N)	Size (in acres)	Directly abuts? (Y/N)	Size (in acres)

Summarize overall biological, chemical and physical functions being performed: .

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: .

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
   ☐ TNWs: linear feet width (ft), Or, acres.
   ☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**
   ☐ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: .
   ☒ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: Flows were observed during August 2009, during the middle of the dry season and is assumed to flow continuously during the wet season.

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: **333** linear feet **150** width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .

3. **Non-RPWs[8] that flow directly or indirectly into TNWs.**
☐ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: **.**

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**
☐ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: **.**

☐ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**
☐ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

6. **Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**
☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. **Impoundments of jurisdictional waters.[9]**
As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.
☐ Demonstrate that impoundment was created from "waters of the U.S.," or
☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):[10]
☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
☐ which are or could be used for industrial purposes by industries in interstate commerce.
☐ Interstate isolated waters. Explain: .
☐ Other factors. Explain: .

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[8] See Footnote # 3.
[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.
[10] Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.*

Identify water body and summarize rationale supporting determination: .

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .
☐ Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):
☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
☐ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: .
☐ Other: (explain, if not covered above): .

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):
☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:2011 Jurisdictional Determination Report for the Interstate 405 Improvement Project.
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
☐ Office concurs with data sheets/delineation report.
☐ Office does not concur with data sheets/delineation report.
☐ Data sheets prepared by the Corps: .
☐ Corps navigable waters' study: .
☐ U.S. Geological Survey Hydrologic Atlas: .
☐ USGS NHD data.
☐ USGS 8 and 12 digit HUC maps.
☒ U.S. Geological Survey map(s). Cite scale & quad name:7.5 minute Los Alamitos Quadrangle Map.
☐ USDA Natural Resources Conservation Service Soil Survey. Citation: .
☒ National wetlands inventory map(s). Cite name:U.S. Department of the Interior, U.S. Fish and Wildlife Service (USFWS). 2009. National Wetlands Inventory- Wetlands and Deepwater Habitats of the Conterminous United States. Vector digital data: CONUS_wet_poly. Division of Habitat and Resource Conservation, Washington, D.C. <URL: http://wetlandsfws.er.usgs.gov/NWI/download.html >.
☐ State/Local wetland inventory map(s): .
☒ FEMA/FIRM maps:Federal Emergency Management Agency (FEMA). 1998. Q3 Flood data 100-Year flood plain map..
☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
☒ Photographs: ☒ Aerial (Name & Date):Digital Globe, 2010.
or ☒ Other (Name & Date):2011 Jurisdictional Determination Report, Appendix B photograph log.
☐ Previous determination(s). File no. and date of response letter: .
☐ Applicable/supporting case law: .
☐ Applicable/supporting scientific literature: .
☒ Other information (please specify):Refer to the 2011 Jurisdictional Determination Report for the Interstate 405 Improvement Project for additional information.

B. ADDITIONAL COMMENTS TO SUPPORT JD: .

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD):

B. DISTRICT OFFICE, FILE NAME, AND NUMBER:

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State:CA County/parish/borough: LA City: Los Alamitos
Center coordinates of site (lat/long in degree decimal format): Lat. ° **Pick List**, Long. ° **Pick List**.
Universal Transverse Mercator: 399663 m E, 3740803 m N
Name of nearest waterbody: Feature 4-1, Alamitos Channel, is a blueline tributary draining to the San Gabriel River.
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Tidally-influenced portion of the San Gabriel River
Name of watershed or Hydrologic Unit Code (HUC): San Gabriel River (18070106)

- ☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
- ☒ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

- ☐ Office (Desk) Determination. Date:
- ☐ Field Determination. Date(s):

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Are no** *"navigable waters of the U.S."* within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]

- ☐ Waters subject to the ebb and flow of the tide.
- ☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. Explain: .

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Are** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):** [1]
   - ☐ TNWs, including territorial seas
   - ☐ Wetlands adjacent to TNWs
   - ☒ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
   - ☐ Non-RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
   - ☐ Impoundments of jurisdictional waters
   - ☐ Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**
   Non-wetland waters: 4,878 linear feet: 220 width (ft) and/or 12.45 acres.
   Wetlands: 0.0 acres.

   c. **Limits (boundaries) of jurisdiction** based on: **Established by OHWM.**
   Elevation of established OHWM (if known):approximately 5 ft above msl.

2. **Non-regulated waters/wetlands (check if applicable):**[3]
   - ☐ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional. Explain: .

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[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).
[3] Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. TNW
Identify TNW: .

Summarize rationale supporting determination: .

2. Wetland adjacent to TNW
Summarize rationale supporting conclusion that wetland is "adjacent": .

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. Characteristics of non-TNWs that flow directly or indirectly into TNW

(i) General Area Conditions:
Watershed size: 457,461 **acres**
Drainage area: approximately 557.2 **acres**
Average annual rainfall: 16 inches
Average annual snowfall: 0 inches

(ii) Physical Characteristics:
(a) Relationship with TNW:
☒ Tributary flows directly into TNW.
☐ Tributary flows through **Pick List** tributaries before entering TNW.

Project waters are **1 (or less)** river miles from TNW.
Project waters are **1 (or less)** river miles from RPW.
Project waters are **1-2** aerial (straight) miles from TNW.
Project waters are **1 (or less)** aerial (straight) miles from RPW.
Project waters cross or serve as state boundaries. Explain: No state boundaries are crossed.

Identify flow route to TNW[5]: Storm water flows originate between Los Alamitos Blvd and Bloomfield Road, south of Wardlow. Surface water flows are directed into an underground strorm-drain system that daylights South of Cerritos St

[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.
[5] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

and east of Coyote Creek. Flows are then directed southwest within Los Alamitos Channel for approximately 7174 ft before reachings a pump station that pumps flows into Coyote Creek. Flows then drain for 1010 ft before draining into the San Gabriel River. Flows are then directed south within the San Gabriel River for 6355 ft before reaching the tidally-influenced portion of the river, which is a TNW.
Tributary stream order, if known: 1.

(b) General Tributary Characteristics (check all that apply):
Tributary is: ☐ Natural
☐ Artificial (man-made). Explain: .
☒ Manipulated (man-altered). Explain: The channel contains earthen walls and bed within the review area.

Tributary properties with respect to top of bank (estimate):
Average width: 220 feet
Average depth: 18 feet
Average side slopes: **2:1.**

Primary tributary substrate composition (check all that apply):
☒ Silts ☒ Sands ☐ Concrete
☐ Cobbles ☐ Gravel ☐ Muck
☐ Bedrock ☒ Vegetation. Type/% cover: Upland vegetation occurs within the upper channel, whereas hydrophytic vegetation occurs within the low-flow channel (outside of review area).
☐ Other. Explain: .

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: Stable.
Presence of run/riffle/pool complexes. Explain: None.
Tributary geometry: **Relatively straight**
Tributary gradient (approximate average slope): 1 %

(c) Flow:
Tributary provides for: **Seasonal flow**
Estimate average number of flow events in review area/year: **11-20**
Describe flow regime: Flows originate from seasonal storm runoff and excess irrigation runoff associated with roadways and other infrastructure within a densely-developed localized drainage area.
Other information on duration and volume: Discharge of flows from a pump station within a detention basin vary according to precipitation events.

Surface flow is: **Confined.** Characteristics: Flows are confined within an earthen basin.

Subsurface flow: **Unknown**. Explain findings: Ssome subsurface groundwater may be present within the earthen detention basin.
☐ Dye (or other) test performed: .

Tributary has (check all that apply):
☐ Bed and banks
☐ OHWM[6] (check all indicators that apply):
☒ clear, natural line impressed on the bank ☒ the presence of litter and debris
☐ changes in the character of soil ☒ destruction of terrestrial vegetation
☒ shelving ☐ the presence of wrack line
☐ vegetation matted down, bent, or absent ☐ sediment sorting
☐ leaf litter disturbed or washed away ☐ scour
☒ sediment deposition ☐ multiple observed or predicted flow events
☒ water staining ☐ abrupt change in plant community
☐ other (list):
☐ Discontinuous OHWM.[7] Explain: .

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):
☐ High Tide Line indicated by: ☐ Mean High Water Mark indicated by:
☐ oil or scum line along shore objects ☐ survey to available datum;
☐ fine shell or debris deposits (foreshore) ☐ physical markings;
☐ physical markings/characteristics ☐ vegetation lines/changes in vegetation types.

[6]A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.
[7]Ibid.

☐ tidal gauges
☐ other (list):

(iii) Chemical Characteristics:

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).

Explain: Flow was observed during the field visits (July/August 2009 and April 2010). Flows resulting from runoff originate within a densely-developed urban environment containing major roadways.

Identify specific pollutants, if known: Pollutants within urban environements include, but are not limited to, pathogens, fertilizers/nutrients, hydrocarbons, and metals. Common automotive contaminates include suspended solids, lead, phosphorus, polycyclic aromatic hydrocarbons, trash, and debris.

(iv) Biological Characteristics. Channel supports (check all that apply):

☐ Riparian corridor. Characteristics (type, average width): .
☐ Wetland fringe. Characteristics: .
☒ Habitat for:
☐ Federally Listed species. Explain findings: .
☐ Fish/spawn areas. Explain findings: .
☐ Other environmentally-sensitive species. Explain findings: .
☒ Aquatic/wildlife diversity. Explain findings: The RPW provides aquatic habitat for commonly-occuring birds, mammals, amphibians, and invertebrates.

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW

(i) Physical Characteristics:

(a) General Wetland Characteristics:
Properties:
Wetland size:0.0 acres
Wetland type. Explain: .
Wetland quality. Explain: .
Project wetlands cross or serve as state boundaries. Explain: .

(b) General Flow Relationship with Non-TNW:
Flow is: **Pick List**. Explain: .

Surface flow is**: Pick List**
Characteristics: .

Subsurface flow: **Pick List**. Explain findings: .
☐ Dye (or other) test performed: .

(c) Wetland Adjacency Determination with Non-TNW:
☐ Directly abutting
☐ Not directly abutting
☐ Discrete wetland hydrologic connection. Explain: .
☐ Ecological connection. Explain: .
☐ Separated by berm/barrier. Explain: .

(d) Proximity (Relationship) to TNW
Project wetlands are **Pick List** river miles from TNW.
Project waters are **Pick List** aerial (straight) miles from TNW.
Flow is from: **Pick List.**
Estimate approximate location of wetland as within the **Pick List** floodplain.

(ii) Chemical Characteristics:

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: .
Identify specific pollutants, if known: .

(iii) Biological Characteristics. Wetland supports (check all that apply):

☐ Riparian buffer. Characteristics (type, average width): .
☐ Vegetation type/percent cover. Explain: .
☐ Habitat for:
☐ Federally Listed species. Explain findings: .
☐ Fish/spawn areas. Explain findings: .
☐ Other environmentally-sensitive species. Explain findings: .
☐ Aquatic/wildlife diversity. Explain findings: .

3. Characteristics of all wetlands adjacent to the tributary (if any)

All wetland(s) being considered in the cumulative analysis: **Pick List**
Approximately ( ) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Directly abuts? (Y/N)	Size (in acres)	Directly abuts? (Y/N)	Size (in acres)

Summarize overall biological, chemical and physical functions being performed: .

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: .

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
   ☐ TNWs: linear feet width (ft), Or, acres.
   ☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**
   ☐ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: .
   ☒ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: Flows were observed during August 2009, during the middle of the dry season and are assumed to flow continuously during the wet season.

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: **3928** linear feet **220** width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .

3. **Non-RPWs[8] that flow directly or indirectly into TNWs.**
☐ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: **.**

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**
☐ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: **.**

☐ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**
☐ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

6. **Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**
☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. **Impoundments of jurisdictional waters.[9]**
As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.
☐ Demonstrate that impoundment was created from "waters of the U.S.," or
☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):[10]
☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
☐ which are or could be used for industrial purposes by industries in interstate commerce.
☐ Interstate isolated waters. Explain: .
☐ Other factors. Explain: .

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[8] See Footnote # 3.
[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.
[10] Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.*

Identify water body and summarize rationale supporting determination: .

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .
☐ Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):
☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
☐ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: .
☐ Other: (explain, if not covered above): .

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):
☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:2011 Jurisdictional Determination Report for the Interstate 405 Improvement Project.
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
☐ Office concurs with data sheets/delineation report.
☐ Office does not concur with data sheets/delineation report.
☐ Data sheets prepared by the Corps: .
☐ Corps navigable waters' study: .
☐ U.S. Geological Survey Hydrologic Atlas: .
☐ USGS NHD data.
☐ USGS 8 and 12 digit HUC maps.
☒ U.S. Geological Survey map(s). Cite scale & quad name:7.5 minute Los Alamitos Quadrangle Map.
☐ USDA Natural Resources Conservation Service Soil Survey. Citation: .
☒ National wetlands inventory map(s). Cite name:U.S. Department of the Interior, U.S. Fish and Wildlife Service (USFWS). 2009. National Wetlands Inventory- Wetlands and Deepwater Habitats of the Conterminous United States. Vector digital data: CONUS_wet_poly. Division of Habitat and Resource Conservation, Washington, D.C. <URL: http://wetlandsfws.er.usgs.gov/NWI/download.html >.
☐ State/Local wetland inventory map(s): .
☒ FEMA/FIRM maps:Federal Emergency Management Agency (FEMA). 1998. Q3 Flood data 100-Year flood plain map..
☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
☒ Photographs: ☒ Aerial (Name & Date):Digital Globe, 2008.
or ☒ Other (Name & Date):2011 Jurisdictional Determination Report, Appendix B photograph log.
☐ Previous determination(s). File no. and date of response letter: .
☐ Applicable/supporting case law: .
☐ Applicable/supporting scientific literature: .
☒ Other information (please specify):Refer to the 2011 Jurisdictional Determination Report for the Interstate 405 Improvement Project for additional information.

B. ADDITIONAL COMMENTS TO SUPPORT JD: .

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD):

B. DISTRICT OFFICE, FILE NAME, AND NUMBER:

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State:CA County/parish/borough: Orange City: Rossmoor
Center coordinates of site (lat/long in degree decimal format): Lat. ° **Pick List**, Long. ° **Pick List**.
Universal Transverse Mercator: 399108 m E, 3738876 m N
Name of nearest waterbody: Feature 4-3, Mainway Drive Channel, is an unnamed blueline tributary draining to Los Alamitos Channel and the San Gabriel River.

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Tidally-influenced portion of the San Gabriel River
Name of watershed or Hydrologic Unit Code (HUC): San Gabriel River (18070106)

- ☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
- ☒ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

- ☐ Office (Desk) Determination. Date:
- ☐ Field Determination. Date(s):

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Are no** "*navigable waters of the U.S.*" within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]

- ☐ Waters subject to the ebb and flow of the tide.
- ☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. Explain: .

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Are** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):** [1]
   - ☐ TNWs, including territorial seas
   - ☐ Wetlands adjacent to TNWs
   - ☒ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
   - ☐ Non-RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
   - ☐ Impoundments of jurisdictional waters
   - ☐ Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**
   Non-wetland waters: 974 linear feet: 4 width (ft) and/or acres.
   Wetlands: 0.0 acres.

   c. **Limits (boundaries) of jurisdiction** based on: **Established by OHWM.**
   Elevation of established OHWM (if known):approximately 10 ft above msl.

2. **Non-regulated waters/wetlands (check if applicable):**[3]
   - ☐ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional. Explain: .

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[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).
[3] Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. TNW
Identify TNW: .

Summarize rationale supporting determination: .

2. Wetland adjacent to TNW
Summarize rationale supporting conclusion that wetland is "adjacent": .

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. Characteristics of non-TNWs that flow directly or indirectly into TNW

(i) General Area Conditions:
Watershed size: 434,140 **acres**
Drainage area: approximately 800 **acres**
Average annual rainfall: 16 inches
Average annual snowfall: 0 inches

(ii) Physical Characteristics:
(a) Relationship with TNW:
☐ Tributary flows directly into TNW.
☒ Tributary flows through **2** tributaries before entering TNW.

Project waters are **1-2** river miles from TNW.
Project waters are **1 (or less)** river miles from RPW.
Project waters are **1-2** aerial (straight) miles from TNW.
Project waters are **1 (or less)** aerial (straight) miles from RPW.
Project waters cross or serve as state boundaries. Explain: No state boundaries are crossed.

Identify flow route to TNW[5]: Storm water and residential landscape flows originate in the vicinity of Montecito Road in the City of Rossmoor where flows are directed southwest for approximately 5994 ft before draining into Los Alamitos

[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.
[5] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

Channel. Flows then drain south within Los Alamitos Channel before entering a pump station that discharges into the tidally-influenced portion of San Gabriel River south of Westminster Blvd.
Tributary stream order, if known: 1.

(b) General Tributary Characteristics (check all that apply):

Tributary is:
- ☐ Natural
- ☒ Artificial (man-made). Explain: The tributary is a concrete-lined flood control channel.
- ☐ Manipulated (man-altered). Explain: .

Tributary properties with respect to top of bank (estimate):
Average width: 15 feet
Average depth: 4 feet
Average side slopes: **2:1.**

Primary tributary substrate composition (check all that apply):

☐ Silts	☐ Sands	☒ Concrete
☐ Cobbles	☐ Gravel	☐ Muck
☐ Bedrock	☐ Vegetation. Type/% cover:	
☐ Other. Explain: .		

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: Stable.
Presence of run/riffle/pool complexes. Explain: None.
Tributary geometry: **Relatively straight**
Tributary gradient (approximate average slope): 1 %

(c) Flow:
Tributary provides for: **Seasonal flow**
Estimate average number of flow events in review area/year: **11-20**
Describe flow regime: Flows originate from seasonal storm runoff and excess irrigation runoff associated with roadways, residences, and other infrastructure within a densely-developed localized drainage area.
Other information on duration and volume: .

Surface flow is: **Confined.** Characteristics: Flows are confined within a concrete v-channel.

Subsurface flow: **No**. Explain findings: Concrete lining has no water infiltration.
☐ Dye (or other) test performed: .

Tributary has (check all that apply):
- ☐ Bed and banks
- ☐ OHWM[6] (check all indicators that apply):

☐ clear, natural line impressed on the bank	☒ the presence of litter and debris
☐ changes in the character of soil	☐ destruction of terrestrial vegetation
☐ shelving	☐ the presence of wrack line
☐ vegetation matted down, bent, or absent	☐ sediment sorting
☐ leaf litter disturbed or washed away	☐ scour
☐ sediment deposition	☐ multiple observed or predicted flow events
☒ water staining	☐ abrupt change in plant community
☐ other (list):	

- ☐ Discontinuous OHWM.[7] Explain: .

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):

☐ High Tide Line indicated by:	☐ Mean High Water Mark indicated by:
☐ oil or scum line along shore objects	☐ survey to available datum;
☐ fine shell or debris deposits (foreshore)	☐ physical markings;
☐ physical markings/characteristics	☐ vegetation lines/changes in vegetation types.
☐ tidal gauges	
☐ other (list):	

(iii) Chemical Characteristics:

[6]A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.
[7]Ibid.

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).

Explain: Flow was observed during the field visits (July/August 2009 and April 2010). Flows resulting from runoff originate within a densely-developed urban environment containing residential landuses and associated infrastructure.

Identify specific pollutants, if known: Pollutants within urban environements include, but are not limited to, pathogens, fertilizers/nutrients, hydrocarbons, and metals. Common automotive contaminates include suspended solids, lead, phosphorus, polycyclic aromatic hydrocarbons, trash, and debris.

(iv) Biological Characteristics. Channel supports (check all that apply):

☐ Riparian corridor. Characteristics (type, average width): .
☐ Wetland fringe. Characteristics: .
☒ Habitat for:
☐ Federally Listed species. Explain findings: .
☐ Fish/spawn areas. Explain findings: .
☐ Other environmentally-sensitive species. Explain findings: .
☒ Aquatic/wildlife diversity. Explain findings: The RPW provides aquatic habitat for commonly-occuring birds and mammals.

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW

(i) Physical Characteristics:

(a) General Wetland Characteristics:
Properties:
Wetland size:0.0 acres
Wetland type. Explain: .
Wetland quality. Explain: .
Project wetlands cross or serve as state boundaries. Explain: .

(b) General Flow Relationship with Non-TNW:
Flow is: **Pick List**. Explain: .

Surface flow is**: Pick List**
Characteristics: .

Subsurface flow: **Pick List**. Explain findings: .
☐ Dye (or other) test performed: .

(c) Wetland Adjacency Determination with Non-TNW:
☐ Directly abutting
☐ Not directly abutting
☐ Discrete wetland hydrologic connection. Explain: .
☐ Ecological connection. Explain: .
☐ Separated by berm/barrier. Explain: .

(d) Proximity (Relationship) to TNW
Project wetlands are **Pick List** river miles from TNW.
Project waters are **Pick List** aerial (straight) miles from TNW.
Flow is from: **Pick List.**
Estimate approximate location of wetland as within the **Pick List** floodplain.

(ii) Chemical Characteristics:

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: .
Identify specific pollutants, if known: .

(iii) Biological Characteristics. Wetland supports (check all that apply):

☐ Riparian buffer. Characteristics (type, average width): .
☐ Vegetation type/percent cover. Explain: .
☐ Habitat for:
☐ Federally Listed species. Explain findings: .
☐ Fish/spawn areas. Explain findings: .
☐ Other environmentally-sensitive species. Explain findings: .
☐ Aquatic/wildlife diversity. Explain findings: .

3. Characteristics of all wetlands adjacent to the tributary (if any)

All wetland(s) being considered in the cumulative analysis: **Pick List**
Approximately ( ) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Directly abuts? (Y/N)	Size (in acres)	Directly abuts? (Y/N)	Size (in acres)

Summarize overall biological, chemical and physical functions being performed: .

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: .

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
   ☐ TNWs: linear feet width (ft), Or, acres.
   ☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**
   ☐ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: .
   ☒ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: Flows were observed during August 2009, during the middle of the dry season and is assumed to flow continuously during the wet season.

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: **974** linear feet**4** width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .

3. **Non-RPWs[8] that flow directly or indirectly into TNWs.**
☐ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: **.**

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**
☐ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: **.**

☐ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**
☐ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

6. **Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**
☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. **Impoundments of jurisdictional waters.[9]**
As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.
☐ Demonstrate that impoundment was created from "waters of the U.S.," or
☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):[10]
☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
☐ which are or could be used for industrial purposes by industries in interstate commerce.
☐ Interstate isolated waters. Explain: .
☐ Other factors. Explain: .

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[8] See Footnote # 3.
[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.
[10] Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.*

Identify water body and summarize rationale supporting determination: .

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .
☐ Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):
☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
☐ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: .
☐ Other: (explain, if not covered above): .

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):
☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:2011 Jurisdictional Determination Report for the Interstate 405 Improvement Project.
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
☐ Office concurs with data sheets/delineation report.
☐ Office does not concur with data sheets/delineation report.
☐ Data sheets prepared by the Corps: .
☐ Corps navigable waters' study: .
☐ U.S. Geological Survey Hydrologic Atlas: .
☐ USGS NHD data.
☐ USGS 8 and 12 digit HUC maps.
☒ U.S. Geological Survey map(s). Cite scale & quad name:7.5 minute Los Alamitos Quadrangle Map.
☐ USDA Natural Resources Conservation Service Soil Survey. Citation: .
☒ National wetlands inventory map(s). Cite name:U.S. Department of the Interior, U.S. Fish and Wildlife Service (USFWS). 2009. National Wetlands Inventory- Wetlands and Deepwater Habitats of the Conterminous United States. Vector digital data: CONUS_wet_poly. Division of Habitat and Resource Conservation, Washington, D.C. <URL: http://wetlandsfws.er.usgs.gov/NWI/download.html >.
☐ State/Local wetland inventory map(s): .
☒ FEMA/FIRM maps:Federal Emergency Management Agency (FEMA). 1998. Q3 Flood data 100-Year flood plain map..
☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
☒ Photographs: ☒ Aerial (Name & Date):Digital Globe, 2010.
or ☒ Other (Name & Date):2011 Jurisdictional Determination Report, Appendix B photograph log.
☐ Previous determination(s). File no. and date of response letter: .
☐ Applicable/supporting case law: .
☐ Applicable/supporting scientific literature: .
☒ Other information (please specify):Refer to the 2011 Jurisdictional Determination Report for the Interstate 405 Improvement Project for additional information.

B. ADDITIONAL COMMENTS TO SUPPORT JD: .

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD):

B. DISTRICT OFFICE, FILE NAME, AND NUMBER:

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State:CA County/parish/borough: Los Angeles City: Long Beach
Center coordinates of site (lat/long in degree decimal format): Lat. ° **Pick List**, Long. ° **Pick List**.
Universal Transverse Mercator: 398753 m E, 3739088 m N
Name of nearest waterbody: Feature 4-4, San Gabriel River, is a blueline tributary draining to the Pacific Ocean.
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Tidally-influenced portion of the San Gabriel River
Name of watershed or Hydrologic Unit Code (HUC): San Gabriel River (18070106)

- ☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
- ☒ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

- ☐ Office (Desk) Determination. Date:
- ☐ Field Determination. Date(s):

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Are no** *"navigable waters of the U.S."* within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]

- ☐ Waters subject to the ebb and flow of the tide.
- ☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. Explain: .

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Are** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):** [1]
   - ☐ TNWs, including territorial seas
   - ☐ Wetlands adjacent to TNWs
   - ☒ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
   - ☐ Non-RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
   - ☐ Impoundments of jurisdictional waters
   - ☐ Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**
   Non-wetland waters: 384 linear feet: 258 width (ft) and/or 1.3 acres.
   Wetlands: 0.93 acres.

   c. **Limits (boundaries) of jurisdiction** based on: **Established by OHWM.**
   Elevation of established OHWM (if known):approximately 10 ft above msl.

2. **Non-regulated waters/wetlands (check if applicable):**[3]
   - ☐ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional. Explain: .

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[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).
[3] Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. TNW
Identify TNW: .

Summarize rationale supporting determination: .

2. Wetland adjacent to TNW
Summarize rationale supporting conclusion that wetland is "adjacent": .

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. Characteristics of non-TNWs that flow directly or indirectly into TNW

(i) General Area Conditions:
Watershed size: 457,461 **acres**
Drainage area: approximately 457,461 **acres**
Average annual rainfall: 16 inches
Average annual snowfall: 0 inches

(ii) Physical Characteristics:
(a) Relationship with TNW:
☒ Tributary flows directly into TNW.
☐ Tributary flows through **Pick List** tributaries before entering TNW.

Project waters are **1 (or less)** river miles from TNW.
Project waters are **1 (or less)** river miles from RPW.
Project waters are **1 (or less)** aerial (straight) miles from TNW.
Project waters are **1 (or less)** aerial (straight) miles from RPW.
Project waters cross or serve as state boundaries. Explain: No state boundaries are crossed.

[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

Identify flow route to TNW[5]: Storm water flows originate north of the City of Azuza in the San Gabriel Mountains where flows are directed south for approximately 33 miles before draining into the tidally-influenced portion of San Gabriel River in the vicinity of 7th St in the City of Long Beach.
Tributary stream order, if known: 3.

(b) General Tributary Characteristics (check all that apply):
Tributary is: ☐ Natural
☐ Artificial (man-made). Explain: .
☒ Manipulated (man-altered). Explain: The tributary is a natural system that has been channelized into a rock riprap lined flood control channel.

Tributary properties with respect to top of bank (estimate):
Average width: 258 feet
Average depth: 22 feet
Average side slopes: **2:1.**

Primary tributary substrate composition (check all that apply):

☒ Silts	☒ Sands	☐ Concrete
☐ Cobbles	☐ Gravel	☒ Muck
☐ Bedrock	☒ Vegetation. Type/% cover: Wetland/20% cover of total feature; limited to banks	
☐ Other. Explain: .		

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: Stable.
Presence of run/riffle/pool complexes. Explain: None.
Tributary geometry: **Relatively straight**
Tributary gradient (approximate average slope): 1 %

(c) Flow:
Tributary provides for: **Seasonal flow**
Estimate average number of flow events in review area/year: **11-20**
Describe flow regime: Flows originate from seasonal storm runoff associated with roadways, residences, and other infrastructure within a densely-developed watershed drainage area.
Other information on duration and volume: .

Surface flow is: **Confined.** Characteristics: Flows are confined within a constructed channel.

Subsurface flow: **Unknown**. Explain findings: Possible subsurface flow along portions of the river.
☐ Dye (or other) test performed: .

Tributary has (check all that apply):
☐ Bed and banks
☐ OHWM[6] (check all indicators that apply):

☒ clear, natural line impressed on the bank	☒ the presence of litter and debris
☐ changes in the character of soil	☒ destruction of terrestrial vegetation
☒ shelving	☐ the presence of wrack line
☐ vegetation matted down, bent, or absent	☐ sediment sorting
☐ leaf litter disturbed or washed away	☐ scour
☐ sediment deposition	☐ multiple observed or predicted flow events
☒ water staining	☐ abrupt change in plant community
☐ other (list):	

☐ Discontinuous OHWM.[7] Explain: .

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):

☐ High Tide Line indicated by:	☐ Mean High Water Mark indicated by:
☐ oil or scum line along shore objects	☐ survey to available datum;
☐ fine shell or debris deposits (foreshore)	☐ physical markings;
☐ physical markings/characteristics	☐ vegetation lines/changes in vegetation types.
☐ tidal gauges	
☐ other (list):	

[5] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.
[6] A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.
[7] Ibid.

(iii) Chemical Characteristics:

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).

Explain: Flow was observed during the field visits (July/August 2009 and April 2010). Flows resulting from runoff originate within a densely-developed urban environment containing residential landuses and associated infrastructure.

Identify specific pollutants, if known: Pollutants within urban environements include, but are not limited to, pathogens, fertilizers/nutrients, hydrocarbons, and metals. Common automotive contaminates include suspended solids, lead, phosphorus, polycyclic aromatic hydrocarbons, trash, and debris.

(iv) Biological Characteristics. Channel supports (check all that apply):

☐ Riparian corridor. Characteristics (type, average width): .

☒ Wetland fringe. Characteristics: Perennial wetland along both banks.

☒ Habitat for:

☐ Federally Listed species. Explain findings: .

☒ Fish/spawn areas. Explain findings: Brackish/estuarine waters provide habitat for fish species.

☐ Other environmentally-sensitive species. Explain findings: .

☒ Aquatic/wildlife diversity. Explain findings: The RPW provides aquatic habitat for commonly-occuring birds, fish, amphibians, mammals, and invertebrates.

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW

(i) Physical Characteristics:

(a) General Wetland Characteristics:

Properties:

Wetland size:0.93 acres

Wetland type. Explain:Riverine.

Wetland quality. Explain:Wetland has approximately 50% cover of non-native invasive species including Arundo donax and Ricinis communis.

Project wetlands cross or serve as state boundaries. Explain: No state boundary is crossed by the wetland.

(b) General Flow Relationship with Non-TNW:

Flow is: **Perennial flow**. Explain: flows are present year round.

Surface flow is**: Discrete and confined**

Characteristics: .

Subsurface flow: **Pick List**. Explain findings: unknown.

☐ Dye (or other) test performed: .

(c) Wetland Adjacency Determination with Non-TNW:

☒ Directly abutting

☐ Not directly abutting

☐ Discrete wetland hydrologic connection. Explain: .

☐ Ecological connection. Explain: .

☐ Separated by berm/barrier. Explain: .

(d) Proximity (Relationship) to TNW

Project wetlands are **1 (or less)** river miles from TNW.

Project waters are **1 (or less)** aerial (straight) miles from TNW.

Flow is from: **Wetland to navigable waters.**

Estimate approximate location of wetland as within the **2-year or less** floodplain.

(ii) Chemical Characteristics:

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: Brown water color from urban runoff within the San Gabriel River.

Identify specific pollutants, if known: Pollutants may include, but are not limited to, pathogens, fertilizers/nutrients, hydrocarbons, and metals. Common automotive contaminates include suspended solids, lead, phosphorus, polycyclic aromatic hydrocarbons, trash, and debris.

(iii) Biological Characteristics. Wetland supports (check all that apply):

☒ Riparian buffer. Characteristics (type, average width):Riparian vegetation occurs along both sides of the channel.

☒ Vegetation type/percent cover. Explain:Vegetation includes both native and non-native hydrophytic species.

☒ Habitat for:

☐ Federally Listed species. Explain findings: .

☒ Fish/spawn areas. Explain findings:This portion of the river receives freshwater input and likely supports fresh and brackish water fish.

☐ Other environmentally-sensitive species. Explain findings: .

☒ Aquatic/wildlife diversity. Explain findings:The channel functions as habitat for numerous commonly-occuring aquatic and terrestrial species.

3. Characteristics of all wetlands adjacent to the tributary (if any)

All wetland(s) being considered in the cumulative analysis: **1**

Approximately (0.93) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Directly abuts? (Y/N)	Size (in acres)	Directly abuts? (Y/N)	Size (in acres)
Y	0.93 acres		

Summarize overall biological, chemical and physical functions being performed: The wetland functions as a typical freshwater riverine wetland within the lower reaches of southern Californian flood-control channels.

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: .

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
   ☐ TNWs: linear feet width (ft), Or, acres.
   ☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**
   ☒ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: Substantial flows were observed within the lower reach of the river during August 2009, during the middle of the dry season and is assumed to flow continuously during the wet season.
   ☐ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: .

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: **384** linear feet **258** width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .

3. **Non-RPWs[8] that flow directly or indirectly into TNWs.**
☐ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: **.**

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**
☒ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
☒ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: **Riparian vegetation is present along the lengths of both sides of the river where the channel contains an earthen bottom and rock riprap sides.**

☐ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**
☐ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: **0.93** acres.

6. **Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**
☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. **Impoundments of jurisdictional waters.[9]**
As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.
☐ Demonstrate that impoundment was created from "waters of the U.S.," or
☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):[10]
☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
☐ which are or could be used for industrial purposes by industries in interstate commerce.
☐ Interstate isolated waters. Explain: .

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[8] See Footnote # 3.
[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.
[10] Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.*

☐ Other factors. Explain: .

Identify water body and summarize rationale supporting determination: .

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .
☐ Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):
☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
☐ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: .
☐ Other: (explain, if not covered above): .

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):
☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:2011 Jurisdictional Determination Report for the Interstate 405 Improvement Project.
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
☐ Office concurs with data sheets/delineation report.
☐ Office does not concur with data sheets/delineation report.
☐ Data sheets prepared by the Corps: .
☐ Corps navigable waters' study: .
☐ U.S. Geological Survey Hydrologic Atlas: .
☐ USGS NHD data.
☐ USGS 8 and 12 digit HUC maps.
☒ U.S. Geological Survey map(s). Cite scale & quad name:7.5 minute Los Alamitos Quadrangle Map.
☐ USDA Natural Resources Conservation Service Soil Survey. Citation: .
☒ National wetlands inventory map(s). Cite name:U.S. Department of the Interior, U.S. Fish and Wildlife Service (USFWS). 2009. National Wetlands Inventory- Wetlands and Deepwater Habitats of the Conterminous United States. Vector digital data: CONUS_wet_poly. Division of Habitat and Resource Conservation, Washington, D.C. <URL: http://wetlandsfws.er.usgs.gov/NWI/download.html >.
☐ State/Local wetland inventory map(s): .
☒ FEMA/FIRM maps:Federal Emergency Management Agency (FEMA). 1998. Q3 Flood data 100-Year flood plain map..
☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
☒ Photographs: ☒ Aerial (Name & Date):Digital Globe, 2010.
or ☒ Other (Name & Date):2011 Jurisdictional Determination Report, Appendix B photograph log.
☐ Previous determination(s). File no. and date of response letter: .
☐ Applicable/supporting case law: .
☐ Applicable/supporting scientific literature: .

☒ Other information (please specify):Refer to the 2011 Jurisdictional Determination Report for the Interstate 405 Improvement Project for additional information.

B. ADDITIONAL COMMENTS TO SUPPORT JD: .

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD):

B. DISTRICT OFFICE, FILE NAME, AND NUMBER:

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State:CA County/parish/borough: LA City: Long Beach
Center coordinates of site (lat/long in degree decimal format): Lat. ° **Pick List**, Long. ° **Pick List**.
Universal Transverse Mercator: 397847 m E, 3739819 m N
Name of nearest waterbody: Feature 5-1, Los Cerritos Channel, is a blueline drainage tributary to Los Cerritos Channel.
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Tidally-influenced portion of Los Cerritos Channel.
Name of watershed or Hydrologic Unit Code (HUC): San Gabriel River (18070106)

- ☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
- ☒ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

- ☐ Office (Desk) Determination. Date:
- ☐ Field Determination. Date(s):

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Are no** *"navigable waters of the U.S."* within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]

- ☐ Waters subject to the ebb and flow of the tide.
- ☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. Explain: .

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Are** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):** [1]
   - ☐ TNWs, including territorial seas
   - ☐ Wetlands adjacent to TNWs
   - ☒ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
   - ☐ Non-RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
   - ☐ Impoundments of jurisdictional waters
   - ☐ Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**
   Non-wetland waters: 237 linear feet: 94 width (ft) and/or 0.5 acres.
   Wetlands: 0.0 acres.

   c. **Limits (boundaries) of jurisdiction** based on: **Established by OHWM.**
   Elevation of established OHWM (if known):approximately 10 ft above msl.

2. **Non-regulated waters/wetlands (check if applicable):**[3]
   - ☐ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional. Explain: .

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[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).
[3] Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. TNW
Identify TNW: .

Summarize rationale supporting determination: .

2. Wetland adjacent to TNW
Summarize rationale supporting conclusion that wetland is "adjacent": .

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. Characteristics of non-TNWs that flow directly or indirectly into TNW

(i) General Area Conditions:
Watershed size: 457,461 **acres**
Drainage area: approximately 23,000 **acres**
Average annual rainfall: 16 inches
Average annual snowfall: 0 inches

(ii) Physical Characteristics:
(a) Relationship with TNW:
☒ Tributary flows directly into TNW.
☐ Tributary flows through **Pick List** tributaries before entering TNW.

Project waters are **1-2** river miles from TNW.
Project waters are **1 (or less)** river miles from RPW.
Project waters are **1-2** aerial (straight) miles from TNW.
Project waters are **1 (or less)** aerial (straight) miles from RPW.
Project waters cross or serve as state boundaries. Explain: No state boundaries are crossed.

[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

Identify flow route to TNW[5]: Storm water flows within Los Cerritos Channel originate approximately 7.4 miles northwest within the City of Lakewood. Flows are directed through a concrete flood-control channel system for approximately 7.4 miles before reaching the tidally-influenced portion of Los Cerritos Channel, which is a TNW.
Tributary stream order, if known: 2.

(b) General Tributary Characteristics (check all that apply):

Tributary is:
- ☐ Natural
- ☒ Artificial (man-made). Explain: The tributary is a concrete-lined flood control channel.
- ☐ Manipulated (man-altered). Explain: .

Tributary properties with respect to top of bank (estimate):
Average width: 94 feet
Average depth: 9 feet
Average side slopes: **2:1.**

Primary tributary substrate composition (check all that apply):

☐ Silts	☐ Sands	☒ Concrete
☐ Cobbles	☐ Gravel	☐ Muck
☐ Bedrock	☐ Vegetation. Type/% cover:	
☐ Other. Explain: .		

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: Stable.
Presence of run/riffle/pool complexes. Explain: None.
Tributary geometry: **Relatively straight**
Tributary gradient (approximate average slope): 1 %

(c) Flow:

Tributary provides for: **Seasonal flow**
Estimate average number of flow events in review area/year: **20 (or greater)**
Describe flow regime: Flows originate from seasonal storm runoff and excess irrigation runoff associated with roadways and other infrastructure within a densely-developed environment.
Other information on duration and volume: Flows are present within the low-flow channel of Los Cerritos Channel for most of the year. During storm events, considerable flows are present.

Surface flow is: **Confined.** Characteristics: Flows are confined within a concrete v-channel.

Subsurface flow: **No**. Explain findings: Concrete lining has no water infiltration.
- ☐ Dye (or other) test performed: .

Tributary has (check all that apply):
- ☐ Bed and banks
- ☐ OHWM[6] (check all indicators that apply):

☐ clear, natural line impressed on the bank	☐ the presence of litter and debris
☐ changes in the character of soil	☐ destruction of terrestrial vegetation
☐ shelving	☐ the presence of wrack line
☐ vegetation matted down, bent, or absent	☐ sediment sorting
☐ leaf litter disturbed or washed away	☐ scour
☐ sediment deposition	☐ multiple observed or predicted flow events
☒ water staining	☐ abrupt change in plant community
☐ other (list):	

- ☐ Discontinuous OHWM.[7] Explain: .

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):

☒ High Tide Line indicated by:	☒ Mean High Water Mark indicated by:
☐ oil or scum line along shore objects	☐ survey to available datum;
☐ fine shell or debris deposits (foreshore)	☐ physical markings;
☐ physical markings/characteristics	☐ vegetation lines/changes in vegetation types.
☐ tidal gauges	
☐ other (list):	

[5] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.
[6] A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.
[7] Ibid.

(iii) Chemical Characteristics:

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).

Explain: Flows resulting from runoff originate within a densely-developed urban environment containing major roadways and residential/commercial developments.

Identify specific pollutants, if known: Pollutants within urban environements include, but are not limited to, pathogens, fertilizers/nutrients, hydrocarbons, and metals. Common automotive contaminates include suspended solids, lead, phosphorus, polycyclic aromatic hydrocarbons, trash, and debris.

(iv) Biological Characteristics. Channel supports (check all that apply):

☐ Riparian corridor. Characteristics (type, average width): .
☐ Wetland fringe. Characteristics: .
☐ Habitat for:
☐ Federally Listed species. Explain findings: .
☐ Fish/spawn areas. Explain findings: .
☐ Other environmentally-sensitive species. Explain findings: .
☒ Aquatic/wildlife diversity. Explain findings: Flows within Los Cerritos Channel, a RPW, provide aquatic habitat for commonly-occurring birds, mammals, and amphibians.

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW

(i) Physical Characteristics:

(a) General Wetland Characteristics:
Properties:
Wetland size:0.0 acres
Wetland type. Explain: .
Wetland quality. Explain: .
Project wetlands cross or serve as state boundaries. Explain: .

(b) General Flow Relationship with Non-TNW:
Flow is: **Pick List**. Explain: .

Surface flow is**: Pick List**
Characteristics: .

Subsurface flow: **Pick List**. Explain findings: .
☐ Dye (or other) test performed: .

(c) Wetland Adjacency Determination with Non-TNW:
☐ Directly abutting
☐ Not directly abutting
☐ Discrete wetland hydrologic connection. Explain: .
☐ Ecological connection. Explain: .
☐ Separated by berm/barrier. Explain: .

(d) Proximity (Relationship) to TNW
Project wetlands are **Pick List** river miles from TNW.
Project waters are **Pick List** aerial (straight) miles from TNW.
Flow is from: **Pick List.**
Estimate approximate location of wetland as within the **Pick List** floodplain.

(ii) Chemical Characteristics:

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: .
Identify specific pollutants, if known: .

(iii) Biological Characteristics. Wetland supports (check all that apply):

☐ Riparian buffer. Characteristics (type, average width): .
☐ Vegetation type/percent cover. Explain: .
☐ Habitat for:
☐ Federally Listed species. Explain findings: .
☐ Fish/spawn areas. Explain findings: .
☐ Other environmentally-sensitive species. Explain findings: .
☐ Aquatic/wildlife diversity. Explain findings: .

3. Characteristics of all wetlands adjacent to the tributary (if any)

All wetland(s) being considered in the cumulative analysis: **Pick List**
Approximately ( ) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Directly abuts? (Y/N)	Size (in acres)	Directly abuts? (Y/N)	Size (in acres)

Summarize overall biological, chemical and physical functions being performed: .

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: .

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
   ☐ TNWs: linear feet width (ft), Or, acres.
   ☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**
   ☐ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: .
   ☒ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: Flows were observed during August 2009, during the middle of the dry season and is assumed to flow continuously during the wet season.

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: **237** linear feet **94** width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .

3. Non-RPWs[8] that flow directly or indirectly into TNWs.
☐ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: **.**

4. Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.
☐ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: **.**

☐ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

5. Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.
☐ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

6. Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.
☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. Impoundments of jurisdictional waters.[9]
As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.
☐ Demonstrate that impoundment was created from "waters of the U.S.," or
☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):[10]
☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
☐ which are or could be used for industrial purposes by industries in interstate commerce.
☐ Interstate isolated waters. Explain: .
☐ Other factors. Explain: .

---

[8] See Footnote # 3.
[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.
[10] Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.*

Identify water body and summarize rationale supporting determination: .

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .
☐ Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):
☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
☐ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: .
☐ Other: (explain, if not covered above): .

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):
☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:2011 Jurisdictional Determination Report for the Interstate 405 Improvement Project.
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
☐ Office concurs with data sheets/delineation report.
☐ Office does not concur with data sheets/delineation report.
☐ Data sheets prepared by the Corps: .
☐ Corps navigable waters' study: .
☐ U.S. Geological Survey Hydrologic Atlas: .
☐ USGS NHD data.
☐ USGS 8 and 12 digit HUC maps.
☒ U.S. Geological Survey map(s). Cite scale & quad name:7.5 minute Los Alamitos Quadrangle Map.
☐ USDA Natural Resources Conservation Service Soil Survey. Citation: .
☒ National wetlands inventory map(s). Cite name:U.S. Department of the Interior, U.S. Fish and Wildlife Service (USFWS). 2009. National Wetlands Inventory- Wetlands and Deepwater Habitats of the Conterminous United States. Vector digital data: CONUS_wet_poly. Division of Habitat and Resource Conservation, Washington, D.C. <URL: http://wetlandsfws.er.usgs.gov/NWI/download.html >.
☐ State/Local wetland inventory map(s): .
☒ FEMA/FIRM maps:Federal Emergency Management Agency (FEMA). 1998. Q3 Flood data 100-Year flood plain map..
☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
☒ Photographs: ☒ Aerial (Name & Date):Digital Globe, 2010.
or ☒ Other (Name & Date):2011 Jurisdictional Determination Report, Appendix B photograph log.
☐ Previous determination(s). File no. and date of response letter: .
☐ Applicable/supporting case law: .
☐ Applicable/supporting scientific literature: .
☒ Other information (please specify):Refer to the 2011 Jurisdictional Determination Report for the Interstate 405 Improvement Project for additional information.

B. ADDITIONAL COMMENTS TO SUPPORT JD: .

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD):

B. DISTRICT OFFICE, FILE NAME, AND NUMBER:

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State:CA County/parish/borough: Orange City: Rossmoor
Center coordinates of site (lat/long in degree decimal format): Lat. ° **Pick List**, Long. ° **Pick List**.
Universal Transverse Mercator: 399070 m E, 3738007 m N
Name of nearest waterbody: Feature 7-2, Copa De Oro Channel, is a blueline tributary draining to Los Alamitos Channel and the San Gabriel River.

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Tidally-influenced portion of the San Gabriel River.
Name of watershed or Hydrologic Unit Code (HUC): San Gabriel River (18070106)

- ☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
- ☒ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

- ☐ Office (Desk) Determination. Date:
- ☐ Field Determination. Date(s):

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Are no** "*navigable waters of the U.S.*" within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]

- ☐ Waters subject to the ebb and flow of the tide.
- ☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. Explain: .

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Are** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):** [1]
   - ☐ TNWs, including territorial seas
   - ☐ Wetlands adjacent to TNWs
   - ☒ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
   - ☐ Non-RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
   - ☐ Impoundments of jurisdictional waters
   - ☐ Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**
   Non-wetland waters: 2233 linear feet: 25 width (ft) and/or 1.02 acres.
   Wetlands: 0.0 acres.

   c. **Limits (boundaries) of jurisdiction** based on: **Established by OHWM.**
   Elevation of established OHWM (if known):approximately 10 ft above msl.

2. **Non-regulated waters/wetlands (check if applicable):**[3]
   - ☐ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional. Explain: .

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[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).
[3] Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. TNW
Identify TNW: .

Summarize rationale supporting determination: .

2. Wetland adjacent to TNW
Summarize rationale supporting conclusion that wetland is "adjacent": .

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. Characteristics of non-TNWs that flow directly or indirectly into TNW

(i) General Area Conditions:
Watershed size: 457,461 **acres**
Drainage area: approximately 185.7 **acres**
Average annual rainfall: 16 inches
Average annual snowfall: 0 inches

(ii) Physical Characteristics:
(a) Relationship with TNW:
☐ Tributary flows directly into TNW.
☒ Tributary flows through **3** tributaries before entering TNW.

Project waters are **1-2** river miles from TNW.
Project waters are **1 (or less)** river miles from RPW.
Project waters are **1 (or less)** aerial (straight) miles from TNW.
Project waters are **1 (or less)** aerial (straight) miles from RPW.
Project waters cross or serve as state boundaries. Explain: No state boundaries are crossed.

Identify flow route to TNW[5]: Storm water and residential landscape flows originate in the vicinity of Copa De Oro Road in the City of Rossmoor where flows are directed southwest for approximately 2233 ft before draining into Los Alamitos

[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.
[5] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

Channel. Flows then drain south within Los Alamitos Channel for 8420 ft before entering a pump station that discharges into the tidally-influenced portion of San Gabriel River south of Westminster Blvd.
Tributary stream order, if known: 1.

(b) General Tributary Characteristics (check all that apply):
Tributary is: ☐ Natural
☒ Artificial (man-made). Explain: The tributary is a concrete-lined flood control channel.
☐ Manipulated (man-altered). Explain: .

Tributary properties with respect to top of bank (estimate):
Average width: 12 feet
Average depth: 3 feet
Average side slopes: **2:1.**

Primary tributary substrate composition (check all that apply):
☒ Silts ☒ Sands ☒ Concrete
☐ Cobbles ☐ Gravel ☐ Muck
☐ Bedrock ☐ Vegetation. Type/% cover: Seasonal hydrophytic vegetation may be present during low rainfall years; however, none was present during field visits.
☐ Other. Explain: .

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: Stable.
Presence of run/riffle/pool complexes. Explain: None.
Tributary geometry: **Relatively straight**
Tributary gradient (approximate average slope): 1 %

(c) Flow:
Tributary provides for: **Seasonal flow**
Estimate average number of flow events in review area/year: **11-20**
Describe flow regime: Flows originate from seasonal storm runoff and excess irrigation runoff associated with roadways, residences, and other infrastructure within a densely-developed localized drainage area.
Other information on duration and volume: .

Surface flow is: **Confined.** Characteristics: Flows are confined within a concrete v-channel.

Subsurface flow: **No**. Explain findings: Concrete lining has no water infiltration.
☐ Dye (or other) test performed: .

Tributary has (check all that apply):
☐ Bed and banks
☐ OHWM[6] (check all indicators that apply):
☒ clear, natural line impressed on the bank
☐ changes in the character of soil
☒ shelving
☐ vegetation matted down, bent, or absent
☐ leaf litter disturbed or washed away
☒ sediment deposition
☒ water staining
☐ other (list):
☒ the presence of litter and debris
☐ destruction of terrestrial vegetation
☐ the presence of wrack line
☐ sediment sorting
☐ scour
☐ multiple observed or predicted flow events
☐ abrupt change in plant community
☐ Discontinuous OHWM.[7] Explain: .

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):
☒ High Tide Line indicated by:
☐ oil or scum line along shore objects
☐ fine shell or debris deposits (foreshore)
☐ physical markings/characteristics
☐ tidal gauges
☐ other (list):
☒ Mean High Water Mark indicated by:
☐ survey to available datum;
☐ physical markings;
☐ vegetation lines/changes in vegetation types.

(iii) Chemical Characteristics:

[6]A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.
[7]Ibid.

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).

Explain: Flow was observed during the field visits (July/August 2009 and April 2010). Flows resulting from runoff originate within a densely-developed urban environment containing residential landuses and associated infrastructure.

Identify specific pollutants, if known: Pollutants within urban environements include, but are not limited to, pathogens, fertilizers/nutrients, hydrocarbons, and metals. Common automotive contaminates include suspended solids, lead, phosphorus, polycyclic aromatic hydrocarbons, trash, and debris.

(iv) Biological Characteristics. Channel supports (check all that apply):

☐ Riparian corridor. Characteristics (type, average width): .
☐ Wetland fringe. Characteristics: .
☒ Habitat for:
☐ Federally Listed species. Explain findings: .
☐ Fish/spawn areas. Explain findings: .
☐ Other environmentally-sensitive species. Explain findings: .
☒ Aquatic/wildlife diversity. Explain findings: The RPW provides aquatic habitat for commonly-occuring birds, mammals, amphibians, and invertebrates.

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW

(i) Physical Characteristics:

(a) General Wetland Characteristics:
Properties:
Wetland size:0.0 acres
Wetland type. Explain: .
Wetland quality. Explain: .
Project wetlands cross or serve as state boundaries. Explain: .

(b) General Flow Relationship with Non-TNW:
Flow is: **Pick List**. Explain: .

Surface flow is**: Pick List**
Characteristics: .

Subsurface flow: **Pick List**. Explain findings: .
☐ Dye (or other) test performed: .

(c) Wetland Adjacency Determination with Non-TNW:
☐ Directly abutting
☐ Not directly abutting
☐ Discrete wetland hydrologic connection. Explain: .
☐ Ecological connection. Explain: .
☐ Separated by berm/barrier. Explain: .

(d) Proximity (Relationship) to TNW
Project wetlands are **Pick List** river miles from TNW.
Project waters are **Pick List** aerial (straight) miles from TNW.
Flow is from: **Pick List.**
Estimate approximate location of wetland as within the **Pick List** floodplain.

(ii) Chemical Characteristics:

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: .
Identify specific pollutants, if known: .

(iii) Biological Characteristics. Wetland supports (check all that apply):

☐ Riparian buffer. Characteristics (type, average width): .
☐ Vegetation type/percent cover. Explain: .
☐ Habitat for:
☐ Federally Listed species. Explain findings: .
☐ Fish/spawn areas. Explain findings: .
☐ Other environmentally-sensitive species. Explain findings: .
☐ Aquatic/wildlife diversity. Explain findings: .

3. Characteristics of all wetlands adjacent to the tributary (if any)

All wetland(s) being considered in the cumulative analysis: **Pick List**
Approximately ( ) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Directly abuts? (Y/N)	Size (in acres)	Directly abuts? (Y/N)	Size (in acres)

Summarize overall biological, chemical and physical functions being performed: .

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: .

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
   ☐ TNWs: linear feet width (ft), Or, acres.
   ☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**
   ☐ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: .
   ☒ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: Flows were observed during August 2009, during the middle of the dry season and is assumed to flow continuously during the wet season.

Provide estimates for jurisdictional waters in the review area (check all that apply):
☒ Tributary waters: **2233** linear feet **25** width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .

3. **Non-RPWs[8] that flow directly or indirectly into TNWs.**
☐ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: **.**

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**
☐ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: **.**

☐ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**
☐ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

6. **Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**
☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. **Impoundments of jurisdictional waters.[9]**
As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.
☐ Demonstrate that impoundment was created from "waters of the U.S.," or
☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):[10]
☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
☐ which are or could be used for industrial purposes by industries in interstate commerce.
☐ Interstate isolated waters. Explain: .
☐ Other factors. Explain: .

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[8] See Footnote # 3.
[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.
[10] Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.*

Identify water body and summarize rationale supporting determination: .

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .
☐ Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):
☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
☐ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: .
☐ Other: (explain, if not covered above): .

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):
☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:2011 Jurisdictional Determination Report for the Interstate 405 Improvement Project.
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
☐ Office concurs with data sheets/delineation report.
☐ Office does not concur with data sheets/delineation report.
☐ Data sheets prepared by the Corps: .
☐ Corps navigable waters' study: .
☐ U.S. Geological Survey Hydrologic Atlas: .
☐ USGS NHD data.
☐ USGS 8 and 12 digit HUC maps.
☒ U.S. Geological Survey map(s). Cite scale & quad name:7.5 minute Los Alamitos Quadrangle Map.
☐ USDA Natural Resources Conservation Service Soil Survey. Citation: .
☒ National wetlands inventory map(s). Cite name:U.S. Department of the Interior, U.S. Fish and Wildlife Service (USFWS). 2009. National Wetlands Inventory- Wetlands and Deepwater Habitats of the Conterminous United States. Vector digital data: CONUS_wet_poly. Division of Habitat and Resource Conservation, Washington, D.C. <URL: http://wetlandsfws.er.usgs.gov/NWI/download.html >.
☐ State/Local wetland inventory map(s): .
☒ FEMA/FIRM maps:Federal Emergency Management Agency (FEMA). 1998. Q3 Flood data 100-Year flood plain map..
☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
☒ Photographs: ☒ Aerial (Name & Date):Digital Globe, 2010.
or ☒ Other (Name & Date):2011 Jurisdictional Determination Report, Appendix B photograph log.
☐ Previous determination(s). File no. and date of response letter: .
☐ Applicable/supporting case law: .
☐ Applicable/supporting scientific literature: .
☒ Other information (please specify):Refer to the 2011 Jurisdictional Determination Report for the Interstate 405 Improvement Project for additional information.

B. ADDITIONAL COMMENTS TO SUPPORT JD: .

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD):

B. DISTRICT OFFICE, FILE NAME, AND NUMBER:

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State:CA County/parish/borough: Orange City: Seal Beach
Center coordinates of site (lat/long in degree decimal format): Lat. ° **Pick List**, Long. ° **Pick List**.
Universal Transverse Mercator: 401808 m E, 3737603 m N
Name of nearest waterbody: Feature 8-2 is an unnamed flood-control drainage tributary to Los Alamitos Channel.
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Tidally-influenced portion of San Gabriel River.
Name of watershed or Hydrologic Unit Code (HUC): San Gabriel River (18070106)

- ☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
- ☒ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

- ☐ Office (Desk) Determination. Date:
- ☐ Field Determination. Date(s):

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Are no** *"navigable waters of the U.S."* within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]

- ☐ Waters subject to the ebb and flow of the tide.
- ☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. Explain: .

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Are** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):** [1]
   - ☐ TNWs, including territorial seas
   - ☐ Wetlands adjacent to TNWs
   - ☐ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
   - ☒ Non-RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
   - ☐ Impoundments of jurisdictional waters
   - ☐ Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**
   Non-wetland waters: 9306 linear feet: 2 width (ft) and/or 0.43 acres.
   Wetlands: 0.0 acres.

   c. **Limits (boundaries) of jurisdiction** based on: **Established by OHWM.**
   Elevation of established OHWM (if known):approximately 16 ft above msl.

2. **Non-regulated waters/wetlands (check if applicable):**[3]
   - ☐ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional. Explain: .

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[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).
[3] Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. TNW
Identify TNW: .

Summarize rationale supporting determination: .

2. Wetland adjacent to TNW
Summarize rationale supporting conclusion that wetland is "adjacent": .

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. Characteristics of non-TNWs that flow directly or indirectly into TNW

(i) General Area Conditions:
Watershed size: 457,461 **acres**
Drainage area: approximately 34.4 **acres**
Average annual rainfall: 16 inches
Average annual snowfall: 0 inches

(ii) Physical Characteristics:
(a) Relationship with TNW:
☐ Tributary flows directly into TNW.
☒ Tributary flows through **2** tributaries before entering TNW.

Project waters are **2-5** river miles from TNW.
Project waters are **2-5** river miles from RPW.
Project waters are **1-2** aerial (straight) miles from TNW.
Project waters are **1-2** aerial (straight) miles from RPW.
Project waters cross or serve as state boundaries. Explain: No state boundary is crossed.

Identify flow route to TNW[5]: Flows from storm water runoff on roadways originate south of the southbound I-405 at the eastbound onramp to SR-22 and are directed west along southbound I-405 for 8600 ft before draining southwest along

[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.
[5] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

the Seal Beack Blvd onramp to southbound I-405 where flows drain for 1483 ft before passing through a culvert under Seal Bech Blvd. Flows are then directed underground along the west side of Seal beach Blvd for 1320 ft before draining into Los Alamitos Channel. Flows then drain west for 5492 ft before reaching the main channel of Los Alamitos Channel. Flows then drain for 2742 ft before reaching a pump station that drains to tidally-influenced portion of the San Gabriel River (a TNW).
Tributary stream order, if known: 1.

(b) General Tributary Characteristics (check all that apply):
Tributary is: ☐ Natural
☒ Artificial (man-made). Explain: The tributary is a concrete-lined flood control channel.
☐ Manipulated (man-altered). Explain: .

Tributary properties with respect to top of bank (estimate):
Average width: 7 feet
Average depth: 1 feet
Average side slopes: **2:1.**

Primary tributary substrate composition (check all that apply):
☐ Silts ☐ Sands ☒ Concrete
☐ Cobbles ☐ Gravel ☐ Muck
☐ Bedrock ☐ Vegetation. Type/% cover:
☐ Other. Explain: .

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: Stable.
Presence of run/riffle/pool complexes. Explain: None.
Tributary geometry: **Relatively straight**
Tributary gradient (approximate average slope): 1 %

(c) Flow:
Tributary provides for: **Ephemeral flow**
Estimate average number of flow events in review area/year: **11-20**
Describe flow regime: Flows originate from seasonal storm runoff and excess irrigation runoff associated with roadways.
Other information on duration and volume: .

Surface flow is: **Confined.** Characteristics: Flows are confined within a concrete v-channel.

Subsurface flow: **No**. Explain findings: Concrete lining has no water infiltration.
☐ Dye (or other) test performed: .

Tributary has (check all that apply):
☐ Bed and banks
☐ OHWM[6] (check all indicators that apply):
☐ clear, natural line impressed on the bank
☐ changes in the character of soil
☐ shelving
☐ vegetation matted down, bent, or absent
☐ leaf litter disturbed or washed away
☐ sediment deposition
☒ water staining
☐ other (list):
☐ the presence of litter and debris
☐ destruction of terrestrial vegetation
☐ the presence of wrack line
☐ sediment sorting
☐ scour
☐ multiple observed or predicted flow events
☐ abrupt change in plant community
☐ Discontinuous OHWM.[7] Explain: .

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):
☐ High Tide Line indicated by:
☐ oil or scum line along shore objects
☐ fine shell or debris deposits (foreshore)
☐ physical markings/characteristics
☐ tidal gauges
☐ other (list):
☐ Mean High Water Mark indicated by:
☐ survey to available datum;
☐ physical markings;
☐ vegetation lines/changes in vegetation types.

[6]A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.
[7]Ibid.

(iii) Chemical Characteristics:

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).

Explain: No flow was observed during the field visits (July/August 2009 and April 2010). Flows resulting from runoff originate within a densely-developed urban environment containing major roadways.

Identify specific pollutants, if known: Pollutants within urban environements include, but are not limited to, pathogens, fertilizers/nutrients, hydrocarbons, and metals. Common automotive contaminates include suspended solids, lead, phosphorus, polycyclic aromatic hydrocarbons, trash, and debris.

(iv) Biological Characteristics. Channel supports (check all that apply):

☐ Riparian corridor. Characteristics (type, average width): .
☐ Wetland fringe. Characteristics: .
☐ Habitat for:
  ☐ Federally Listed species. Explain findings: .
  ☐ Fish/spawn areas. Explain findings: .
  ☐ Other environmentally-sensitive species. Explain findings: .
  ☐ Aquatic/wildlife diversity. Explain findings: .

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW

(i) Physical Characteristics:

(a) General Wetland Characteristics:
Properties:
  Wetland size:0.0 acres
  Wetland type. Explain: .
  Wetland quality. Explain: .
Project wetlands cross or serve as state boundaries. Explain: .

(b) General Flow Relationship with Non-TNW:
Flow is: **Pick List**. Explain: .

Surface flow is**: Pick List**
  Characteristics: .

Subsurface flow: **Pick List**. Explain findings: .
  ☐ Dye (or other) test performed: .

(c) Wetland Adjacency Determination with Non-TNW:
☐ Directly abutting
☐ Not directly abutting
  ☐ Discrete wetland hydrologic connection. Explain: .
  ☐ Ecological connection. Explain: .
  ☐ Separated by berm/barrier. Explain: .

(d) Proximity (Relationship) to TNW
Project wetlands are **Pick List** river miles from TNW.
Project waters are **Pick List** aerial (straight) miles from TNW.
Flow is from: **Pick List.**
Estimate approximate location of wetland as within the **Pick List** floodplain.

(ii) Chemical Characteristics:

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: .
Identify specific pollutants, if known: .

(iii) Biological Characteristics. Wetland supports (check all that apply):

☐ Riparian buffer. Characteristics (type, average width): .
☐ Vegetation type/percent cover. Explain: .
☐ Habitat for:
  ☐ Federally Listed species. Explain findings: .
  ☐ Fish/spawn areas. Explain findings: .
  ☐ Other environmentally-sensitive species. Explain findings: .
  ☐ Aquatic/wildlife diversity. Explain findings: .

3. Characteristics of all wetlands adjacent to the tributary (if any)

All wetland(s) being considered in the cumulative analysis: **Pick List**
Approximately ( ) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Directly abuts? (Y/N)	Size (in acres)	Directly abuts? (Y/N)	Size (in acres)

Summarize overall biological, chemical and physical functions being performed: .

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D:The non-RPW Feature 8-2 is a concrete-lined flood-control channel with a relavent reach of 9306 ft. It conveys roadway stromwater runoff from an approximate 34.4-acre localized drainage area watershed to the nearest TNW, the tidally-influenced portion of the San Gabriel River, located approximately 3.7 stream miles to the southwest. The San Gabriel River estuary and Reach 1, the receiving waterbodies, are listed as 303(d) impared water bodies for abnormal fish histology, arsenic, algae, ammonia, high coliform count, and toxicity. This feature conveys urban runoff pollutants within flows originating within a densly-developed environment. Because the tributary is concrete-lined, no filtration occurs and the chemical pollutants are rapidly transported to the impaired portion of the San Gabriel River.

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
   ☐ TNWs: linear feet width (ft), Or, acres.
   ☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**

☐ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: .

☐ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: .

Provide estimates for jurisdictional waters in the review area (check all that apply):

☐ Tributary waters: linear feet width (ft).

☐ Other non-wetland waters: acres.

Identify type(s) of waters: .

3. Non-RPWs[8] that flow directly or indirectly into TNWs.

☒ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):

☒ Tributary waters: **9306** linear feet **2** width (ft).

☐ Other non-wetland waters: acres.

Identify type(s) of waters: **.**

4. Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.

☐ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.

☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: **.**

☐ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

5. Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.

☐ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

6. Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.

☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. Impoundments of jurisdictional waters.[9]

As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.

☐ Demonstrate that impoundment was created from "waters of the U.S.," or

☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or

☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):[10]

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[8] See Footnote # 3.

[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.

[10] **Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.***

☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
☐ which are or could be used for industrial purposes by industries in interstate commerce.
☐ Interstate isolated waters. Explain: .
☐ Other factors. Explain: .

Identify water body and summarize rationale supporting determination: .

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: **.**
☐ Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):
☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
☐ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: **.**
☐ Other: (explain, if not covered above): **.**

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):
☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:2011 Jurisdictional Determination Report for the Interstate 405 Improvement Project.
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
☐ Office concurs with data sheets/delineation report.
☐ Office does not concur with data sheets/delineation report.
☐ Data sheets prepared by the Corps: .
☐ Corps navigable waters' study: .
☐ U.S. Geological Survey Hydrologic Atlas: .
☐ USGS NHD data.
☐ USGS 8 and 12 digit HUC maps.
☒ U.S. Geological Survey map(s). Cite scale & quad name:7.5 minute Los Alamitos Quadrangle Map.
☐ USDA Natural Resources Conservation Service Soil Survey. Citation: .
☒ National wetlands inventory map(s). Cite name:U.S. Department of the Interior, U.S. Fish and Wildlife Service (USFWS). 2009. National Wetlands Inventory- Wetlands and Deepwater Habitats of the Conterminous United States. Vector digital data: CONUS_wet_poly. Division of Habitat and Resource Conservation, Washington, D.C. <URL: http://wetlandsfws.er.usgs.gov/NWI/download.html >.
☐ State/Local wetland inventory map(s): .
☒ FEMA/FIRM maps:Federal Emergency Management Agency (FEMA). 1998. Q3 Flood data 100-Year flood plain map..

☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
☒ Photographs: ☒ Aerial (Name & Date):Digital Globe, 2010.
or ☒ Other (Name & Date):2011 Jurisdictional Determination Report, Appendix B photograph log.
☐ Previous determination(s). File no. and date of response letter: .
☐ Applicable/supporting case law: .
☐ Applicable/supporting scientific literature: .
☒ Other information (please specify):Refer to the 2011 Jurisdictional Determination Report for the Interstate 405 Improvement Project for additional information.

B. ADDITIONAL COMMENTS TO SUPPORT JD: .

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD):

B. DISTRICT OFFICE, FILE NAME, AND NUMBER:

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State:CA County/parish/borough: Orange City: Seal Beach
Center coordinates of site (lat/long in degree decimal format): Lat. ° **Pick List**, Long. ° **Pick List**.
Universal Transverse Mercator: 403428 m E, 3737568 m N
Name of nearest waterbody: Feature 10-1 is a blueline tributary draining to Huntington Harbor and the Pacific Ocean.
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Tidally-influenced portion of Bolsa Chica Channel.
Name of watershed or Hydrologic Unit Code (HUC): Seal Beach (18070201)

- ☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
- ☒ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

- ☐ Office (Desk) Determination. Date:
- ☐ Field Determination. Date(s):

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Are no** *"navigable waters of the U.S."* within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]

- ☐ Waters subject to the ebb and flow of the tide.
- ☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. Explain: .

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Are** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):** [1]
   - ☐ TNWs, including territorial seas
   - ☐ Wetlands adjacent to TNWs
   - ☒ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
   - ☐ Non-RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
   - ☐ Impoundments of jurisdictional waters
   - ☐ Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**
   Non-wetland waters: 583 linear feet: 38 width (ft) and/or 0.50 acres.
   Wetlands: 0.0 acres.

   c. **Limits (boundaries) of jurisdiction** based on: **Established by OHWM.**
   Elevation of established OHWM (if known):approximately 10 ft above msl.

2. **Non-regulated waters/wetlands (check if applicable):**[3]
   - ☐ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional. Explain: .

---

[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).
[3] Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. TNW
Identify TNW: .

Summarize rationale supporting determination: .

2. Wetland adjacent to TNW
Summarize rationale supporting conclusion that wetland is "adjacent": .

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. Characteristics of non-TNWs that flow directly or indirectly into TNW

(i) General Area Conditions:
Watershed size: 57,354 **acres**
Drainage area: approximately 3238.7 **acres**
Average annual rainfall: 16 inches
Average annual snowfall: 0 inches

(ii) Physical Characteristics:
(a) Relationship with TNW:
☒ Tributary flows directly into TNW.
☐ Tributary flows through **Pick List** tributaries before entering TNW.

Project waters are **1-2** river miles from TNW.
Project waters are **1 (or less)** river miles from RPW.
Project waters are **1-2** aerial (straight) miles from TNW.
Project waters are **1 (or less)** aerial (straight) miles from RPW.
Project waters cross or serve as state boundaries. Explain: No state boundaries are crossed.

[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

Identify flow route to TNW[5]: Storm water and residential landscape flows originate approximately south of Katella Ave. and west of Valley View St in the City of Cypress and drain southwest for 4.9 miles before reaching the tidally-influenced portion of Bolsa Chica Channel, a TNW, estimated to be at McFadden Ave.
Tributary stream order, if known: 2.

(b) General Tributary Characteristics (check all that apply):

Tributary is:
- ☐ Natural
- ☒ Artificial (man-made). Explain: The tributary is a concrete-lined or earthen/rock riprap flood control channel.
- ☐ Manipulated (man-altered). Explain: .

Tributary properties with respect to top of bank (estimate):
Average width: 38 feet
Average depth: 3 feet
Average side slopes: **2:1.**

Primary tributary substrate composition (check all that apply):

☐ Silts	☐ Sands	☒ Concrete
☐ Cobbles	☐ Gravel	☐ Muck
☐ Bedrock	☐ Vegetation. Type/% cover:	
☒ Other. Explain: rock riprap.		

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: Stable.
Presence of run/riffle/pool complexes. Explain: None.
Tributary geometry: **Relatively straight**
Tributary gradient (approximate average slope): 1 %

(c) Flow:

Tributary provides for: **Seasonal flow**
Estimate average number of flow events in review area/year: **11-20**
Describe flow regime: Flows originate from seasonal storm runoff and excess irrigation runoff associated with roadways, residences, and other infrastructure within a densely-developed localized drainage area.
Other information on duration and volume: .

Surface flow is: **Confined.** Characteristics: Flows are confined within a concrete v-channel or rock riprap channel.

Subsurface flow: **No**. Explain findings: Concrete lining has no water infiltration.
- ☐ Dye (or other) test performed: .

Tributary has (check all that apply):
- ☐ Bed and banks
- ☐ OHWM[6] (check all indicators that apply):

☒ clear, natural line impressed on the bank	☐ the presence of litter and debris
☐ changes in the character of soil	☐ destruction of terrestrial vegetation
☒ shelving	☐ the presence of wrack line
☐ vegetation matted down, bent, or absent	☐ sediment sorting
☐ leaf litter disturbed or washed away	☐ scour
☐ sediment deposition	☐ multiple observed or predicted flow events
☒ water staining	☐ abrupt change in plant community
☐ other (list):	

- ☐ Discontinuous OHWM.[7] Explain: .

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):

☐ High Tide Line indicated by:	☐ Mean High Water Mark indicated by:
☐ oil or scum line along shore objects	☐ survey to available datum;
☐ fine shell or debris deposits (foreshore)	☐ physical markings;
☐ physical markings/characteristics	☐ vegetation lines/changes in vegetation types.
☐ tidal gauges	
☐ other (list):	

[5] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.
[6] A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.
[7] Ibid.

(iii) Chemical Characteristics:

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).

Explain: Flow was observed during the field visits (July/August 2009 and April 2010). Flows resulting from runoff originate within a densely-developed urban environment containing residential and commercial landuses and associated infrastructure.

Identify specific pollutants, if known: Pollutants within urban environements include, but are not limited to, pathogens, fertilizers/nutrients, hydrocarbons, and metals. Common automotive contaminates include suspended solids, lead, phosphorus, polycyclic aromatic hydrocarbons, trash, and debris.

(iv) Biological Characteristics. Channel supports (check all that apply):

☐ Riparian corridor. Characteristics (type, average width): .
☐ Wetland fringe. Characteristics: .
☒ Habitat for:
☐ Federally Listed species. Explain findings: .
☒ Fish/spawn areas. Explain findings: Lower portions of Bolsa Chica Channel are tidally-influenced.
☐ Other environmentally-sensitive species. Explain findings: .
☒ Aquatic/wildlife diversity. Explain findings: The RPW provides aquatic habitat for commonly-occuring birds, mammals, amphibians, and invertebrates.

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW

(i) Physical Characteristics:

(a) General Wetland Characteristics:
Properties:
Wetland size:0.0 acres
Wetland type. Explain: .
Wetland quality. Explain: .
Project wetlands cross or serve as state boundaries. Explain: .

(b) General Flow Relationship with Non-TNW:
Flow is: **Pick List**. Explain: .

Surface flow is**: Pick List**
Characteristics: .

Subsurface flow: **Pick List**. Explain findings: .
☐ Dye (or other) test performed: .

(c) Wetland Adjacency Determination with Non-TNW:
☐ Directly abutting
☐ Not directly abutting
☐ Discrete wetland hydrologic connection. Explain: .
☐ Ecological connection. Explain: .
☐ Separated by berm/barrier. Explain: .

(d) Proximity (Relationship) to TNW
Project wetlands are **Pick List** river miles from TNW.
Project waters are **Pick List** aerial (straight) miles from TNW.
Flow is from: **Pick List.**
Estimate approximate location of wetland as within the **Pick List** floodplain.

(ii) Chemical Characteristics:

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: .
Identify specific pollutants, if known: .

(iii) Biological Characteristics. Wetland supports (check all that apply):

☐ Riparian buffer. Characteristics (type, average width): .
☐ Vegetation type/percent cover. Explain: .
☐ Habitat for:
☐ Federally Listed species. Explain findings: .
☐ Fish/spawn areas. Explain findings: .
☐ Other environmentally-sensitive species. Explain findings: .
☐ Aquatic/wildlife diversity. Explain findings: .

3. Characteristics of all wetlands adjacent to the tributary (if any)

All wetland(s) being considered in the cumulative analysis: **Pick List**
Approximately ( ) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Directly abuts? (Y/N)	Size (in acres)	Directly abuts? (Y/N)	Size (in acres)

Summarize overall biological, chemical and physical functions being performed: .

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: .

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
   ☐ TNWs: linear feet width (ft), Or, acres.
   ☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**
   ☐ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: .
   ☒ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: Flows were observed during August 2009, during the middle of the dry season and is assumed to flow continuously during the wet season.

Provide estimates for jurisdictional waters in the review area (check all that apply):
☒ Tributary waters: **583** linear feet **38** width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .

3. Non-RPWs[8] that flow directly or indirectly into TNWs.
☐ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: **.**

4. Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.
☐ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: **.**

☐ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

5. Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.
☐ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

6. Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.
☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. Impoundments of jurisdictional waters.[9]
As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.
☐ Demonstrate that impoundment was created from "waters of the U.S.," or
☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):[10]
☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
☐ which are or could be used for industrial purposes by industries in interstate commerce.
☐ Interstate isolated waters. Explain: .
☐ Other factors. Explain: .

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[8] See Footnote # 3.
[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.
[10] Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.*

Identify water body and summarize rationale supporting determination: .

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .
☐ Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):
☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
☐ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: .
☐ Other: (explain, if not covered above): .

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):
☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:2011 Jurisdictional Determination Report for the Interstate 405 Improvement Project.
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
☐ Office concurs with data sheets/delineation report.
☐ Office does not concur with data sheets/delineation report.
☐ Data sheets prepared by the Corps: .
☐ Corps navigable waters' study: .
☐ U.S. Geological Survey Hydrologic Atlas: .
☐ USGS NHD data.
☐ USGS 8 and 12 digit HUC maps.
☒ U.S. Geological Survey map(s). Cite scale & quad name:7.5 minute Los Alamitos Quadrangle Map.
☐ USDA Natural Resources Conservation Service Soil Survey. Citation: .
☒ National wetlands inventory map(s). Cite name:U.S. Department of the Interior, U.S. Fish and Wildlife Service (USFWS). 2009. National Wetlands Inventory- Wetlands and Deepwater Habitats of the Conterminous United States. Vector digital data: CONUS_wet_poly. Division of Habitat and Resource Conservation, Washington, D.C. <URL: http://wetlandsfws.er.usgs.gov/NWI/download.html >.
☐ State/Local wetland inventory map(s): .
☒ FEMA/FIRM maps:Federal Emergency Management Agency (FEMA). 1998. Q3 Flood data 100-Year flood plain map..
☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
☒ Photographs: ☒ Aerial (Name & Date):Digital Globe, 2010.
or ☒ Other (Name & Date):2011 Jurisdictional Determination Report, Appendix B photograph log.
☐ Previous determination(s). File no. and date of response letter: .
☐ Applicable/supporting case law: .
☐ Applicable/supporting scientific literature: .
☒ Other information (please specify):Refer to the 2011 Jurisdictional Determination Report for the Interstate 405 Improvement Project for additional information.

B. ADDITIONAL COMMENTS TO SUPPORT JD: .

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD):

B. DISTRICT OFFICE, FILE NAME, AND NUMBER:

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State:CA County/parish/borough: Orange City: Westminster
Center coordinates of site (lat/long in degree decimal format): Lat. ° **Pick List**, Long. ° **Pick List**.
Universal Transverse Mercator: 404616 m E, 3736716 m N
Name of nearest waterbody: Feature 16-1 is an unnamed flood-control drainage tributary to Bolsa Chica Channel and the Pacific.
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Tidally-influenced portion of Bolsa Chica Channel.
Name of watershed or Hydrologic Unit Code (HUC): Seal Beach (18070201)

- ☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
- ☒ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

- ☐ Office (Desk) Determination. Date:
- ☐ Field Determination. Date(s):

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Are no** *"navigable waters of the U.S."* within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]

- ☐ Waters subject to the ebb and flow of the tide.
- ☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. Explain: .

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Are** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):** [1]
   - ☐ TNWs, including territorial seas
   - ☐ Wetlands adjacent to TNWs
   - ☐ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
   - ☒ Non-RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
   - ☐ Impoundments of jurisdictional waters
   - ☐ Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**
   Non-wetland waters: 242 linear feet: 2 width (ft) and/or 0.01 acres.
   Wetlands: 0.0 acres.

   c. **Limits (boundaries) of jurisdiction** based on: **Established by OHWM.**
   Elevation of established OHWM (if known):approximately 27 ft above msl.

2. **Non-regulated waters/wetlands (check if applicable):**[3]
   - ☐ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional. Explain: .

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[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).
[3] Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. TNW
Identify TNW: .

Summarize rationale supporting determination: .

2. Wetland adjacent to TNW
Summarize rationale supporting conclusion that wetland is "adjacent": .

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. Characteristics of non-TNWs that flow directly or indirectly into TNW

(i) General Area Conditions:
Watershed size: 57,354 **acres**
Drainage area: approximately 152.5 **acres**
Average annual rainfall: 16 inches
Average annual snowfall: 0 inches

(ii) Physical Characteristics:
(a) Relationship with TNW:
☐ Tributary flows directly into TNW.
☒ Tributary flows through **3** tributaries before entering TNW.

Project waters are **2-5** river miles from TNW.
Project waters are **1 (or less)** river miles from RPW.
Project waters are **2-5** aerial (straight) miles from TNW.
Project waters are **1 (or less)** aerial (straight) miles from RPW.
Project waters cross or serve as state boundaries. Explain: No state boundary is crossed.

Identify flow route to TNW[5]: Flows from storm water runoff on roadways originate near the intersection of Garden Grove Blvd and Springdale Ave just south of east bound SR-22 and flow southwest under the I-405 and then south to the

[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.
[5] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

Anaheim Barber City Channel, a distance of 8529 ft. Flows then drain southwest for 3312 ft to Bolsa Chica Channel. Flow is then directed south for 4764 ft before reaching the tidally-influenced portion of Bolsa Chica Channel (a TNW), estimated to be at McFadden Ave.
Tributary stream order, if known: 1.

(b) General Tributary Characteristics (check all that apply):

Tributary is:
- ☐ Natural
- ☒ Artificial (man-made). Explain: The tributary is a concrete-lined flood control channel.
- ☐ Manipulated (man-altered). Explain: .

Tributary properties with respect to top of bank (estimate):
Average width: 16 feet
Average depth: 1 feet
Average side slopes: **2:1.**

Primary tributary substrate composition (check all that apply):

☐ Silts	☐ Sands	☒ Concrete
☐ Cobbles	☐ Gravel	☐ Muck
☐ Bedrock	☐ Vegetation. Type/% cover:	
☐ Other. Explain: .		

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: Stable.
Presence of run/riffle/pool complexes. Explain: None.
Tributary geometry: **Relatively straight**
Tributary gradient (approximate average slope): 1 %

(c) Flow:
Tributary provides for: **Ephemeral flow**
Estimate average number of flow events in review area/year: **11-20**
Describe flow regime: Flows originate from seasonal storm runoff and excess irrigation runoff associated with roadways.
Other information on duration and volume: .

Surface flow is: **Confined.** Characteristics: Flows are confined within a concrete v-channel.

Subsurface flow: **No**. Explain findings: Concrete lining has no water infiltration.
- ☐ Dye (or other) test performed: .

Tributary has (check all that apply):
- ☐ Bed and banks
- ☐ OHWM[6] (check all indicators that apply):

☐ clear, natural line impressed on the bank	☐ the presence of litter and debris
☐ changes in the character of soil	☐ destruction of terrestrial vegetation
☐ shelving	☐ the presence of wrack line
☐ vegetation matted down, bent, or absent	☐ sediment sorting
☐ leaf litter disturbed or washed away	☐ scour
☐ sediment deposition	☐ multiple observed or predicted flow events
☒ water staining	☐ abrupt change in plant community
☐ other (list):	

- ☐ Discontinuous OHWM.[7] Explain: .

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):

☐ High Tide Line indicated by:	☐ Mean High Water Mark indicated by:
☐ oil or scum line along shore objects	☐ survey to available datum;
☐ fine shell or debris deposits (foreshore)	☐ physical markings;
☐ physical markings/characteristics	☐ vegetation lines/changes in vegetation types.
☐ tidal gauges	
☐ other (list):	

(iii) Chemical Characteristics:

[6]A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.
[7]Ibid.

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).

Explain: No flow was observed during the field visits (July/August 2009 and April 2010). Flows resulting from roadway and landscape runoff originate within a densely-developed urban environment containing major roadways.

Identify specific pollutants, if known: Pollutants within urban environements include, but are not limited to, pathogens, fertilizers/nutrients, hydrocarbons, and metals. Common automotive contaminates include suspended solids, lead, phosphorus, polycyclic aromatic hydrocarbons, trash, and debris.

(iv) Biological Characteristics. Channel supports (check all that apply):

☐ Riparian corridor. Characteristics (type, average width): .
☐ Wetland fringe. Characteristics: .
☐ Habitat for:
  ☐ Federally Listed species. Explain findings: .
  ☐ Fish/spawn areas. Explain findings: .
  ☐ Other environmentally-sensitive species. Explain findings: .
  ☐ Aquatic/wildlife diversity. Explain findings: .

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW

(i) Physical Characteristics:

(a) General Wetland Characteristics:
Properties:
  Wetland size:0.0 acres
  Wetland type. Explain: .
  Wetland quality. Explain: .
Project wetlands cross or serve as state boundaries. Explain: .

(b) General Flow Relationship with Non-TNW:
Flow is: **Pick List**. Explain: .

Surface flow is**: Pick List**
  Characteristics: .

Subsurface flow: **Pick List**. Explain findings: .
  ☐ Dye (or other) test performed: .

(c) Wetland Adjacency Determination with Non-TNW:
☐ Directly abutting
☐ Not directly abutting
  ☐ Discrete wetland hydrologic connection. Explain: .
  ☐ Ecological connection. Explain: .
  ☐ Separated by berm/barrier. Explain: .

(d) Proximity (Relationship) to TNW
Project wetlands are **Pick List** river miles from TNW.
Project waters are **Pick List** aerial (straight) miles from TNW.
Flow is from: **Pick List.**
Estimate approximate location of wetland as within the **Pick List** floodplain.

(ii) Chemical Characteristics:

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: .
Identify specific pollutants, if known: .

(iii) Biological Characteristics. Wetland supports (check all that apply):

☐ Riparian buffer. Characteristics (type, average width): .
☐ Vegetation type/percent cover. Explain: .
☐ Habitat for:
  ☐ Federally Listed species. Explain findings: .
  ☐ Fish/spawn areas. Explain findings: .
  ☐ Other environmentally-sensitive species. Explain findings: .
  ☐ Aquatic/wildlife diversity. Explain findings: .

3. Characteristics of all wetlands adjacent to the tributary (if any)

All wetland(s) being considered in the cumulative analysis: **Pick List**
Approximately ( ) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Directly abuts? (Y/N)	Size (in acres)	Directly abuts? (Y/N)	Size (in acres)

Summarize overall biological, chemical and physical functions being performed: .

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D:The non-RPW Feature 16-1 is a concrete-lined flood-control channel with a relevant reach of 8529 linear ft. It conveys roadway stromwater and landscape runoff from an approximate 152.5-acre localized drainage area watershed to the nearest TNW, the tidally-influenced portion of Bolsa Chica Channel, located approximately 3.1 stream miles to the southwest. This feature conveys urban runoff pollutants within flows originating within a densly-developed environment. Because the tributary is concrete-lined, no filtration occurs and the chemical pollutants are rapidly transported to earthen, vegetated portions of Bolsa Chica Channel.

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
   ☐ TNWs: linear feet width (ft), Or, acres.
   ☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**
   ☐ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: .

☐ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: .

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .

3. Non-RPWs[8] that flow directly or indirectly into TNWs.
☒ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):
☐ Tributary waters: **242** linear feet **2** width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: **.**

4. Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.
☐ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: **.**

☐ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

5. Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.
☐ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

6. Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.
☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. Impoundments of jurisdictional waters.[9]
As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.
☐ Demonstrate that impoundment was created from "waters of the U.S.," or
☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):[10]
☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.

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[8] See Footnote # 3.
[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.
[10] Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.*

☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
☐ which are or could be used for industrial purposes by industries in interstate commerce.
☐ Interstate isolated waters. Explain: .
☐ Other factors. Explain: .

Identify water body and summarize rationale supporting determination: .

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: **.**
☐ Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):
☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
☐ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: **.**
☐ Other: (explain, if not covered above): **.**

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):
☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:2011 Jurisdictional Determination Report for the Interstate 405 Improvement Project.
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
☐ Office concurs with data sheets/delineation report.
☐ Office does not concur with data sheets/delineation report.
☐ Data sheets prepared by the Corps: .
☐ Corps navigable waters' study: .
☐ U.S. Geological Survey Hydrologic Atlas: .
☐ USGS NHD data.
☐ USGS 8 and 12 digit HUC maps.
☒ U.S. Geological Survey map(s). Cite scale & quad name:7.5 minute Los Alamitos Quadrangle Map.
☐ USDA Natural Resources Conservation Service Soil Survey. Citation: .
☒ National wetlands inventory map(s). Cite name:U.S. Department of the Interior, U.S. Fish and Wildlife Service (USFWS). 2009. National Wetlands Inventory- Wetlands and Deepwater Habitats of the Conterminous United States. Vector digital data: CONUS_wet_poly. Division of Habitat and Resource Conservation, Washington, D.C. <URL: http://wetlandsfws.er.usgs.gov/NWI/download.html >.
☐ State/Local wetland inventory map(s): .
☒ FEMA/FIRM maps:Federal Emergency Management Agency (FEMA). 1998. Q3 Flood data 100-Year flood plain map..
☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
☒ Photographs: ☒ Aerial (Name & Date):Digital Globe, 2010.
or ☒ Other (Name & Date):2011 Jurisdictional Determination Report, Appendix B photograph log.

☐ Previous determination(s). File no. and date of response letter: .
☐ Applicable/supporting case law: .
☐ Applicable/supporting scientific literature: .
☒ Other information (please specify):Refer to the 2011 Jurisdictional Determination Report for the Interstate 405 Improvement Project for additional information.

B. ADDITIONAL COMMENTS TO SUPPORT JD: .

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD):

B. DISTRICT OFFICE, FILE NAME, AND NUMBER:

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State:CA County/parish/borough: Orange City: Westminster
Center coordinates of site (lat/long in degree decimal format): Lat. ° **Pick List**, Long. ° **Pick List**.
Universal Transverse Mercator: 405051 m E, 3736273 m N
Name of nearest waterbody: Feature 16-2, Anaheim Barber City Channel, is a blueline tributary draining to Bolsa Chica Channel and the Pacific Ocean.

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Tidally-influenced portion of Bolsa Chica Channel.
Name of watershed or Hydrologic Unit Code (HUC): Seal Beach (18070201)

- ☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
- ☒ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

- ☐ Office (Desk) Determination. Date:
- ☐ Field Determination. Date(s):

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Are no** "*navigable waters of the U.S.*" within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]

- ☐ Waters subject to the ebb and flow of the tide.
- ☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. Explain: .

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Are** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):** [1]
   - ☐ TNWs, including territorial seas
   - ☐ Wetlands adjacent to TNWs
   - ☒ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
   - ☐ Non-RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
   - ☐ Impoundments of jurisdictional waters
   - ☐ Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**
   Non-wetland waters: 483 linear feet: 40 width (ft) and/or 0.47 acres.
   Wetlands: 0.0 acres.

   c. **Limits (boundaries) of jurisdiction** based on: **Established by OHWM.**
   Elevation of established OHWM (if known):approximately 30 ft above msl.

2. **Non-regulated waters/wetlands (check if applicable):**[3]
   - ☐ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional. Explain: .

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[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).
[3] Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. TNW
Identify TNW: .

Summarize rationale supporting determination: .

2. Wetland adjacent to TNW
Summarize rationale supporting conclusion that wetland is "adjacent": .

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. Characteristics of non-TNWs that flow directly or indirectly into TNW

(i) General Area Conditions:
Watershed size: 57,354 **acres**
Drainage area: approximately 4859 **acres**
Average annual rainfall: 16 inches
Average annual snowfall: 0 inches

(ii) Physical Characteristics:
(a) Relationship with TNW:
☒ Tributary flows directly into TNW.
☐ Tributary flows through **Pick List** tributaries before entering TNW.

Project waters are **1-2** river miles from TNW.
Project waters are **1 (or less)** river miles from RPW.
Project waters are **1-2** aerial (straight) miles from TNW.
Project waters are **1 (or less)** aerial (straight) miles from RPW.
Project waters cross or serve as state boundaries. Explain: No state boundaries are crossed.

[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

Identify flow route to TNW[5]: Storm water and residential landscape flows originate along Ball St in the City of Anaheim, west of I-5 and drain southwest for 8.6 miles before reaching Bolsa Chica Channel. Flow then drains south for 4767 ft before reaching the tidally-influenced portion of Bolsa Chica Channel, a TNW, estimated to be at McFadden Ave.
Tributary stream order, if known: 2.

(b) General Tributary Characteristics (check all that apply):

Tributary is: ☐ Natural
☒ Artificial (man-made). Explain: The tributary is a concrete-lined or earthen/rock riprap flood control channel.
☐ Manipulated (man-altered). Explain: .

Tributary properties with respect to top of bank (estimate):
Average width: 40 feet
Average depth: 12 feet
Average side slopes: **Vertical (1:1 or less).**

Primary tributary substrate composition (check all that apply):

☐ Silts	☐ Sands	☒ Concrete
☐ Cobbles	☐ Gravel	☐ Muck
☐ Bedrock	☐ Vegetation. Type/% cover:	
☐ Other. Explain: rock riprap.		

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: Stable.
Presence of run/riffle/pool complexes. Explain: None.
Tributary geometry: **Relatively straight**
Tributary gradient (approximate average slope): 1 %

(c) Flow:

Tributary provides for: **Seasonal flow**
Estimate average number of flow events in review area/year: **11-20**
Describe flow regime: Flows originate from seasonal storm runoff and excess irrigation runoff associated with roadways, residences, and other infrastructure within a densely-developed localized drainage area.
Other information on duration and volume: .

Surface flow is: **Confined**. Characteristics: Flows are confined within a concrete channel or rock riprap channel.

Subsurface flow: **No**. Explain findings: Concrete lining has no water infiltration.
☐ Dye (or other) test performed: .

Tributary has (check all that apply):
☐ Bed and banks
☐ OHWM[6] (check all indicators that apply):

☐ clear, natural line impressed on the bank	☐ the presence of litter and debris
☐ changes in the character of soil	☐ destruction of terrestrial vegetation
☐ shelving	☐ the presence of wrack line
☐ vegetation matted down, bent, or absent	☐ sediment sorting
☐ leaf litter disturbed or washed away	☐ scour
☐ sediment deposition	☐ multiple observed or predicted flow events
☒ water staining	☐ abrupt change in plant community
☐ other (list):	

☐ Discontinuous OHWM.[7] Explain: .

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):

☐ High Tide Line indicated by:	☐ Mean High Water Mark indicated by:
☐ oil or scum line along shore objects	☐ survey to available datum;
☐ fine shell or debris deposits (foreshore)	☐ physical markings;
☐ physical markings/characteristics	☐ vegetation lines/changes in vegetation types.
☐ tidal gauges	
☐ other (list):	

[5] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.
[6] A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.
[7] Ibid.

(iii) Chemical Characteristics:

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).

Explain: Flow was observed during the field visits (July/August 2009 and April 2010). Flows resulting from runoff originate within a densely-developed urban environment containing residential and commercial landuses and associated infrastructure.

Identify specific pollutants, if known: Pollutants within urban environements include, but are not limited to, pathogens, fertilizers/nutrients, hydrocarbons, and metals. Common automotive contaminates include suspended solids, lead, phosphorus, polycyclic aromatic hydrocarbons, trash, and debris.

(iv) Biological Characteristics. Channel supports (check all that apply):

☐ Riparian corridor. Characteristics (type, average width): .
☐ Wetland fringe. Characteristics: .
☒ Habitat for:
☐ Federally Listed species. Explain findings: .
☐ Fish/spawn areas. Explain findings: Lower portions of Bolsa Chica Channel are tidally-influenced.
☐ Other environmentally-sensitive species. Explain findings: .
☒ Aquatic/wildlife diversity. Explain findings: The RPW provides aquatic habitat for commonly-occuring birds, mammals, amphibians, and invertebrates.

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW

(i) Physical Characteristics:

(a) General Wetland Characteristics:
Properties:
Wetland size:0.0 acres
Wetland type. Explain: .
Wetland quality. Explain: .
Project wetlands cross or serve as state boundaries. Explain: .

(b) General Flow Relationship with Non-TNW:
Flow is: **Pick List**. Explain: .

Surface flow is**: Pick List**
Characteristics: .

Subsurface flow: **Pick List**. Explain findings: .
☐ Dye (or other) test performed: .

(c) Wetland Adjacency Determination with Non-TNW:
☐ Directly abutting
☐ Not directly abutting
☐ Discrete wetland hydrologic connection. Explain: .
☐ Ecological connection. Explain: .
☐ Separated by berm/barrier. Explain: .

(d) Proximity (Relationship) to TNW
Project wetlands are **Pick List** river miles from TNW.
Project waters are **Pick List** aerial (straight) miles from TNW.
Flow is from: **Pick List.**
Estimate approximate location of wetland as within the **Pick List** floodplain.

(ii) Chemical Characteristics:

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: .
Identify specific pollutants, if known: .

(iii) Biological Characteristics. Wetland supports (check all that apply):

☐ Riparian buffer. Characteristics (type, average width): .
☐ Vegetation type/percent cover. Explain: .
☐ Habitat for:
☐ Federally Listed species. Explain findings: .
☐ Fish/spawn areas. Explain findings: .
☐ Other environmentally-sensitive species. Explain findings: .
☐ Aquatic/wildlife diversity. Explain findings: .

3. Characteristics of all wetlands adjacent to the tributary (if any)

All wetland(s) being considered in the cumulative analysis: **Pick List**
Approximately ( ) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Directly abuts? (Y/N)	Size (in acres)	Directly abuts? (Y/N)	Size (in acres)

Summarize overall biological, chemical and physical functions being performed: .

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: .

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
   ☐ TNWs: linear feet width (ft), Or, acres.
   ☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**
   ☐ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: .
   ☒ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: Flows were observed during August 2009, during the middle of the dry season and is assumed to flow continuously during the wet season.

Provide estimates for jurisdictional waters in the review area (check all that apply):
☒ Tributary waters: **483** linear feet **40** width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .

3. Non-RPWs[8] that flow directly or indirectly into TNWs.
☐ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: **.**

4. Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.
☐ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: **.**

☐ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

5. Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.
☐ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

6. Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.
☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. Impoundments of jurisdictional waters.[9]
As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.
☐ Demonstrate that impoundment was created from "waters of the U.S.," or
☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):[10]
☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
☐ which are or could be used for industrial purposes by industries in interstate commerce.
☐ Interstate isolated waters. Explain: .
☐ Other factors. Explain: .

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[8] See Footnote # 3.
[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.
[10] Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.*

Identify water body and summarize rationale supporting determination: .

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .
☐ Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):
☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
☐ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: .
☐ Other: (explain, if not covered above): .

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):
☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:2011 Jurisdictional Determination Report for the Interstate 405 Improvement Project.
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
☐ Office concurs with data sheets/delineation report.
☐ Office does not concur with data sheets/delineation report.
☐ Data sheets prepared by the Corps: .
☐ Corps navigable waters' study: .
☐ U.S. Geological Survey Hydrologic Atlas: .
☐ USGS NHD data.
☐ USGS 8 and 12 digit HUC maps.
☒ U.S. Geological Survey map(s). Cite scale & quad name:7.5 minute Los Alamitos Quadrangle Map.
☐ USDA Natural Resources Conservation Service Soil Survey. Citation: .
☒ National wetlands inventory map(s). Cite name:U.S. Department of the Interior, U.S. Fish and Wildlife Service (USFWS). 2009. National Wetlands Inventory- Wetlands and Deepwater Habitats of the Conterminous United States. Vector digital data: CONUS_wet_poly. Division of Habitat and Resource Conservation, Washington, D.C. <URL: http://wetlandsfws.er.usgs.gov/NWI/download.html >.
☐ State/Local wetland inventory map(s): .
☒ FEMA/FIRM maps:Federal Emergency Management Agency (FEMA). 1998. Q3 Flood data 100-Year flood plain map..
☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
☒ Photographs: ☒ Aerial (Name & Date):Digital Globe, 2010.
or ☒ Other (Name & Date):2011 Jurisdictional Determination Report, Appendix B photograph log.
☐ Previous determination(s). File no. and date of response letter: .
☐ Applicable/supporting case law: .
☐ Applicable/supporting scientific literature: .
☒ Other information (please specify):Refer to the 2011 Jurisdictional Determination Report for the Interstate 405 Improvement Project for additional information.

B. ADDITIONAL COMMENTS TO SUPPORT JD: .

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD):

B. DISTRICT OFFICE, FILE NAME, AND NUMBER:

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State:CA County/parish/borough: Orange City: Westminster
Center coordinates of site (lat/long in degree decimal format): Lat. ° **Pick List**, Long. ° **Pick List**.
Universal Transverse Mercator: 405051 m E, 3736273 m N
Name of nearest waterbody: Feature 16-3, Westminster Channel, is a blueline tributary draining to Anaheim Barber City Channel, Bolsa Chica Channel, and the Pacific Ocean.

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Tidally-influenced portion of Bolsa Chica Channel.
Name of watershed or Hydrologic Unit Code (HUC): Seal Beach (18070201)

- ☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
- ☒ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

- ☐ Office (Desk) Determination. Date:
- ☐ Field Determination. Date(s):

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Are no** "*navigable waters of the U.S.*" within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]

- ☐ Waters subject to the ebb and flow of the tide.
- ☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. Explain: .

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Are** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):** [1]
   - ☐ TNWs, including territorial seas
   - ☐ Wetlands adjacent to TNWs
   - ☒ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
   - ☐ Non-RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
   - ☐ Impoundments of jurisdictional waters
   - ☐ Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**
   Non-wetland waters: 1218 linear feet: 5 width (ft) and/or 0.14 acres.
   Wetlands: 0.0 acres.

   c. **Limits (boundaries) of jurisdiction** based on: **Established by OHWM.**
   Elevation of established OHWM (if known):approximately 30 ft above msl.

2. **Non-regulated waters/wetlands (check if applicable):**[3]
   - ☐ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional. Explain: .

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[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).
[3] Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. TNW
Identify TNW: .

Summarize rationale supporting determination: .

2. Wetland adjacent to TNW
Summarize rationale supporting conclusion that wetland is "adjacent": .

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. Characteristics of non-TNWs that flow directly or indirectly into TNW

(i) General Area Conditions:
Watershed size: 57,354 **acres**
Drainage area: approximately 71 **acres**
Average annual rainfall: 16 inches
Average annual snowfall: 0 inches

(ii) Physical Characteristics:
(a) Relationship with TNW:
☒ Tributary flows directly into TNW.
☐ Tributary flows through **Pick List** tributaries before entering TNW.

Project waters are **1-2** river miles from TNW.
Project waters are **1 (or less)** river miles from RPW.
Project waters are **1-2** aerial (straight) miles from TNW.
Project waters are **1 (or less)** aerial (straight) miles from RPW.
Project waters cross or serve as state boundaries. Explain: No state boundaries are crossed.

Identify flow route to TNW[5]: Storm water and residential landscape flows originate underground in the vicinity of the northboun I-405 onramp at Westminster Blvd and flow northwest for 1218 ft before draining into Anaheim Barber City

[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.
[5] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

Channel. Flow is then directed for 6715 ft before reaching Bolsa Chica Channel. Flow then drains south for 4767 ft before reaching the tidally-influenced portion of Bolsa Chica Channel, a TNW, estimated to be at McFadden Ave. Tributary stream order, if known: 2.

(b) General Tributary Characteristics (check all that apply):

Tributary is: ☐ Natural
☒ Artificial (man-made). Explain: The tributary is a concrete-lined or earthen/rock riprap flood control channel.
☐ Manipulated (man-altered). Explain: .

Tributary properties with respect to top of bank (estimate):
Average width: 34 feet
Average depth: 3 feet
Average side slopes: **2:1.**

Primary tributary substrate composition (check all that apply):

☐ Silts	☐ Sands	☒ Concrete
☐ Cobbles	☐ Gravel	☐ Muck
☐ Bedrock	☐ Vegetation. Type/% cover:	
☐ Other. Explain: rock riprap.		

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: Stable.
Presence of run/riffle/pool complexes. Explain: None.
Tributary geometry: **Relatively straight**
Tributary gradient (approximate average slope): 1 %

(c) Flow:

Tributary provides for: **Seasonal flow**
Estimate average number of flow events in review area/year: **11-20**
Describe flow regime: Flows originate from seasonal storm runoff and excess irrigation runoff associated with roadways, residences, and other infrastructure within a densely-developed localized drainage area.
Other information on duration and volume: .

Surface flow is: **Confined.** Characteristics: Flows are confined within a concrete v-channel or rock riprap channel.

Subsurface flow: **No**. Explain findings: Concrete lining has no water infiltration.
☐ Dye (or other) test performed: .

Tributary has (check all that apply):
☐ Bed and banks
☐ OHWM[6] (check all indicators that apply):

☐ clear, natural line impressed on the bank	☐ the presence of litter and debris
☐ changes in the character of soil	☐ destruction of terrestrial vegetation
☐ shelving	☐ the presence of wrack line
☐ vegetation matted down, bent, or absent	☐ sediment sorting
☐ leaf litter disturbed or washed away	☐ scour
☐ sediment deposition	☐ multiple observed or predicted flow events
☒ water staining	☐ abrupt change in plant community
☐ other (list):	

☐ Discontinuous OHWM.[7] Explain: .

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):

☐ High Tide Line indicated by:	☐ Mean High Water Mark indicated by:
☐ oil or scum line along shore objects	☐ survey to available datum;
☐ fine shell or debris deposits (foreshore)	☐ physical markings;
☐ physical markings/characteristics	☐ vegetation lines/changes in vegetation types.
☐ tidal gauges	
☐ other (list):	

(iii) Chemical Characteristics:

[6]A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.
[7]Ibid.

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).

Explain: Flow was observed during the field visits (July/August 2009 and April 2010). Flows resulting from runoff originate within a densely-developed urban environment containing residential and commercial landuses and associated infrastructure.

Identify specific pollutants, if known: Pollutants within urban environements include, but are not limited to, pathogens, fertilizers/nutrients, hydrocarbons, and metals. Common automotive contaminates include suspended solids, lead, phosphorus, polycyclic aromatic hydrocarbons, trash, and debris.

(iv) Biological Characteristics. Channel supports (check all that apply):

☐ Riparian corridor. Characteristics (type, average width): .
☐ Wetland fringe. Characteristics: .
☒ Habitat for:
☐ Federally Listed species. Explain findings: .
☐ Fish/spawn areas. Explain findings: Lower portions of Bolsa Chica Channel are tidally-influenced.
☐ Other environmentally-sensitive species. Explain findings: .
☒ Aquatic/wildlife diversity. Explain findings: The RPW provides aquatic habitat for commonly-occuring birds, mammals, amphibians, and invertebrates.

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW

(i) Physical Characteristics:

(a) General Wetland Characteristics:
Properties:
Wetland size:0.0 acres
Wetland type. Explain: .
Wetland quality. Explain: .
Project wetlands cross or serve as state boundaries. Explain: .

(b) General Flow Relationship with Non-TNW:
Flow is: **Pick List**. Explain: .

Surface flow is**: Pick List**
Characteristics: .

Subsurface flow: **Pick List**. Explain findings: .
☐ Dye (or other) test performed: .

(c) Wetland Adjacency Determination with Non-TNW:
☐ Directly abutting
☐ Not directly abutting
☐ Discrete wetland hydrologic connection. Explain: .
☐ Ecological connection. Explain: .
☐ Separated by berm/barrier. Explain: .

(d) Proximity (Relationship) to TNW
Project wetlands are **Pick List** river miles from TNW.
Project waters are **Pick List** aerial (straight) miles from TNW.
Flow is from: **Pick List.**
Estimate approximate location of wetland as within the **Pick List** floodplain.

(ii) Chemical Characteristics:

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: .
Identify specific pollutants, if known: .

(iii) Biological Characteristics. Wetland supports (check all that apply):

☐ Riparian buffer. Characteristics (type, average width): .
☐ Vegetation type/percent cover. Explain: .
☐ Habitat for:
☐ Federally Listed species. Explain findings: .
☐ Fish/spawn areas. Explain findings: .
☐ Other environmentally-sensitive species. Explain findings: .
☐ Aquatic/wildlife diversity. Explain findings: .

3. Characteristics of all wetlands adjacent to the tributary (if any)

All wetland(s) being considered in the cumulative analysis: **Pick List**
Approximately ( ) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Directly abuts? (Y/N)	Size (in acres)	Directly abuts? (Y/N)	Size (in acres)

Summarize overall biological, chemical and physical functions being performed: .

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: .

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
   ☐ TNWs: linear feet width (ft), Or, acres.
   ☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**
   ☐ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: .
   ☒ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: Flows were observed during August 2009, during the middle of the dry season and is assumed to flow continuously during the wet season.

Provide estimates for jurisdictional waters in the review area (check all that apply):
☒ Tributary waters: **1218** linear feet **34** width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .

3. **Non-RPWs[8] that flow directly or indirectly into TNWs.**
☐ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: **.**

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**
☐ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: **.**

☐ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**
☐ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

6. **Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**
☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. **Impoundments of jurisdictional waters.[9]**
As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.
☐ Demonstrate that impoundment was created from "waters of the U.S.," or
☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):[10]
☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
☐ which are or could be used for industrial purposes by industries in interstate commerce.
☐ Interstate isolated waters. Explain: .
☐ Other factors. Explain: .

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[8] See Footnote # 3.
[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.
[10] Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.*

Identify water body and summarize rationale supporting determination: .

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .
☐ Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):
☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
☐ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: .
☐ Other: (explain, if not covered above): .

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):
☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:2011 Jurisdictional Determination Report for the Interstate 405 Improvement Project.
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
☐ Office concurs with data sheets/delineation report.
☐ Office does not concur with data sheets/delineation report.
☐ Data sheets prepared by the Corps: .
☐ Corps navigable waters' study: .
☐ U.S. Geological Survey Hydrologic Atlas: .
☐ USGS NHD data.
☐ USGS 8 and 12 digit HUC maps.
☒ U.S. Geological Survey map(s). Cite scale & quad name:7.5 minute Los Alamitos Quadrangle Map.
☐ USDA Natural Resources Conservation Service Soil Survey. Citation: .
☒ National wetlands inventory map(s). Cite name:U.S. Department of the Interior, U.S. Fish and Wildlife Service (USFWS). 2009. National Wetlands Inventory- Wetlands and Deepwater Habitats of the Conterminous United States. Vector digital data: CONUS_wet_poly. Division of Habitat and Resource Conservation, Washington, D.C. <URL: http://wetlandsfws.er.usgs.gov/NWI/download.html >.
☐ State/Local wetland inventory map(s): .
☒ FEMA/FIRM maps:Federal Emergency Management Agency (FEMA). 1998. Q3 Flood data 100-Year flood plain map..
☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
☒ Photographs: ☒ Aerial (Name & Date):Digital Globe, 2010.
or ☒ Other (Name & Date):2011 Jurisdictional Determination Report, Appendix B photograph log.
☐ Previous determination(s). File no. and date of response letter: .
☐ Applicable/supporting case law: .
☐ Applicable/supporting scientific literature: .
☒ Other information (please specify):Refer to the 2011 Jurisdictional Determination Report for the Interstate 405 Improvement Project for additional information.

B. ADDITIONAL COMMENTS TO SUPPORT JD: .

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD):

B. DISTRICT OFFICE, FILE NAME, AND NUMBER:

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State:CA County/parish/borough: Orange City: Westminster
Center coordinates of site (lat/long in degree decimal format): Lat. ° **Pick List**, Long. ° **Pick List**.
Universal Transverse Mercator: 406694 m E, 3734303 m N
Name of nearest waterbody: Feature 18-4, Westminster Channel, is a blueline tributary draining to the Pacific Ocean.
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Tidally-influenced portion of Westminster Channel.
Name of watershed or Hydrologic Unit Code (HUC): Seal Beach (18070201)

- ☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
- ☒ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

- ☐ Office (Desk) Determination. Date:
- ☐ Field Determination. Date(s):

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Are no** *"navigable waters of the U.S."* within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]

- ☐ Waters subject to the ebb and flow of the tide.
- ☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. Explain: .

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Are** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):** [1]
   - ☐ TNWs, including territorial seas
   - ☐ Wetlands adjacent to TNWs
   - ☒ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
   - ☐ Non-RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
   - ☐ Impoundments of jurisdictional waters
   - ☐ Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**
   Non-wetland waters: 658 linear feet: 30 width (ft) and/or 0.50 acres.
   Wetlands: 0.0 acres.

   c. **Limits (boundaries) of jurisdiction** based on: **Established by OHWM.**
   Elevation of established OHWM (if known):approximately 30 ft above msl.

2. **Non-regulated waters/wetlands (check if applicable):**[3]
   - ☐ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional. Explain: .

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[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).
[3] Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. TNW
Identify TNW: .

Summarize rationale supporting determination: .

2. Wetland adjacent to TNW
Summarize rationale supporting conclusion that wetland is "adjacent": .

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. Characteristics of non-TNWs that flow directly or indirectly into TNW

(i) General Area Conditions:
Watershed size: 57,345 **acres**
Drainage area: approximately 3660 **acres**
Average annual rainfall: 16 inches
Average annual snowfall: 0 inches

(ii) Physical Characteristics:
(a) Relationship with TNW:
☒ Tributary flows directly into TNW.
☐ Tributary flows through **Pick List** tributaries before entering TNW.

Project waters are **1-2** river miles from TNW.
Project waters are **1 (or less)** river miles from RPW.
Project waters are **1-2** aerial (straight) miles from TNW.
Project waters are **1 (or less)** aerial (straight) miles from RPW.
Project waters cross or serve as state boundaries. Explain: No state boundaries are crossed.

[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

Identify flow route to TNW[5]: Storm water and residential landscape flows originate west of Euclid St and south of SR-22 in the City of Garden Grove where flows drain southwest for 7.1 miles before reaching the tidally-influenced portion of Westminster Channel, a TNW, estimated to be at Graham St.
Tributary stream order, if known: 2.

(b) General Tributary Characteristics (check all that apply):

Tributary is: ☐ Natural
☒ Artificial (man-made). Explain: The tributary is a concrete-lined or earthen/rock riprap flood control channel.
☐ Manipulated (man-altered). Explain: .

Tributary properties with respect to top of bank (estimate):
Average width: 40 feet
Average depth: 6 feet
Average side slopes: **2:1.**

Primary tributary substrate composition (check all that apply):

☐ Silts	☐ Sands	☒ Concrete
☐ Cobbles	☐ Gravel	☐ Muck
☐ Bedrock	☐ Vegetation. Type/% cover:	
☒ Other. Explain: rock riprap.		

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: Stable.
Presence of run/riffle/pool complexes. Explain: None.
Tributary geometry: **Relatively straight**
Tributary gradient (approximate average slope): 1 %

(c) Flow:

Tributary provides for: **Seasonal flow**
Estimate average number of flow events in review area/year: **11-20**
Describe flow regime: Flows originate from seasonal storm runoff and excess irrigation runoff associated with roadways, residences, and other infrastructure within a densely-developed localized drainage area.
Other information on duration and volume: .

Surface flow is: **Confined.** Characteristics: Flows are confined within a concrete v-channel or rock riprap channel.

Subsurface flow: **No**. Explain findings: Concrete lining has no water infiltration.
☐ Dye (or other) test performed: .

Tributary has (check all that apply):
☐ Bed and banks
☐ OHWM[6] (check all indicators that apply):

☐ clear, natural line impressed on the bank	☐ the presence of litter and debris
☐ changes in the character of soil	☐ destruction of terrestrial vegetation
☐ shelving	☐ the presence of wrack line
☐ vegetation matted down, bent, or absent	☐ sediment sorting
☐ leaf litter disturbed or washed away	☐ scour
☐ sediment deposition	☐ multiple observed or predicted flow events
☒ water staining	☐ abrupt change in plant community
☐ other (list):	

☐ Discontinuous OHWM.[7] Explain: .

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):

☐ High Tide Line indicated by:	☐ Mean High Water Mark indicated by:
☐ oil or scum line along shore objects	☐ survey to available datum;
☐ fine shell or debris deposits (foreshore)	☐ physical markings;
☐ physical markings/characteristics	☐ vegetation lines/changes in vegetation types.
☐ tidal gauges	
☐ other (list):	

[5] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.
[6] A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.
[7] Ibid.

(iii) Chemical Characteristics:

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).

Explain: Flow was observed during the field visits (July/August 2009 and April 2010). Flows resulting from runoff originate within a densely-developed urban environment containing residential and commercial landuses and associated infrastructure.

Identify specific pollutants, if known: Pollutants within urban environements include, but are not limited to, pathogens, fertilizers/nutrients, hydrocarbons, and metals. Common automotive contaminates include suspended solids, lead, phosphorus, polycyclic aromatic hydrocarbons, trash, and debris.

(iv) Biological Characteristics. Channel supports (check all that apply):

☐ Riparian corridor. Characteristics (type, average width): .
☐ Wetland fringe. Characteristics: .
☒ Habitat for:
☐ Federally Listed species. Explain findings: .
☒ Fish/spawn areas. Explain findings: Lower portions of Westminster Channel are tidally-influenced.
☐ Other environmentally-sensitive species. Explain findings: .
☒ Aquatic/wildlife diversity. Explain findings: The RPW provides aquatic habitat for commonly-occuring birds, mammals, amphibians, fish (lower reach), and invertebrates.

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW

(i) Physical Characteristics:

(a) General Wetland Characteristics:
Properties:
Wetland size:0.0 acres
Wetland type. Explain: .
Wetland quality. Explain: .
Project wetlands cross or serve as state boundaries. Explain: .

(b) General Flow Relationship with Non-TNW:
Flow is: **Pick List**. Explain: .

Surface flow is**: Pick List**
Characteristics: .

Subsurface flow: **Pick List**. Explain findings: .
☐ Dye (or other) test performed: .

(c) Wetland Adjacency Determination with Non-TNW:
☐ Directly abutting
☐ Not directly abutting
☐ Discrete wetland hydrologic connection. Explain: .
☐ Ecological connection. Explain: .
☐ Separated by berm/barrier. Explain: .

(d) Proximity (Relationship) to TNW
Project wetlands are **Pick List** river miles from TNW.
Project waters are **Pick List** aerial (straight) miles from TNW.
Flow is from: **Pick List.**
Estimate approximate location of wetland as within the **Pick List** floodplain.

(ii) Chemical Characteristics:

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: .
Identify specific pollutants, if known: .

(iii) Biological Characteristics. Wetland supports (check all that apply):

☐ Riparian buffer. Characteristics (type, average width): .
☐ Vegetation type/percent cover. Explain: .
☐ Habitat for:
☐ Federally Listed species. Explain findings: .
☐ Fish/spawn areas. Explain findings: .
☐ Other environmentally-sensitive species. Explain findings: .
☐ Aquatic/wildlife diversity. Explain findings: .

3. Characteristics of all wetlands adjacent to the tributary (if any)

All wetland(s) being considered in the cumulative analysis: **Pick List**
Approximately ( ) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Directly abuts? (Y/N)	Size (in acres)	Directly abuts? (Y/N)	Size (in acres)

Summarize overall biological, chemical and physical functions being performed: .

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: .

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
   ☐ TNWs: linear feet width (ft), Or, acres.
   ☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**
   ☐ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: .
   ☒ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: Flows were observed during August 2009, during the middle of the dry season and is assumed to flow continuously during the wet season.

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: **658** linear feet **40** width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .

3. **Non-RPWs[8] that flow directly or indirectly into TNWs.**
☐ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: **.**

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**
☐ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: **.**

☐ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**
☐ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

6. **Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**
☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. **Impoundments of jurisdictional waters.[9]**
As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.
☐ Demonstrate that impoundment was created from "waters of the U.S.," or
☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):[10]
☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
☐ which are or could be used for industrial purposes by industries in interstate commerce.
☐ Interstate isolated waters. Explain: .
☐ Other factors. Explain: .

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[8] See Footnote # 3.
[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.
[10] Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.*

Identify water body and summarize rationale supporting determination: .

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .
☐ Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):
☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
☐ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: .
☐ Other: (explain, if not covered above): .

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):
☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:2011 Jurisdictional Determination Report for the Interstate 405 Improvement Project.
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
☐ Office concurs with data sheets/delineation report.
☐ Office does not concur with data sheets/delineation report.
☐ Data sheets prepared by the Corps: .
☐ Corps navigable waters' study: .
☐ U.S. Geological Survey Hydrologic Atlas: .
☐ USGS NHD data.
☐ USGS 8 and 12 digit HUC maps.
☒ U.S. Geological Survey map(s). Cite scale & quad name:7.5 minute Los Alamitos Quadrangle Map.
☐ USDA Natural Resources Conservation Service Soil Survey. Citation: .
☒ National wetlands inventory map(s). Cite name:U.S. Department of the Interior, U.S. Fish and Wildlife Service (USFWS). 2009. National Wetlands Inventory- Wetlands and Deepwater Habitats of the Conterminous United States. Vector digital data: CONUS_wet_poly. Division of Habitat and Resource Conservation, Washington, D.C. <URL: http://wetlandsfws.er.usgs.gov/NWI/download.html >.
☐ State/Local wetland inventory map(s): .
☒ FEMA/FIRM maps:Federal Emergency Management Agency (FEMA). 1998. Q3 Flood data 100-Year flood plain map..
☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
☒ Photographs: ☒ Aerial (Name & Date):Digital Globe, 2010.
or ☒ Other (Name & Date):2011 Jurisdictional Determination Report, Appendix B photograph log.
☐ Previous determination(s). File no. and date of response letter: .
☐ Applicable/supporting case law: .
☐ Applicable/supporting scientific literature: .
☒ Other information (please specify):Refer to the 2011 Jurisdictional Determination Report for the Interstate 405 Improvement Project for additional information.

B. ADDITIONAL COMMENTS TO SUPPORT JD: .

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD):

B. DISTRICT OFFICE, FILE NAME, AND NUMBER:

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State:CA County/parish/borough: Orange City: Westminster
Center coordinates of site (lat/long in degree decimal format): Lat. ° **Pick List**, Long. ° **Pick List**.
Universal Transverse Mercator: 409177 m E, 3731294 m N
Name of nearest waterbody: Feature 21-2, East Garden Grove Wintersburg Channel, is a blueline tributary draining to the Pacific Ocean.

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Tidally-influenced portion of East Garden Grove Wintersburg Channel.
Name of watershed or Hydrologic Unit Code (HUC): Seal Beach (18070201)

- ☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
- ☒ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

- ☐ Office (Desk) Determination. Date:
- ☐ Field Determination. Date(s):

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Are no** "*navigable waters of the U.S.*" within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]

- ☐ Waters subject to the ebb and flow of the tide.
- ☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. Explain: .

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Are** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):** [1]
   - ☐ TNWs, including territorial seas
   - ☐ Wetlands adjacent to TNWs
   - ☒ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
   - ☐ Non-RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
   - ☐ Impoundments of jurisdictional waters
   - ☐ Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**
   Non-wetland waters: 267 linear feet: 58 width (ft) and/or 0.14 acres.
   Wetlands: 0.0 acres.

   c. **Limits (boundaries) of jurisdiction** based on: **Established by OHWM.**
   Elevation of established OHWM (if known):approximately 35 ft above msl.

2. **Non-regulated waters/wetlands (check if applicable):**[3]
   - ☐ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional. Explain: .

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[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).
[3] Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. TNW
Identify TNW: .

Summarize rationale supporting determination: .

2. Wetland adjacent to TNW
Summarize rationale supporting conclusion that wetland is "adjacent": .

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. Characteristics of non-TNWs that flow directly or indirectly into TNW

(i) General Area Conditions:
Watershed size: 57,345 **acres**
Drainage area: approximately 5340 **acres**
Average annual rainfall: 16 inches
Average annual snowfall: 0 inches

(ii) Physical Characteristics:
(a) Relationship with TNW:
☒ Tributary flows directly into TNW.
☐ Tributary flows through **Pick List** tributaries before entering TNW.

Project waters are **1-2** river miles from TNW.
Project waters are **1 (or less)** river miles from RPW.
Project waters are **1-2** aerial (straight) miles from TNW.
Project waters are **1 (or less)** aerial (straight) miles from RPW.
Project waters cross or serve as state boundaries. Explain: No state boundaries are crossed.

[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

Identify flow route to TNW[5]: Storm water and residential landscape flows originate south of Chapman, west of Lewis St, and east of Haster St in the city of Garden Grove and drain southwest for 9.1 miles before entering the tidally-influenced portion of East Garden Grove Wintersberg Channel, a TNW, estimated to be at Edwards St.
Tributary stream order, if known: 2.

(b) General Tributary Characteristics (check all that apply):

Tributary is:
- ☐ Natural
- ☒ Artificial (man-made). Explain: The tributary is a concrete-lined flood control channel.
- ☐ Manipulated (man-altered). Explain: .

Tributary properties with respect to top of bank (estimate):
Average width: 58 feet
Average depth: 8 feet
Average side slopes: **2:1.**

Primary tributary substrate composition (check all that apply):

☐ Silts	☐ Sands	☒ Concrete
☐ Cobbles	☐ Gravel	☐ Muck
☐ Bedrock	☐ Vegetation. Type/% cover:	
☐ Other. Explain: .		

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: Stable.
Presence of run/riffle/pool complexes. Explain: None.
Tributary geometry: **Relatively straight**
Tributary gradient (approximate average slope): 1 %

(c) Flow:
Tributary provides for: **Seasonal flow**
Estimate average number of flow events in review area/year: **11-20**
Describe flow regime: Flows originate from seasonal storm runoff and excess irrigation runoff associated with roadways, residences, and other infrastructure within a densely-developed localized drainage area.
Other information on duration and volume: .

Surface flow is: **Confined.** Characteristics: Flows are confined within a concrete v-channel or rock riprap channel.

Subsurface flow: **No**. Explain findings: Concrete lining has no water infiltration.
- ☐ Dye (or other) test performed: .

Tributary has (check all that apply):
- ☐ Bed and banks
- ☐ OHWM[6] (check all indicators that apply):

☐ clear, natural line impressed on the bank	☐ the presence of litter and debris
☐ changes in the character of soil	☐ destruction of terrestrial vegetation
☐ shelving	☐ the presence of wrack line
☐ vegetation matted down, bent, or absent	☐ sediment sorting
☐ leaf litter disturbed or washed away	☐ scour
☐ sediment deposition	☐ multiple observed or predicted flow events
☒ water staining	☐ abrupt change in plant community
☐ other (list):	

- ☐ Discontinuous OHWM.[7] Explain: .

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):

☒ High Tide Line indicated by:	☒ Mean High Water Mark indicated by:
☐ oil or scum line along shore objects	☐ survey to available datum;
☐ fine shell or debris deposits (foreshore)	☐ physical markings;
☐ physical markings/characteristics	☐ vegetation lines/changes in vegetation types.
☐ tidal gauges	
☐ other (list):	

(iii) Chemical Characteristics:

[5] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.
[6] A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.
[7] Ibid.

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).

Explain: Flow was observed during the field visits (July/August 2009 and April 2010). Flows resulting from runoff originate within a densely-developed urban environment containing residential and commercial landuses and associated infrastructure.

Identify specific pollutants, if known: Pollutants within urban environements include, but are not limited to, pathogens, fertilizers/nutrients, hydrocarbons, and metals. Common automotive contaminates include suspended solids, lead, phosphorus, polycyclic aromatic hydrocarbons, trash, and debris.

(iv) Biological Characteristics. Channel supports (check all that apply):

☐ Riparian corridor. Characteristics (type, average width): .
☐ Wetland fringe. Characteristics: .
☒ Habitat for:
☐ Federally Listed species. Explain findings: .
☐ Fish/spawn areas. Explain findings: .
☐ Other environmentally-sensitive species. Explain findings: .
☒ Aquatic/wildlife diversity. Explain findings: The RPW provides aquatic habitat for commonly-occuring birds, mammals, amphibians, and invertebrates.

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW

(i) Physical Characteristics:

(a) General Wetland Characteristics:
Properties:
Wetland size:0.0 acres
Wetland type. Explain: .
Wetland quality. Explain: .
Project wetlands cross or serve as state boundaries. Explain: .

(b) General Flow Relationship with Non-TNW:
Flow is: **Pick List**. Explain: .

Surface flow is**: Pick List**
Characteristics: .

Subsurface flow: **Pick List**. Explain findings: .
☐ Dye (or other) test performed: .

(c) Wetland Adjacency Determination with Non-TNW:
☐ Directly abutting
☐ Not directly abutting
☐ Discrete wetland hydrologic connection. Explain: .
☐ Ecological connection. Explain: .
☐ Separated by berm/barrier. Explain: .

(d) Proximity (Relationship) to TNW
Project wetlands are **Pick List** river miles from TNW.
Project waters are **Pick List** aerial (straight) miles from TNW.
Flow is from: **Pick List.**
Estimate approximate location of wetland as within the **Pick List** floodplain.

(ii) Chemical Characteristics:

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: .
Identify specific pollutants, if known: .

(iii) Biological Characteristics. Wetland supports (check all that apply):

☐ Riparian buffer. Characteristics (type, average width): .
☐ Vegetation type/percent cover. Explain: .
☐ Habitat for:
☐ Federally Listed species. Explain findings: .
☐ Fish/spawn areas. Explain findings: .
☐ Other environmentally-sensitive species. Explain findings: .
☐ Aquatic/wildlife diversity. Explain findings: .

3. Characteristics of all wetlands adjacent to the tributary (if any)

All wetland(s) being considered in the cumulative analysis: **Pick List**
Approximately ( ) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Directly abuts? (Y/N)	Size (in acres)	Directly abuts? (Y/N)	Size (in acres)

Summarize overall biological, chemical and physical functions being performed: .

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: .

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
   ☐ TNWs: linear feet width (ft), Or, acres.
   ☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**
   ☐ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: .
   ☒ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: Flows were observed during August 2009, during the middle of the dry season and is assumed to flow continuously during the wet season.

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: **267** linear feet **58** width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .

3. **Non-RPWs[8] that flow directly or indirectly into TNWs.**
☐ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: **.**

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**
☐ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: **.**

☐ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**
☐ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

6. **Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**
☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. **Impoundments of jurisdictional waters.[9]**
As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.
☐ Demonstrate that impoundment was created from "waters of the U.S.," or
☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):[10]
☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
☐ which are or could be used for industrial purposes by industries in interstate commerce.
☐ Interstate isolated waters. Explain: .
☐ Other factors. Explain: .

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[8] See Footnote # 3.
[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.
[10] Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.*

Identify water body and summarize rationale supporting determination: .

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .
☐ Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):
☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
☐ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: .
☐ Other: (explain, if not covered above): .

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):
☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:2011 Jurisdictional Determination Report for the Interstate 405 Improvement Project.
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
☐ Office concurs with data sheets/delineation report.
☐ Office does not concur with data sheets/delineation report.
☐ Data sheets prepared by the Corps: .
☐ Corps navigable waters' study: .
☐ U.S. Geological Survey Hydrologic Atlas: .
☐ USGS NHD data.
☐ USGS 8 and 12 digit HUC maps.
☒ U.S. Geological Survey map(s). Cite scale & quad name:7.5 minute Newport Beach Quadrangle Map.
☐ USDA Natural Resources Conservation Service Soil Survey. Citation: .
☒ National wetlands inventory map(s). Cite name:U.S. Department of the Interior, U.S. Fish and Wildlife Service (USFWS). 2009. National Wetlands Inventory- Wetlands and Deepwater Habitats of the Conterminous United States. Vector digital data: CONUS_wet_poly. Division of Habitat and Resource Conservation, Washington, D.C. <URL: http://wetlandsfws.er.usgs.gov/NWI/download.html >.
☐ State/Local wetland inventory map(s): .
☒ FEMA/FIRM maps:Federal Emergency Management Agency (FEMA). 1998. Q3 Flood data 100-Year flood plain map..
☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
☒ Photographs: ☒ Aerial (Name & Date):Digital Globe, 2010.
or ☒ Other (Name & Date):2011 Jurisdictional Determination Report, Appendix B photograph log.
☐ Previous determination(s). File no. and date of response letter: .
☐ Applicable/supporting case law: .
☐ Applicable/supporting scientific literature: .
☒ Other information (please specify):Refer to the 2011 Jurisdictional Determination Report for the Interstate 405 Improvement Project for additional information.

B. ADDITIONAL COMMENTS TO SUPPORT JD: .

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD):

B. DISTRICT OFFICE, FILE NAME, AND NUMBER:

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State:CA County/parish/borough: Orange City: Westminster
Center coordinates of site (lat/long in degree decimal format): Lat. ° **Pick List**, Long. ° **Pick List**.
Universal Transverse Mercator: 410266 m E, 3731269 m N
Name of nearest waterbody: Feature 23-1, East Garden Grove Wintersburg Channel, is a blueline tributary draining to East Garden Grove Wintersburg Channel and the Pacific Ocean.

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Tidally-influenced portion of East Garden Grove Wintersburg Channel.
Name of watershed or Hydrologic Unit Code (HUC): Seal Beach (18070201)

- ☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
- ☒ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

- ☐ Office (Desk) Determination. Date:
- ☐ Field Determination. Date(s):

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Are no** "*navigable waters of the U.S.*" within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]

- ☐ Waters subject to the ebb and flow of the tide.
- ☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. Explain: .

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Are** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):** [1]
   - ☐ TNWs, including territorial seas
   - ☐ Wetlands adjacent to TNWs
   - ☒ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
   - ☐ Non-RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
   - ☐ Impoundments of jurisdictional waters
   - ☐ Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**
   Non-wetland waters: 466 linear feet: 20 width (ft) and/or 0.86 acres.
   Wetlands: 0.0 acres.

   c. **Limits (boundaries) of jurisdiction** based on: **Established by OHWM.**
   Elevation of established OHWM (if known):approximately 22 ft above msl.

2. **Non-regulated waters/wetlands (check if applicable):**[3]
   - ☐ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional. Explain: .

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[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).
[3] Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. TNW
Identify TNW: .

Summarize rationale supporting determination: .

2. Wetland adjacent to TNW
Summarize rationale supporting conclusion that wetland is "adjacent": .

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. Characteristics of non-TNWs that flow directly or indirectly into TNW

(i) General Area Conditions:
Watershed size: 57,345 **acres**
Drainage area: approximately 6400 **acres**
Average annual rainfall: 16 inches
Average annual snowfall: 0 inches

(ii) Physical Characteristics:
(a) Relationship with TNW:
☐ Tributary flows directly into TNW.
☒ Tributary flows through **2** tributaries before entering TNW.

Project waters are **2-5** river miles from TNW.
Project waters are **1 (or less)** river miles from RPW.
Project waters are **1-2** aerial (straight) miles from TNW.
Project waters are **1 (or less)** aerial (straight) miles from RPW.
Project waters cross or serve as state boundaries. Explain: No state boundaries are crossed.

Identify flow route to TNW[5]: Storm water and landscape runoff flows originate in the vicinity of Heil Ave and Newhope St in the city of Fountain Valley and drain southwest for 4.1 miles before entering East Garden Grove Wintersberg

[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.
[5] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

Channel and then 1.0 mile before reaching the tidally-influenced portion of East Garden Grove Wintersberg Channel, a TNW, estimated to be at Edwards St.
Tributary stream order, if known: 2.

(b) General Tributary Characteristics (check all that apply):

Tributary is:
- ☐ Natural
- ☒ Artificial (man-made). Explain: The tributary is a concrete-lined flood control channel.
- ☐ Manipulated (man-altered). Explain: .

Tributary properties with respect to top of bank (estimate):
Average width: 20 feet
Average depth: 8 feet
Average side slopes: **2:1.**

Primary tributary substrate composition (check all that apply):

☐ Silts	☐ Sands	☒ Concrete
☐ Cobbles	☐ Gravel	☐ Muck
☐ Bedrock	☐ Vegetation. Type/% cover:	
☐ Other. Explain: .		

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: Stable.
Presence of run/riffle/pool complexes. Explain: None.
Tributary geometry: **Relatively straight**
Tributary gradient (approximate average slope): 1 %

(c) Flow:
Tributary provides for: **Seasonal flow**
Estimate average number of flow events in review area/year: **11-20**
Describe flow regime: Flows originate from seasonal storm runoff and excess irrigation runoff associated with roadways, residences, and other infrastructure within a densely-developed localized drainage area.
Other information on duration and volume: .

Surface flow is: **Confined.** Characteristics: Flows are confined within a concrete v-channel or rock riprap channel.

Subsurface flow: **No**. Explain findings: Concrete lining has no water infiltration.
- ☐ Dye (or other) test performed: .

Tributary has (check all that apply):
- ☐ Bed and banks
- ☐ OHWM[6] (check all indicators that apply):

☐ clear, natural line impressed on the bank	☐ the presence of litter and debris
☐ changes in the character of soil	☐ destruction of terrestrial vegetation
☐ shelving	☐ the presence of wrack line
☐ vegetation matted down, bent, or absent	☐ sediment sorting
☐ leaf litter disturbed or washed away	☐ scour
☐ sediment deposition	☐ multiple observed or predicted flow events
☒ water staining	☐ abrupt change in plant community
☐ other (list):	

- ☐ Discontinuous OHWM.[7] Explain: .

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):

☒ High Tide Line indicated by:	☒ Mean High Water Mark indicated by:
☐ oil or scum line along shore objects	☐ survey to available datum;
☐ fine shell or debris deposits (foreshore)	☐ physical markings;
☐ physical markings/characteristics	☐ vegetation lines/changes in vegetation types.
☐ tidal gauges	
☐ other (list):	

(iii) Chemical Characteristics:
Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).
Explain: Flow was observed during the field visits (July/August 2009 and April 2010). Flows resulting from runoff

[6]A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.
[7]Ibid.

originate within a densely-developed urban environment containing residential and commercial landuses and associated infrastructure.

Identify specific pollutants, if known: Pollutants within urban environements include, but are not limited to, pathogens, fertilizers/nutrients, hydrocarbons, and metals. Common automotive contaminates include suspended solids, lead, phosphorus, polycyclic aromatic hydrocarbons, trash, and debris.

(iv) Biological Characteristics. Channel supports (check all that apply):

☐ Riparian corridor. Characteristics (type, average width): .
☐ Wetland fringe. Characteristics: .
☒ Habitat for:
☐ Federally Listed species. Explain findings: .
☐ Fish/spawn areas. Explain findings: .
☐ Other environmentally-sensitive species. Explain findings: .
☒ Aquatic/wildlife diversity. Explain findings: The RPW provides aquatic habitat for commonly-occuring birds, mammals, amphibians, and invertebrates.

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW

(i) Physical Characteristics:

(a) General Wetland Characteristics:
Properties:
Wetland size:0.0 acres
Wetland type. Explain: .
Wetland quality. Explain: .
Project wetlands cross or serve as state boundaries. Explain: .

(b) General Flow Relationship with Non-TNW:
Flow is: **Pick List**. Explain: .

Surface flow is**: Pick List**
Characteristics: .

Subsurface flow: **Pick List**. Explain findings: .
☐ Dye (or other) test performed: .

(c) Wetland Adjacency Determination with Non-TNW:
☐ Directly abutting
☐ Not directly abutting
☐ Discrete wetland hydrologic connection. Explain: .
☐ Ecological connection. Explain: .
☐ Separated by berm/barrier. Explain: .

(d) Proximity (Relationship) to TNW
Project wetlands are **Pick List** river miles from TNW.
Project waters are **Pick List** aerial (straight) miles from TNW.
Flow is from: **Pick List.**
Estimate approximate location of wetland as within the **Pick List** floodplain.

(ii) Chemical Characteristics:

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: .
Identify specific pollutants, if known: .

(iii) Biological Characteristics. Wetland supports (check all that apply):

☐ Riparian buffer. Characteristics (type, average width): .
☐ Vegetation type/percent cover. Explain: .
☐ Habitat for:
☐ Federally Listed species. Explain findings: .
☐ Fish/spawn areas. Explain findings: .
☐ Other environmentally-sensitive species. Explain findings: .
☐ Aquatic/wildlife diversity. Explain findings: .

3. Characteristics of all wetlands adjacent to the tributary (if any)

All wetland(s) being considered in the cumulative analysis: **Pick List**
Approximately ( ) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Directly abuts? (Y/N)	Size (in acres)	Directly abuts? (Y/N)	Size (in acres)

Summarize overall biological, chemical and physical functions being performed: .

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: .

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
   ☐ TNWs: linear feet width (ft), Or, acres.
   ☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**
   ☐ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: .
   ☒ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: Flows were observed during August 2009, during the middle of the dry season and is assumed to flow continuously during the wet season.

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: **466** linear feet **20** width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .

3. **Non-RPWs[8] that flow directly or indirectly into TNWs.**
☐ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: **.**

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**
☐ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: **.**

☐ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**
☐ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

6. **Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**
☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. **Impoundments of jurisdictional waters.[9]**
As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.
☐ Demonstrate that impoundment was created from "waters of the U.S.," or
☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):[10]
☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
☐ which are or could be used for industrial purposes by industries in interstate commerce.
☐ Interstate isolated waters. Explain: .
☐ Other factors. Explain: .

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[8] See Footnote # 3.
[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.
[10] Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.*

Identify water body and summarize rationale supporting determination: .

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .
☐ Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):
☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
☐ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: .
☐ Other: (explain, if not covered above): .

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):
☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:2011 Jurisdictional Determination Report for the Interstate 405 Improvement Project.
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
☐ Office concurs with data sheets/delineation report.
☐ Office does not concur with data sheets/delineation report.
☐ Data sheets prepared by the Corps: .
☐ Corps navigable waters' study: .
☐ U.S. Geological Survey Hydrologic Atlas: .
☐ USGS NHD data.
☐ USGS 8 and 12 digit HUC maps.
☒ U.S. Geological Survey map(s). Cite scale & quad name:7.5 minute Newport Beach Quadrangle Map.
☐ USDA Natural Resources Conservation Service Soil Survey. Citation: .
☒ National wetlands inventory map(s). Cite name:U.S. Department of the Interior, U.S. Fish and Wildlife Service (USFWS). 2009. National Wetlands Inventory- Wetlands and Deepwater Habitats of the Conterminous United States. Vector digital data: CONUS_wet_poly. Division of Habitat and Resource Conservation, Washington, D.C. <URL: http://wetlandsfws.er.usgs.gov/NWI/download.html >.
☐ State/Local wetland inventory map(s): .
☒ FEMA/FIRM maps:Federal Emergency Management Agency (FEMA). 1998. Q3 Flood data 100-Year flood plain map..
☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
☒ Photographs: ☒ Aerial (Name & Date):Digital Globe, 2010.
or ☒ Other (Name & Date):2011 Jurisdictional Determination Report, Appendix B photograph log.
☐ Previous determination(s). File no. and date of response letter: .
☐ Applicable/supporting case law: .
☐ Applicable/supporting scientific literature: .
☒ Other information (please specify):Refer to the 2011 Jurisdictional Determination Report for the Interstate 405 Improvement Project for additional information.

B. ADDITIONAL COMMENTS TO SUPPORT JD: .

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD):

B. DISTRICT OFFICE, FILE NAME, AND NUMBER:

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State:CA County/parish/borough: Orange City: Fountain Valley
Center coordinates of site (lat/long in degree decimal format): Lat. ° **Pick List**, Long. ° **Pick List**.
Universal Transverse Mercator: 412711 m E, 3729083 m N
Name of nearest waterbody: Feature 25-4, Fountain Valley Channel, is a blueline tributary draining to Talbert Channel and the Pacific Ocean.

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Tidally-influenced portion of Fountain Valley Channel.
Name of watershed or Hydrologic Unit Code (HUC): Santa Ana (18070203)

- ☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
- ☒ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

- ☐ Office (Desk) Determination. Date:
- ☐ Field Determination. Date(s):

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Are no** "*navigable waters of the U.S.*" within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]

- ☐ Waters subject to the ebb and flow of the tide.
- ☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. Explain: .

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Are** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):** [1]
   - ☐ TNWs, including territorial seas
   - ☐ Wetlands adjacent to TNWs
   - ☒ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
   - ☐ Non-RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
   - ☐ Impoundments of jurisdictional waters
   - ☐ Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**
   Non-wetland waters: 357 linear feet: 9 width (ft) and/or 0.19 acres.
   Wetlands: 0.0 acres.

   c. **Limits (boundaries) of jurisdiction** based on: **Established by OHWM.**
   Elevation of established OHWM (if known):approximately 28 ft above msl.

2. **Non-regulated waters/wetlands (check if applicable):**[3]
   - ☐ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional. Explain: .

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[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).
[3] Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. TNW
Identify TNW: .

Summarize rationale supporting determination: .

2. Wetland adjacent to TNW
Summarize rationale supporting conclusion that wetland is "adjacent": .

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. Characteristics of non-TNWs that flow directly or indirectly into TNW

(i) General Area Conditions:
Watershed size: 1,080,874 **acres**
Drainage area: approximately 404.2 **acres**
Average annual rainfall: 16 inches
Average annual snowfall: 0 inches

(ii) Physical Characteristics:
(a) Relationship with TNW:
☒ Tributary flows directly into TNW.
☐ Tributary flows through **Pick List** tributaries before entering TNW.

Project waters are **2-5** river miles from TNW.
Project waters are **1 (or less)** river miles from RPW.
Project waters are **1-2** aerial (straight) miles from TNW.
Project waters are **1 (or less)** aerial (straight) miles from RPW.
Project waters cross or serve as state boundaries. Explain: No state boundaries are crossed.

[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

Identify flow route to TNW[5]: Storm water and landscape runoff flows originate in the vicinity of Euclid St and Talbert St where Fountain Valley Channel daylights and drains southwest for 2.7 miles before reaching the tidally-influenced portion of Fountain Valley Channel, a TNW, estimated to be at Bushard St.
Tributary stream order, if known: 2.

(b) General Tributary Characteristics (check all that apply):

Tributary is:
- ☐ Natural
- ☒ Artificial (man-made). Explain: The tributary is a rock rip rap-lined flood control channel.
- ☐ Manipulated (man-altered). Explain: .

Tributary properties with respect to top of bank (estimate):
Average width: 40 feet
Average depth: 8 feet
Average side slopes: **2:1.**

Primary tributary substrate composition (check all that apply):
- ☐ Silts
- ☐ Sands
- ☐ Concrete
- ☐ Cobbles
- ☐ Gravel
- ☐ Muck
- ☐ Bedrock
- ☒ Vegetation. Type/% cover: 5% cover of seasonal hydrophytic vegetation consisting of Mexican sprangletop (Leptocloa uninervia). Vegetion is scoured from the channel following annual precipitation events.
- ☒ Other. Explain: Rock rip rap.

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: Stable.
Presence of run/riffle/pool complexes. Explain: None.
Tributary geometry: **Relatively straight**
Tributary gradient (approximate average slope): 1 %

(c) Flow:

Tributary provides for: **Seasonal flow**
Estimate average number of flow events in review area/year: **11-20**
Describe flow regime: Flows originate from seasonal storm runoff and excess irrigation runoff associated with roadways, residences, and other infrastructure within a densely-developed localized drainage area.
Other information on duration and volume: .

Surface flow is: **Confined.** Characteristics: Flows are confined within a rock riprap channel.

Subsurface flow: **No**. Explain findings: Fountain Valley is excavated in uplands and has no subsurface flow.
- ☐ Dye (or other) test performed: .

Tributary has (check all that apply):
- ☐ Bed and banks
- ☐ OHWM[6] (check all indicators that apply):
  - ☒ clear, natural line impressed on the bank
  - ☐ changes in the character of soil
  - ☐ shelving
  - ☐ vegetation matted down, bent, or absent
  - ☐ leaf litter disturbed or washed away
  - ☐ sediment deposition
  - ☒ water staining
  - ☐ other (list):
  - ☒ the presence of litter and debris
  - ☐ destruction of terrestrial vegetation
  - ☐ the presence of wrack line
  - ☐ sediment sorting
  - ☐ scour
  - ☐ multiple observed or predicted flow events
  - ☐ abrupt change in plant community
- ☐ Discontinuous OHWM.[7] Explain: .

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):
- ☐ High Tide Line indicated by:
  - ☐ oil or scum line along shore objects
  - ☐ fine shell or debris deposits (foreshore)
  - ☐ physical markings/characteristics
  - ☐ tidal gauges
  - ☐ other (list):
- ☐ Mean High Water Mark indicated by:
  - ☐ survey to available datum;
  - ☐ physical markings;
  - ☐ vegetation lines/changes in vegetation types.

[5] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.
[6] A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.
[7] Ibid.

(iii) Chemical Characteristics:

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).

Explain: Flow was observed during the field visits (July/August 2009 and April 2010). Flows resulting from runoff originate within a densely-developed urban environment containing residential and commercial landuses and associated infrastructure.

Identify specific pollutants, if known: Pollutants within urban environements include, but are not limited to, pathogens, fertilizers/nutrients, hydrocarbons, and metals. Common automotive contaminates include suspended solids, lead, phosphorus, polycyclic aromatic hydrocarbons, trash, and debris.

(iv) Biological Characteristics. Channel supports (check all that apply):

☐ Riparian corridor. Characteristics (type, average width): .
☐ Wetland fringe. Characteristics: .
☒ Habitat for:
☐ Federally Listed species. Explain findings: .
☐ Fish/spawn areas. Explain findings: .
☐ Other environmentally-sensitive species. Explain findings: .
☒ Aquatic/wildlife diversity. Explain findings: The RPW provides aquatic habitat for commonly-occuring birds, mammals, amphibians, and invertebrates.

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW

(i) Physical Characteristics:

(a) General Wetland Characteristics:
Properties:
Wetland size:0.0 acres
Wetland type. Explain: .
Wetland quality. Explain: .
Project wetlands cross or serve as state boundaries. Explain: .

(b) General Flow Relationship with Non-TNW:
Flow is: **Pick List**. Explain: .

Surface flow is**: Pick List**
Characteristics: .

Subsurface flow: **Pick List**. Explain findings: .
☐ Dye (or other) test performed: .

(c) Wetland Adjacency Determination with Non-TNW:
☐ Directly abutting
☐ Not directly abutting
☐ Discrete wetland hydrologic connection. Explain: .
☐ Ecological connection. Explain: .
☐ Separated by berm/barrier. Explain: .

(d) Proximity (Relationship) to TNW
Project wetlands are **Pick List** river miles from TNW.
Project waters are **Pick List** aerial (straight) miles from TNW.
Flow is from: **Pick List.**
Estimate approximate location of wetland as within the **Pick List** floodplain.

(ii) Chemical Characteristics:

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: .
Identify specific pollutants, if known: .

(iii) Biological Characteristics. Wetland supports (check all that apply):

☐ Riparian buffer. Characteristics (type, average width): .
☐ Vegetation type/percent cover. Explain: .
☐ Habitat for:
☐ Federally Listed species. Explain findings: .
☐ Fish/spawn areas. Explain findings: .
☐ Other environmentally-sensitive species. Explain findings: .
☐ Aquatic/wildlife diversity. Explain findings: .

3. Characteristics of all wetlands adjacent to the tributary (if any)

All wetland(s) being considered in the cumulative analysis: **Pick List**
Approximately ( ) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Directly abuts? (Y/N)	Size (in acres)	Directly abuts? (Y/N)	Size (in acres)

Summarize overall biological, chemical and physical functions being performed: .

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: .

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
   ☐ TNWs: linear feet width (ft), Or, acres.
   ☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**
   ☐ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: .
   ☒ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: Flows were observed during August 2009, during the middle of the dry season and is assumed to flow continuously during the wet season.

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: **357** linear feet **9** width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .

3. Non-RPWs[8] that flow directly or indirectly into TNWs.
☐ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: **.**

4. Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.
☐ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: **.**

☐ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

5. Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.
☐ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

6. Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.
☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. Impoundments of jurisdictional waters.[9]
As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.
☐ Demonstrate that impoundment was created from "waters of the U.S.," or
☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):[10]
☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
☐ which are or could be used for industrial purposes by industries in interstate commerce.
☐ Interstate isolated waters. Explain: .
☐ Other factors. Explain: .

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[8] See Footnote # 3.
[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.
[10] Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.*

Identify water body and summarize rationale supporting determination: .

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .
☐ Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):
☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
☐ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: .
☐ Other: (explain, if not covered above): .

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):
☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:2011 Jurisdictional Determination Report for the Interstate 405 Improvement Project.
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
☐ Office concurs with data sheets/delineation report.
☐ Office does not concur with data sheets/delineation report.
☐ Data sheets prepared by the Corps: .
☐ Corps navigable waters' study: .
☐ U.S. Geological Survey Hydrologic Atlas: .
☐ USGS NHD data.
☐ USGS 8 and 12 digit HUC maps.
☒ U.S. Geological Survey map(s). Cite scale & quad name:7.5 minute Newport Beach Quadrangle Map.
☐ USDA Natural Resources Conservation Service Soil Survey. Citation: .
☒ National wetlands inventory map(s). Cite name:U.S. Department of the Interior, U.S. Fish and Wildlife Service (USFWS). 2009. National Wetlands Inventory- Wetlands and Deepwater Habitats of the Conterminous United States. Vector digital data: CONUS_wet_poly. Division of Habitat and Resource Conservation, Washington, D.C. <URL: http://wetlandsfws.er.usgs.gov/NWI/download.html >.
☐ State/Local wetland inventory map(s): .
☒ FEMA/FIRM maps:Federal Emergency Management Agency (FEMA). 1998. Q3 Flood data 100-Year flood plain map..
☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
☒ Photographs: ☒ Aerial (Name & Date):Digital Globe, 2010.
or ☒ Other (Name & Date):2011 Jurisdictional Determination Report, Appendix B photograph log.
☐ Previous determination(s). File no. and date of response letter: .
☐ Applicable/supporting case law: .
☐ Applicable/supporting scientific literature: .
☒ Other information (please specify):Refer to the 2011 Jurisdictional Determination Report for the Interstate 405 Improvement Project for additional information.

B. ADDITIONAL COMMENTS TO SUPPORT JD: .

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD):

B. DISTRICT OFFICE, FILE NAME, AND NUMBER:

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State:CA County/parish/borough: Orange City: Fountain Valley
Center coordinates of site (lat/long in degree decimal format): Lat. ° **Pick List**, Long. ° **Pick List**.
Universal Transverse Mercator: 413400 m E, 3728770 m N
Name of nearest waterbody: Feature 26-1, Santa Ana River, is a blueline tributary draining to the Pacific Ocean.
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Tidally-influenced portion of the Santa Ana River.
Name of watershed or Hydrologic Unit Code (HUC): Santa Ana River (18070203)

- ☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
- ☒ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

- ☐ Office (Desk) Determination. Date:
- ☐ Field Determination. Date(s):

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Are no** *"navigable waters of the U.S."* within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]

- ☐ Waters subject to the ebb and flow of the tide.
- ☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. Explain: .

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Are** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):** [1]
   - ☐ TNWs, including territorial seas
   - ☐ Wetlands adjacent to TNWs
   - ☒ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
   - ☐ Non-RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
   - ☐ Impoundments of jurisdictional waters
   - ☐ Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**
   Non-wetland waters: 998 linear feet: 238 width (ft) and/or 5.44 acres.
   Wetlands: 0.0 acres.

   c. **Limits (boundaries) of jurisdiction** based on: **Established by OHWM.**
   Elevation of established OHWM (if known):approximately 15 ft above msl.

2. **Non-regulated waters/wetlands (check if applicable):**[3]
   - ☐ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional. Explain: .

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[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).
[3] Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. TNW
Identify TNW: .

Summarize rationale supporting determination: .

2. Wetland adjacent to TNW
Summarize rationale supporting conclusion that wetland is "adjacent": .

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. Characteristics of non-TNWs that flow directly or indirectly into TNW

(i) General Area Conditions:
Watershed size: 1,080,874**acres**
Drainage area: approximately 1,080,874 **acres**
Average annual rainfall: 16 inches
Average annual snowfall: 0 inches

(ii) Physical Characteristics:
(a) Relationship with TNW:
☒ Tributary flows directly into TNW.
☐ Tributary flows through **Pick List** tributaries before entering TNW.

Project waters are **2-5** river miles from TNW.
Project waters are **1 (or less)** river miles from RPW.
Project waters are **2-5** aerial (straight) miles from TNW.
Project waters are **1 (or less)** aerial (straight) miles from RPW.
Project waters cross or serve as state boundaries. Explain: No state boundaries are crossed.

[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

Identify flow route to TNW[5]: Storm water and landscape runoff flows originate in the vicinity of Highland, CA drains southwest for 62 miles before reaching the tidally-influenced portion of Santa Ana River, a TNW, estimated to be at Garfield St.
Tributary stream order, if known: 3.

(b) General Tributary Characteristics (check all that apply):
Tributary is: ☐ Natural
☒ Artificial (man-made). Explain: The tributary is a concrete flood control channel within the review area.
☐ Manipulated (man-altered). Explain: .

Tributary properties with respect to top of bank (estimate):
Average width: 238 feet
Average depth: 30 feet
Average side slopes: **2:1.**

Primary tributary substrate composition (check all that apply):
☐ Silts ☐ Sands ☒ Concrete
☐ Cobbles ☐ Gravel ☐ Muck
☐ Bedrock ☐ Vegetation. Type/% cover:
☒ Other. Explain: Rock rip rap.

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: Stable.
Presence of run/riffle/pool complexes. Explain: None.
Tributary geometry: **Relatively straight**
Tributary gradient (approximate average slope): 1 %

(c) Flow:
Tributary provides for: **Seasonal flow**
Estimate average number of flow events in review area/year: **11-20**
Describe flow regime: Flows originate from seasonal storm runoff and excess irrigation runoff associated with roadways, residences, and other infrastructure within a densely-developed localized drainage area.
Other information on duration and volume: .

Surface flow is: **Confined.** Characteristics: Flows are confined within a rock riprap channel.

Subsurface flow: **Unknown**. Explain findings: The Santa Ana River is a natural drainage that has been subsequently modified; it may have subsurface flow.
☐ Dye (or other) test performed: .

Tributary has (check all that apply):
☐ Bed and banks
☐ OHWM[6] (check all indicators that apply):
☐ clear, natural line impressed on the bank
☐ changes in the character of soil
☐ shelving
☐ vegetation matted down, bent, or absent
☐ leaf litter disturbed or washed away
☐ sediment deposition
☒ water staining
☐ other (list):
☒ the presence of litter and debris
☐ destruction of terrestrial vegetation
☐ the presence of wrack line
☐ sediment sorting
☐ scour
☐ multiple observed or predicted flow events
☐ abrupt change in plant community
☐ Discontinuous OHWM.[7] Explain: .

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):
☐ High Tide Line indicated by:
☐ oil or scum line along shore objects
☐ fine shell or debris deposits (foreshore)
☐ physical markings/characteristics
☐ tidal gauges
☐ other (list):
☐ Mean High Water Mark indicated by:
☐ survey to available datum;
☐ physical markings;
☐ vegetation lines/changes in vegetation types.

[5] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.
[6] A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.
[7] Ibid.

(iii) Chemical Characteristics:

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).

Explain: Flow was observed during the field visits (July/August 2009 and April 2010). Flows resulting from runoff originate within a densely-developed urban environment containing residential and commercial landuses and associated infrastructure.

Identify specific pollutants, if known: Pollutants within urban environements include, but are not limited to, pathogens, fertilizers/nutrients, hydrocarbons, and metals. Common automotive contaminates include suspended solids, lead, phosphorus, polycyclic aromatic hydrocarbons, trash, and debris.

(iv) Biological Characteristics. Channel supports (check all that apply):

☐ Riparian corridor. Characteristics (type, average width): .
☐ Wetland fringe. Characteristics: .
☒ Habitat for:
☐ Federally Listed species. Explain findings: .
☐ Fish/spawn areas. Explain findings: .
☐ Other environmentally-sensitive species. Explain findings: .
☒ Aquatic/wildlife diversity. Explain findings: The RPW provides aquatic habitat for commonly-occuring birds, mammals, amphibians, and invertebrates.

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW

(i) Physical Characteristics:

(a) General Wetland Characteristics:
Properties:
Wetland size:0.0 acres
Wetland type. Explain: .
Wetland quality. Explain: .
Project wetlands cross or serve as state boundaries. Explain: .

(b) General Flow Relationship with Non-TNW:
Flow is: **Pick List**. Explain: .

Surface flow is**: Pick List**
Characteristics: .

Subsurface flow: **Pick List**. Explain findings: .
☐ Dye (or other) test performed: .

(c) Wetland Adjacency Determination with Non-TNW:
☐ Directly abutting
☐ Not directly abutting
☐ Discrete wetland hydrologic connection. Explain: .
☐ Ecological connection. Explain: .
☐ Separated by berm/barrier. Explain: .

(d) Proximity (Relationship) to TNW
Project wetlands are **Pick List** river miles from TNW.
Project waters are **Pick List** aerial (straight) miles from TNW.
Flow is from: **Pick List.**
Estimate approximate location of wetland as within the **Pick List** floodplain.

(ii) Chemical Characteristics:

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: .
Identify specific pollutants, if known: .

(iii) Biological Characteristics. Wetland supports (check all that apply):

☐ Riparian buffer. Characteristics (type, average width): .
☐ Vegetation type/percent cover. Explain: .
☐ Habitat for:
☐ Federally Listed species. Explain findings: .
☐ Fish/spawn areas. Explain findings: .
☐ Other environmentally-sensitive species. Explain findings: .
☐ Aquatic/wildlife diversity. Explain findings: .

3. Characteristics of all wetlands adjacent to the tributary (if any)

All wetland(s) being considered in the cumulative analysis: **Pick List**
Approximately ( ) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Directly abuts? (Y/N)	Size (in acres)	Directly abuts? (Y/N)	Size (in acres)

Summarize overall biological, chemical and physical functions being performed: .

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: .

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
   ☐ TNWs: linear feet width (ft), Or, acres.
   ☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**
   ☐ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: .
   ☒ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: Flows were observed during August 2009, during the middle of the dry season and is assumed to flow continuously during the wet season.

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: **998** linear feet **238** width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .

3. **Non-RPWs[8] that flow directly or indirectly into TNWs.**
☐ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: **.**

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**
☐ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: **.**

☐ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**
☐ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

6. **Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**
☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. **Impoundments of jurisdictional waters.[9]**
As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.
☐ Demonstrate that impoundment was created from "waters of the U.S.," or
☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):[10]
☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
☐ which are or could be used for industrial purposes by industries in interstate commerce.
☐ Interstate isolated waters. Explain: .
☐ Other factors. Explain: .

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[8] See Footnote # 3.
[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.
[10] Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.*

Identify water body and summarize rationale supporting determination: .

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .
☐ Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):
☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
☐ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: .
☐ Other: (explain, if not covered above): .

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):
☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:2011 Jurisdictional Determination Report for the Interstate 405 Improvement Project.
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
☐ Office concurs with data sheets/delineation report.
☐ Office does not concur with data sheets/delineation report.
☐ Data sheets prepared by the Corps: .
☐ Corps navigable waters' study: .
☐ U.S. Geological Survey Hydrologic Atlas: .
☐ USGS NHD data.
☐ USGS 8 and 12 digit HUC maps.
☒ U.S. Geological Survey map(s). Cite scale & quad name:7.5 minute Newport Beach Quadrangle Map.
☐ USDA Natural Resources Conservation Service Soil Survey. Citation: .
☒ National wetlands inventory map(s). Cite name:U.S. Department of the Interior, U.S. Fish and Wildlife Service (USFWS). 2009. National Wetlands Inventory- Wetlands and Deepwater Habitats of the Conterminous United States. Vector digital data: CONUS_wet_poly. Division of Habitat and Resource Conservation, Washington, D.C. <URL: http://wetlandsfws.er.usgs.gov/NWI/download.html >.
☐ State/Local wetland inventory map(s): .
☒ FEMA/FIRM maps:Federal Emergency Management Agency (FEMA). 1998. Q3 Flood data 100-Year flood plain map..
☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
☒ Photographs: ☒ Aerial (Name & Date):Digital Globe, 2010.
or ☒ Other (Name & Date):2011 Jurisdictional Determination Report, Appendix B photograph log.
☐ Previous determination(s). File no. and date of response letter: .
☐ Applicable/supporting case law: .
☐ Applicable/supporting scientific literature: .
☒ Other information (please specify):Refer to the 2011 Jurisdictional Determination Report for the Interstate 405 Improvement Project for additional information.

B. ADDITIONAL COMMENTS TO SUPPORT JD: .

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD):

B. DISTRICT OFFICE, FILE NAME, AND NUMBER:

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State:CA County/parish/borough: Orange City: Costa Mesa
Center coordinates of site (lat/long in degree decimal format): Lat. ° **Pick List**, Long. ° **Pick List**.
Universal Transverse Mercator: 414385 m E, 3728318 m N
Name of nearest waterbody: Feature 27-1, Greenville Banning Channel, is a blueline tributary draining to the Santa Ana River and Pacific Ocean.

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Tidally-influenced portion of the Greenville Banning Channel.
Name of watershed or Hydrologic Unit Code (HUC): Santa Ana River (18070203)

- ☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
- ☒ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

- ☐ Office (Desk) Determination. Date:
- ☐ Field Determination. Date(s):

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Are no** "*navigable waters of the U.S.*" within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]

- ☐ Waters subject to the ebb and flow of the tide.
- ☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. Explain: .

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Are** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):** [1]
   - ☐ TNWs, including territorial seas
   - ☐ Wetlands adjacent to TNWs
   - ☒ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
   - ☐ Non-RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
   - ☐ Impoundments of jurisdictional waters
   - ☐ Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**
   Non-wetland waters: 677 linear feet: 30 width (ft) and/or 0.52 acres.
   Wetlands: 0.0 acres.

   c. **Limits (boundaries) of jurisdiction** based on: **Established by OHWM.**
   Elevation of established OHWM (if known):approximately 17 ft above msl.

2. **Non-regulated waters/wetlands (check if applicable):**[3]
   - ☐ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional. Explain: .

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[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).
[3] Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. TNW
Identify TNW: .

Summarize rationale supporting determination: .

2. Wetland adjacent to TNW
Summarize rationale supporting conclusion that wetland is "adjacent": .

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. Characteristics of non-TNWs that flow directly or indirectly into TNW

(i) General Area Conditions:
Watershed size: 1,808,874 **acres**
Drainage area: approximately 4838 **acres**
Average annual rainfall: 16 inches
Average annual snowfall: 0 inches

(ii) Physical Characteristics:
(a) Relationship with TNW:
☒ Tributary flows directly into TNW.
☐ Tributary flows through **Pick List** tributaries before entering TNW.

Project waters are **1-2** river miles from TNW.
Project waters are **1 (or less)** river miles from RPW.
Project waters are **1-2** aerial (straight) miles from TNW.
Project waters are **1 (or less)** aerial (straight) miles from RPW.
Project waters cross or serve as state boundaries. Explain: No state boundaries are crossed.

[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

Identify flow route to TNW[5]: Storm water and landscape runoff flows originate near the intersection of McFadden Ave and Highland Ave in Santa Ana, CA drains south and west for 5.3 miles before reaching the tidally-influenced portion of Greenville Banning Channel, a TNW, estimated to be at Garfield St.
Tributary stream order, if known: 3.

(b) General Tributary Characteristics (check all that apply):

Tributary is: ☐ Natural
☒ Artificial (man-made). Explain: The tributary is a concrete flood control channel within the review area.
☐ Manipulated (man-altered). Explain: .

Tributary properties with respect to top of bank (estimate):
Average width: 30 feet
Average depth: 10 feet
Average side slopes: **2:1.**

Primary tributary substrate composition (check all that apply):

☐ Silts	☐ Sands	☒ Concrete
☐ Cobbles	☐ Gravel	☐ Muck
☐ Bedrock	☐ Vegetation. Type/% cover:	
☐ Other. Explain: .		

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: Stable.
Presence of run/riffle/pool complexes. Explain: None.
Tributary geometry: **Relatively straight**
Tributary gradient (approximate average slope): 1 %

(c) Flow:

Tributary provides for: **Seasonal flow**
Estimate average number of flow events in review area/year: **11-20**
Describe flow regime: Flows originate from seasonal storm runoff and excess irrigation runoff associated with roadways, residences, and other infrastructure within a densely-developed localized drainage area.
Other information on duration and volume: .

Surface flow is: **Confined.** Characteristics: Flows are confined within a rock riprap channel.

Subsurface flow: **Unknown**. Explain findings: The Santa Ana River is a natural drainage that has been subsequently modified; it may have subsurface flow.
☐ Dye (or other) test performed: .

Tributary has (check all that apply):
☐ Bed and banks
☐ OHWM[6] (check all indicators that apply):

☐ clear, natural line impressed on the bank	☒ the presence of litter and debris
☐ changes in the character of soil	☐ destruction of terrestrial vegetation
☐ shelving	☐ the presence of wrack line
☐ vegetation matted down, bent, or absent	☐ sediment sorting
☐ leaf litter disturbed or washed away	☐ scour
☐ sediment deposition	☐ multiple observed or predicted flow events
☒ water staining	☐ abrupt change in plant community
☐ other (list):	

☐ Discontinuous OHWM.[7] Explain: .

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):

☒ High Tide Line indicated by:	☒ Mean High Water Mark indicated by:
☐ oil or scum line along shore objects	☐ survey to available datum;
☐ fine shell or debris deposits (foreshore)	☐ physical markings;
☐ physical markings/characteristics	☐ vegetation lines/changes in vegetation types.
☐ tidal gauges	
☐ other (list):	

[5] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.
[6] A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.
[7] Ibid.

(iii) Chemical Characteristics:

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).

Explain: Flow was observed during the field visits (July/August 2009 and April 2010). Flows resulting from runoff originate within a densely-developed urban environment containing residential and commercial landuses and associated infrastructure.

Identify specific pollutants, if known: Pollutants within urban environements include, but are not limited to, pathogens, fertilizers/nutrients, hydrocarbons, and metals. Common automotive contaminates include suspended solids, lead, phosphorus, polycyclic aromatic hydrocarbons, trash, and debris.

(iv) Biological Characteristics. Channel supports (check all that apply):

☐ Riparian corridor. Characteristics (type, average width): .
☐ Wetland fringe. Characteristics: .
☒ Habitat for:
☐ Federally Listed species. Explain findings: .
☐ Fish/spawn areas. Explain findings: .
☐ Other environmentally-sensitive species. Explain findings: .
☒ Aquatic/wildlife diversity. Explain findings: The RPW provides aquatic habitat for commonly-occuring birds, mammals, amphibians, and invertebrates.

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW

(i) Physical Characteristics:

(a) General Wetland Characteristics:
Properties:
Wetland size:0.0 acres
Wetland type. Explain: .
Wetland quality. Explain: .
Project wetlands cross or serve as state boundaries. Explain: .

(b) General Flow Relationship with Non-TNW:
Flow is: **Pick List**. Explain: .

Surface flow is**: Pick List**
Characteristics: .

Subsurface flow: **Pick List**. Explain findings: .
☐ Dye (or other) test performed: .

(c) Wetland Adjacency Determination with Non-TNW:
☐ Directly abutting
☐ Not directly abutting
☐ Discrete wetland hydrologic connection. Explain: .
☐ Ecological connection. Explain: .
☐ Separated by berm/barrier. Explain: .

(d) Proximity (Relationship) to TNW
Project wetlands are **Pick List** river miles from TNW.
Project waters are **Pick List** aerial (straight) miles from TNW.
Flow is from: **Pick List.**
Estimate approximate location of wetland as within the **Pick List** floodplain.

(ii) Chemical Characteristics:

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: .
Identify specific pollutants, if known: .

(iii) Biological Characteristics. Wetland supports (check all that apply):

☐ Riparian buffer. Characteristics (type, average width): .
☐ Vegetation type/percent cover. Explain: .
☐ Habitat for:
☐ Federally Listed species. Explain findings: .
☐ Fish/spawn areas. Explain findings: .
☐ Other environmentally-sensitive species. Explain findings: .
☐ Aquatic/wildlife diversity. Explain findings: .

3. Characteristics of all wetlands adjacent to the tributary (if any)

All wetland(s) being considered in the cumulative analysis: **Pick List**
Approximately ( ) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Directly abuts? (Y/N)	Size (in acres)	Directly abuts? (Y/N)	Size (in acres)

Summarize overall biological, chemical and physical functions being performed: .

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: .

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
   ☐ TNWs: linear feet width (ft), Or, acres.
   ☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**
   ☐ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: .
   ☒ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: Flows were observed during August 2009, during the middle of the dry season and is assumed to flow continuously during the wet season.

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: **677** linear feet **30** width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .

3. **Non-RPWs[8] that flow directly or indirectly into TNWs.**
☐ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: **.**

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**
☐ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: **.**

☐ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**
☐ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

6. **Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**
☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. **Impoundments of jurisdictional waters.[9]**
As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.
☐ Demonstrate that impoundment was created from "waters of the U.S.," or
☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):[10]
☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
☐ which are or could be used for industrial purposes by industries in interstate commerce.
☐ Interstate isolated waters. Explain: .
☐ Other factors. Explain: .

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[8] See Footnote # 3.
[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.
[10] Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.*

Identify water body and summarize rationale supporting determination: .

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .
☐ Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):
☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
☐ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: .
☐ Other: (explain, if not covered above): .

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):
☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:2011 Jurisdictional Determination Report for the Interstate 405 Improvement Project.
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
☐ Office concurs with data sheets/delineation report.
☐ Office does not concur with data sheets/delineation report.
☐ Data sheets prepared by the Corps: .
☐ Corps navigable waters' study: .
☐ U.S. Geological Survey Hydrologic Atlas: .
☐ USGS NHD data.
☐ USGS 8 and 12 digit HUC maps.
☒ U.S. Geological Survey map(s). Cite scale & quad name:7.5 minute Newport Beach Quadrangle Map.
☐ USDA Natural Resources Conservation Service Soil Survey. Citation: .
☒ National wetlands inventory map(s). Cite name:U.S. Department of the Interior, U.S. Fish and Wildlife Service (USFWS). 2009. National Wetlands Inventory- Wetlands and Deepwater Habitats of the Conterminous United States. Vector digital data: CONUS_wet_poly. Division of Habitat and Resource Conservation, Washington, D.C. <URL: http://wetlandsfws.er.usgs.gov/NWI/download.html >.
☐ State/Local wetland inventory map(s): .
☒ FEMA/FIRM maps:Federal Emergency Management Agency (FEMA). 1998. Q3 Flood data 100-Year flood plain map..
☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
☒ Photographs: ☒ Aerial (Name & Date):Digital Globe, 2010.
or ☒ Other (Name & Date):2011 Jurisdictional Determination Report, Appendix B photograph log.
☐ Previous determination(s). File no. and date of response letter: .
☐ Applicable/supporting case law: .
☐ Applicable/supporting scientific literature: .
☒ Other information (please specify):Refer to the 2011 Jurisdictional Determination Report for the Interstate 405 Improvement Project for additional information.

B. ADDITIONAL COMMENTS TO SUPPORT JD: .

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD):

B. DISTRICT OFFICE, FILE NAME, AND NUMBER:

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State:CA County/parish/borough: Orange City: Costa Mesa
Center coordinates of site (lat/long in degree decimal format): Lat. ° **Pick List**, Long. ° **Pick List**.
Universal Transverse Mercator: 415898 m E, 3727996 m N
Name of nearest waterbody: Feature 28-2, Gisler Storm Channel, is a blueline tributary draining to the Greenville Banning Channel and the Pacific Ocean.

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Tidally-influenced portion of Greenville Banning Channel.
Name of watershed or Hydrologic Unit Code (HUC): Santa Ana River (18070203)

- ☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
- ☒ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

- ☐ Office (Desk) Determination. Date:
- ☐ Field Determination. Date(s):

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Are no** "*navigable waters of the U.S.*" within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]

- ☐ Waters subject to the ebb and flow of the tide.
- ☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. Explain: .

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Are** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):** [1]
   - ☐ TNWs, including territorial seas
   - ☐ Wetlands adjacent to TNWs
   - ☒ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
   - ☐ Non-RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
   - ☐ Impoundments of jurisdictional waters
   - ☐ Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**
   Non-wetland waters: 1237 linear feet: 20 width (ft) and/or 0.61 acres.
   Wetlands: 0.0 acres.

   c. **Limits (boundaries) of jurisdiction** based on: **Established by OHWM.**
   Elevation of established OHWM (if known):approximately 32 ft above msl.

2. **Non-regulated waters/wetlands (check if applicable):**[3]
   - ☐ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional. Explain: .

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[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).
[3] Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. TNW
Identify TNW: .

Summarize rationale supporting determination: .

2. Wetland adjacent to TNW
Summarize rationale supporting conclusion that wetland is "adjacent": .

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. Characteristics of non-TNWs that flow directly or indirectly into TNW

(i) General Area Conditions:
Watershed size: 1,808,874 **acres**
Drainage area: approximately 161.5 **acres**
Average annual rainfall: 16 inches
Average annual snowfall: 0 inches

(ii) Physical Characteristics:
(a) Relationship with TNW:
☐ Tributary flows directly into TNW.
☒ Tributary flows through **2** tributaries before entering TNW.

Project waters are **2-5** river miles from TNW.
Project waters are **1 (or less)** river miles from RPW.
Project waters are **2-5** aerial (straight) miles from TNW.
Project waters are **1 (or less)** aerial (straight) miles from RPW.
Project waters cross or serve as state boundaries. Explain: No state boundaries are crossed.

Identify flow route to TNW[5]: Storm water and landscape runoff flows originate near the northbound SR-73 onramp to I-405 north and drain northwest for 4748 ft before draining to the Greenville Banning Channel. Flows are then directed for

[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.
[5] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

12,308 ft before reaching the tidally-influenced portion of Greenville Banning Channel, a TNW, estimated to be at Garfield St.
Tributary stream order, if known: 3.

(b) General Tributary Characteristics (check all that apply):
Tributary is: ☐ Natural
☒ Artificial (man-made). Explain: The tributary is a concrete flood control channel within the review area.
☐ Manipulated (man-altered). Explain: .

Tributary properties with respect to top of bank (estimate):
Average width: 56 feet
Average depth: 10 feet
Average side slopes: **2:1.**

Primary tributary substrate composition (check all that apply):
☐ Silts ☐ Sands ☒ Concrete
☐ Cobbles ☐ Gravel ☐ Muck
☐ Bedrock ☐ Vegetation. Type/% cover:
☒ Other. Explain: Rock Riprap.

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: Stable.
Presence of run/riffle/pool complexes. Explain: None.
Tributary geometry: **Relatively straight**
Tributary gradient (approximate average slope): 1 %

(c) Flow:
Tributary provides for: **Seasonal flow**
Estimate average number of flow events in review area/year: **11-20**
Describe flow regime: Flows originate from seasonal storm runoff and excess irrigation runoff associated with roadways, residences, and other infrastructure within a densely-developed localized drainage area.
Other information on duration and volume: .

Surface flow is: **Confined.** Characteristics: Flows are confined within a concrete or rock riprap channel.

Subsurface flow: **Unknown**. Explain findings: The Gisler Storm Channel is an artificial drainage that has been excavated in uplands to convey upland flows and does not have subsurface flow.
☐ Dye (or other) test performed: .

Tributary has (check all that apply):
☐ Bed and banks
☐ OHWM[6] (check all indicators that apply):
☐ clear, natural line impressed on the bank
☐ changes in the character of soil
☐ shelving
☐ vegetation matted down, bent, or absent
☐ leaf litter disturbed or washed away
☐ sediment deposition
☒ water staining
☐ other (list):
☒ the presence of litter and debris
☐ destruction of terrestrial vegetation
☐ the presence of wrack line
☐ sediment sorting
☐ scour
☐ multiple observed or predicted flow events
☐ abrupt change in plant community
☐ Discontinuous OHWM.[7] Explain: .

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):
☐ High Tide Line indicated by:
☐ oil or scum line along shore objects
☐ fine shell or debris deposits (foreshore)
☐ physical markings/characteristics
☐ tidal gauges
☐ other (list):
☐ Mean High Water Mark indicated by:
☐ survey to available datum;
☐ physical markings;
☐ vegetation lines/changes in vegetation types.

(iii) Chemical Characteristics:

[6]A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.
[7]Ibid.

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).

Explain: Flow was observed during the field visits (July/August 2009 and April 2010). Flows resulting from runoff originate within a densely-developed urban environment containing residential and commercial landuses and associated infrastructure.

Identify specific pollutants, if known: Pollutants within urban environements include, but are not limited to, pathogens, fertilizers/nutrients, hydrocarbons, and metals. Common automotive contaminates include suspended solids, lead, phosphorus, polycyclic aromatic hydrocarbons, trash, and debris.

(iv) Biological Characteristics. Channel supports (check all that apply):

☐ Riparian corridor. Characteristics (type, average width): .
☐ Wetland fringe. Characteristics: .
☒ Habitat for:
☐ Federally Listed species. Explain findings: .
☐ Fish/spawn areas. Explain findings: .
☐ Other environmentally-sensitive species. Explain findings: .
☒ Aquatic/wildlife diversity. Explain findings: The RPW provides aquatic habitat for commonly-occuring birds, mammals, amphibians, and invertebrates.

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW

(i) Physical Characteristics:

(a) General Wetland Characteristics:
Properties:
Wetland size:0.0 acres
Wetland type. Explain: .
Wetland quality. Explain: .
Project wetlands cross or serve as state boundaries. Explain: .

(b) General Flow Relationship with Non-TNW:
Flow is: **Pick List**. Explain: .

Surface flow is**: Pick List**
Characteristics: .

Subsurface flow: **Pick List**. Explain findings: .
☐ Dye (or other) test performed: .

(c) Wetland Adjacency Determination with Non-TNW:
☐ Directly abutting
☐ Not directly abutting
☐ Discrete wetland hydrologic connection. Explain: .
☐ Ecological connection. Explain: .
☐ Separated by berm/barrier. Explain: .

(d) Proximity (Relationship) to TNW
Project wetlands are **Pick List** river miles from TNW.
Project waters are **Pick List** aerial (straight) miles from TNW.
Flow is from: **Pick List.**
Estimate approximate location of wetland as within the **Pick List** floodplain.

(ii) Chemical Characteristics:

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: .
Identify specific pollutants, if known: .

(iii) Biological Characteristics. Wetland supports (check all that apply):

☐ Riparian buffer. Characteristics (type, average width): .
☐ Vegetation type/percent cover. Explain: .
☐ Habitat for:
☐ Federally Listed species. Explain findings: .
☐ Fish/spawn areas. Explain findings: .
☐ Other environmentally-sensitive species. Explain findings: .
☐ Aquatic/wildlife diversity. Explain findings: .

3. Characteristics of all wetlands adjacent to the tributary (if any)

All wetland(s) being considered in the cumulative analysis: **Pick List**
Approximately ( ) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Directly abuts? (Y/N)	Size (in acres)	Directly abuts? (Y/N)	Size (in acres)

Summarize overall biological, chemical and physical functions being performed: .

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: .

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
   ☐ TNWs: linear feet width (ft), Or, acres.
   ☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**
   ☐ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: .
   ☒ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: Flows were observed during August 2009, during the middle of the dry season and is assumed to flow continuously during the wet season.

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: **1237** linear feet **30** width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .

3. **Non-RPWs[8] that flow directly or indirectly into TNWs.**
☐ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: **.**

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**
☐ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: **.**

☐ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**
☐ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

6. **Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**
☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. **Impoundments of jurisdictional waters.[9]**
As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.
☐ Demonstrate that impoundment was created from "waters of the U.S.," or
☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):[10]
☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
☐ which are or could be used for industrial purposes by industries in interstate commerce.
☐ Interstate isolated waters. Explain: .
☐ Other factors. Explain: .

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[8] See Footnote # 3.
[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.
[10] Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.*

Identify water body and summarize rationale supporting determination: .

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .
☐ Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):
☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
☐ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: .
☐ Other: (explain, if not covered above): .

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):
☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:2011 Jurisdictional Determination Report for the Interstate 405 Improvement Project.
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
☐ Office concurs with data sheets/delineation report.
☐ Office does not concur with data sheets/delineation report.
☐ Data sheets prepared by the Corps: .
☐ Corps navigable waters' study: .
☐ U.S. Geological Survey Hydrologic Atlas: .
☐ USGS NHD data.
☐ USGS 8 and 12 digit HUC maps.
☒ U.S. Geological Survey map(s). Cite scale & quad name:7.5 minute Newport Beach Quadrangle Map.
☐ USDA Natural Resources Conservation Service Soil Survey. Citation: .
☒ National wetlands inventory map(s). Cite name:U.S. Department of the Interior, U.S. Fish and Wildlife Service (USFWS). 2009. National Wetlands Inventory- Wetlands and Deepwater Habitats of the Conterminous United States. Vector digital data: CONUS_wet_poly. Division of Habitat and Resource Conservation, Washington, D.C. <URL: http://wetlandsfws.er.usgs.gov/NWI/download.html >.
☐ State/Local wetland inventory map(s): .
☒ FEMA/FIRM maps:Federal Emergency Management Agency (FEMA). 1998. Q3 Flood data 100-Year flood plain map..
☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
☒ Photographs: ☒ Aerial (Name & Date):Digital Globe, 2010.
or ☒ Other (Name & Date):2011 Jurisdictional Determination Report, Appendix B photograph log.
☐ Previous determination(s). File no. and date of response letter: .
☐ Applicable/supporting case law: .
☐ Applicable/supporting scientific literature: .
☒ Other information (please specify):Refer to the 2011 Jurisdictional Determination Report for the Interstate 405 Improvement Project for additional information.

B. ADDITIONAL COMMENTS TO SUPPORT JD: .

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD):

B. DISTRICT OFFICE, FILE NAME, AND NUMBER:

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State:CA County/parish/borough: Orange City: Costa Mesa
Center coordinates of site (lat/long in degree decimal format): Lat. ° **Pick List**, Long. ° **Pick List**.
Universal Transverse Mercator: 418119 m E, 3727797 m N
Name of nearest waterbody: Feature 31-2, Santa Ana Delhi Channel, is a blueline tributary draining to Newport Back Bay.
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Tidally-influenced portion of Newport Back Bay.
Name of watershed or Hydrologic Unit Code (HUC): Newport Bay (18070204)

- ☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
- ☒ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

- ☐ Office (Desk) Determination. Date:
- ☐ Field Determination. Date(s):

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Are no** *"navigable waters of the U.S."* within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]

- ☐ Waters subject to the ebb and flow of the tide.
- ☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. Explain: .

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Are** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):** [1]
   - ☐ TNWs, including territorial seas
   - ☐ Wetlands adjacent to TNWs
   - ☒ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
   - ☐ Non-RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
   - ☐ Impoundments of jurisdictional waters
   - ☐ Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**
   Non-wetland waters: 394 linear feet: 58 width (ft) and/or 0.41 acres.
   Wetlands: 0.0 acres.

   c. **Limits (boundaries) of jurisdiction** based on: **Established by OHWM.**
   Elevation of established OHWM (if known):approximately 27 ft above msl.

2. **Non-regulated waters/wetlands (check if applicable):**[3]
   - ☐ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional. Explain: .

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[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).
[3] Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. TNW
Identify TNW: .

Summarize rationale supporting determination: .

2. Wetland adjacent to TNW
Summarize rationale supporting conclusion that wetland is "adjacent": .

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. Characteristics of non-TNWs that flow directly or indirectly into TNW

(i) General Area Conditions:
Watershed size: 101,811 **acres**
Drainage area: approximately 2851.9 **acres**
Average annual rainfall: 16 inches
Average annual snowfall: 0 inches

(ii) Physical Characteristics:
(a) Relationship with TNW:
☐ Tributary flows directly into TNW.
☒ Tributary flows through **2** tributaries before entering TNW.

Project waters are **2-5** river miles from TNW.
Project waters are **1 (or less)** river miles from RPW.
Project waters are **2-5** aerial (straight) miles from TNW.
Project waters are **1 (or less)** aerial (straight) miles from RPW.
Project waters cross or serve as state boundaries. Explain: No state boundaries are crossed.

[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

Identify flow route to TNW[5]: Storm water and landscape runoff flows originate at the intersection of McFadden Dr and Raitt St in the City of Santa Ana and drain south for 6.5 miles before reaching the tidally-influenced portion of the Santa Ana Delhi Channel, a TNW, estimated to be at Brown Trail Dr.
Tributary stream order, if known: 3.

(b) General Tributary Characteristics (check all that apply):
Tributary is: ☐ Natural
☒ Artificial (man-made). Explain: The tributary is a concrete flood control channel within the review area.
☐ Manipulated (man-altered). Explain: .

Tributary properties with respect to top of bank (estimate):
Average width: 50 feet
Average depth: 14 feet
Average side slopes: **2:1.**

Primary tributary substrate composition (check all that apply):
☐ Silts ☐ Sands ☒ Concrete
☐ Cobbles ☐ Gravel ☐ Muck
☐ Bedrock ☐ Vegetation. Type/% cover:
☐ Other. Explain: .

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: Stable.
Presence of run/riffle/pool complexes. Explain: None.
Tributary geometry: **Relatively straight**
Tributary gradient (approximate average slope): 1 %

(c) Flow:
Tributary provides for: **Seasonal flow**
Estimate average number of flow events in review area/year: **11-20**
Describe flow regime: Flows originate from seasonal storm runoff and excess irrigation runoff associated with roadways, residences, and other infrastructure within a densely-developed localized drainage area.
Other information on duration and volume: .

Surface flow is: **Confined.** Characteristics: Flows are confined within a concrete channel.

Subsurface flow: **Unknown**. Explain findings: The Santa Ana Delhi Channel is an artificial drainage that has been excavated in uplands to convey upland flows and does not have subsurface flow.
☐ Dye (or other) test performed: .

Tributary has (check all that apply):
☐ Bed and banks
☐ OHWM[6] (check all indicators that apply):
☐ clear, natural line impressed on the bank
☐ changes in the character of soil
☐ shelving
☐ vegetation matted down, bent, or absent
☐ leaf litter disturbed or washed away
☐ sediment deposition
☒ water staining
☐ other (list):
☐ the presence of litter and debris
☐ destruction of terrestrial vegetation
☐ the presence of wrack line
☐ sediment sorting
☐ scour
☐ multiple observed or predicted flow events
☐ abrupt change in plant community
☐ Discontinuous OHWM.[7] Explain: .

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):
☐ High Tide Line indicated by:
☐ oil or scum line along shore objects
☐ fine shell or debris deposits (foreshore)
☐ physical markings/characteristics
☐ tidal gauges
☐ other (list):
☐ Mean High Water Mark indicated by:
☐ survey to available datum;
☐ physical markings;
☐ vegetation lines/changes in vegetation types.

[5] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.
[6] A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.
[7] Ibid.

(iii) Chemical Characteristics:

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).

Explain: Flow was observed during the field visits (July/August 2009 and April 2010). Flows resulting from runoff originate within a densely-developed urban environment containing residential and commercial landuses and associated infrastructure.

Identify specific pollutants, if known: Pollutants within urban environements include, but are not limited to, pathogens, fertilizers/nutrients, hydrocarbons, and metals. Common automotive contaminates include suspended solids, lead, phosphorus, polycyclic aromatic hydrocarbons, trash, and debris.

(iv) Biological Characteristics. Channel supports (check all that apply):

☐ Riparian corridor. Characteristics (type, average width): .
☐ Wetland fringe. Characteristics: .
☒ Habitat for:
☐ Federally Listed species. Explain findings: .
☐ Fish/spawn areas. Explain findings: .
☐ Other environmentally-sensitive species. Explain findings: .
☒ Aquatic/wildlife diversity. Explain findings: The RPW provides aquatic habitat for commonly-occuring birds, mammals, amphibians, and invertebrates.

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW

(i) Physical Characteristics:

(a) General Wetland Characteristics:
Properties:
Wetland size:0.0 acres
Wetland type. Explain: .
Wetland quality. Explain: .
Project wetlands cross or serve as state boundaries. Explain: .

(b) General Flow Relationship with Non-TNW:
Flow is: **Pick List**. Explain: .

Surface flow is**: Pick List**
Characteristics: .

Subsurface flow: **Pick List**. Explain findings: .
☐ Dye (or other) test performed: .

(c) Wetland Adjacency Determination with Non-TNW:
☐ Directly abutting
☐ Not directly abutting
☐ Discrete wetland hydrologic connection. Explain: .
☐ Ecological connection. Explain: .
☐ Separated by berm/barrier. Explain: .

(d) Proximity (Relationship) to TNW
Project wetlands are **Pick List** river miles from TNW.
Project waters are **Pick List** aerial (straight) miles from TNW.
Flow is from: **Pick List.**
Estimate approximate location of wetland as within the **Pick List** floodplain.

(ii) Chemical Characteristics:

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: .
Identify specific pollutants, if known: .

(iii) Biological Characteristics. Wetland supports (check all that apply):

☐ Riparian buffer. Characteristics (type, average width): .
☐ Vegetation type/percent cover. Explain: .
☐ Habitat for:
☐ Federally Listed species. Explain findings: .
☐ Fish/spawn areas. Explain findings: .
☐ Other environmentally-sensitive species. Explain findings: .
☐ Aquatic/wildlife diversity. Explain findings: .

3. Characteristics of all wetlands adjacent to the tributary (if any)

All wetland(s) being considered in the cumulative analysis: **Pick List**
Approximately ( ) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Directly abuts? (Y/N)	Size (in acres)	Directly abuts? (Y/N)	Size (in acres)

Summarize overall biological, chemical and physical functions being performed: .

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: .

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
   ☐ TNWs: linear feet width (ft), Or, acres.
   ☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**
   ☐ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: .
   ☒ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: Flows were observed during August 2009, during the middle of the dry season and is assumed to flow continuously during the wet season.

Provide estimates for jurisdictional waters in the review area (check all that apply):
- ☐ Tributary waters: **394** linear feet **50** width (ft).
- ☐ Other non-wetland waters: acres.
  Identify type(s) of waters: .

3. Non-RPWs[8] that flow directly or indirectly into TNWs.

☐ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):
- ☐ Tributary waters: linear feet width (ft).
- ☐ Other non-wetland waters: acres.
  Identify type(s) of waters: **.**

4. Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.

☐ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.

☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: **.**

☐ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

5. Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.

☐ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

6. Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.

☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. Impoundments of jurisdictional waters.[9]

As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.
- ☐ Demonstrate that impoundment was created from "waters of the U.S.," or
- ☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
- ☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):[10]
- ☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
- ☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
- ☐ which are or could be used for industrial purposes by industries in interstate commerce.
- ☐ Interstate isolated waters. Explain: .
- ☐ Other factors. Explain: .

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[8] See Footnote # 3.

[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.

[10] Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.*

Identify water body and summarize rationale supporting determination: .

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .
☐ Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):
☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
☐ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: .
☐ Other: (explain, if not covered above): .

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

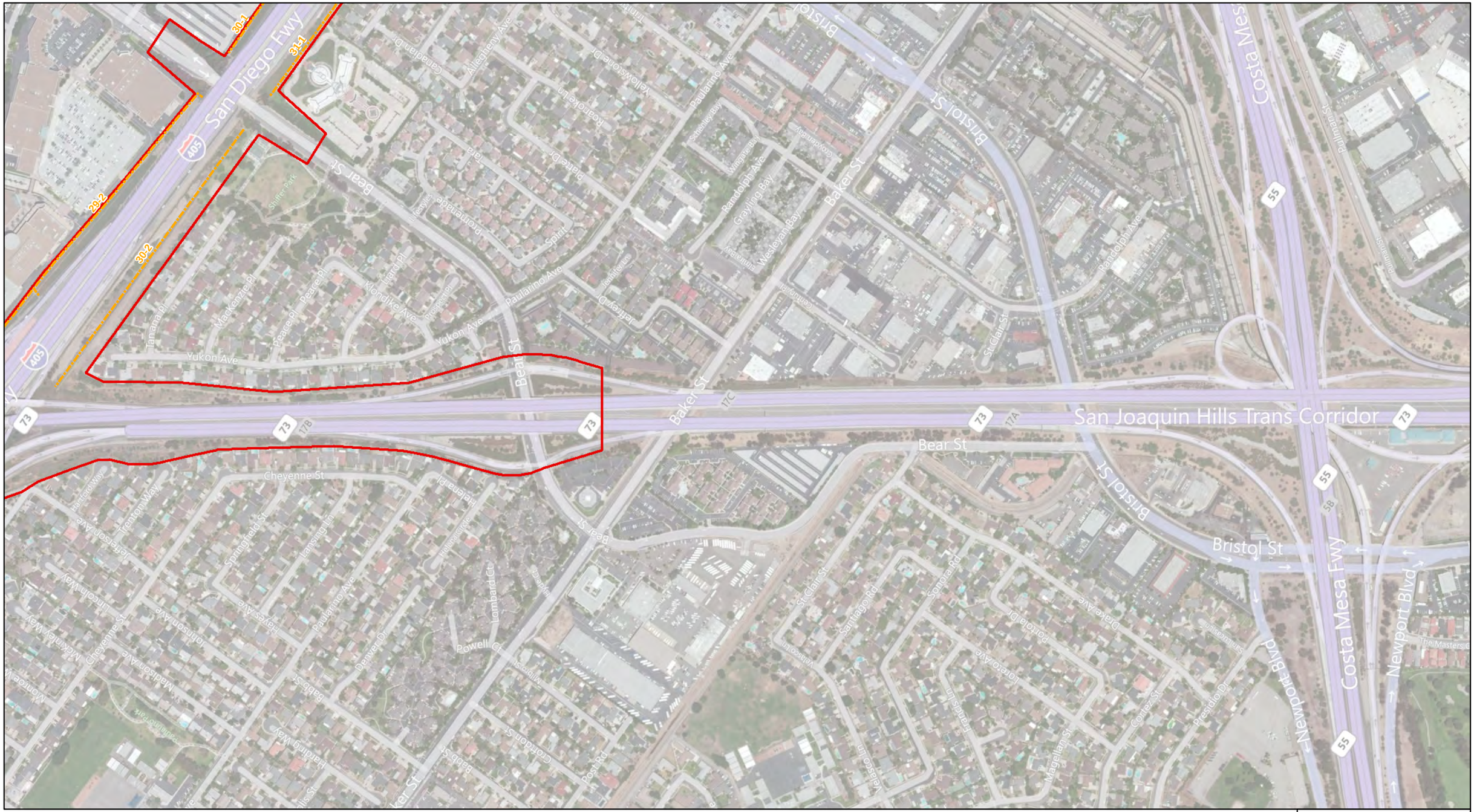
Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):
☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:2011 Jurisdictional Determination Report for the Interstate 405 Improvement Project.
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
☐ Office concurs with data sheets/delineation report.
☐ Office does not concur with data sheets/delineation report.
☐ Data sheets prepared by the Corps: .
☐ Corps navigable waters' study: .
☐ U.S. Geological Survey Hydrologic Atlas: .
☐ USGS NHD data.
☐ USGS 8 and 12 digit HUC maps.
☒ U.S. Geological Survey map(s). Cite scale & quad name:7.5 minute Newport Beach Quadrangle Map.
☐ USDA Natural Resources Conservation Service Soil Survey. Citation: .
☒ National wetlands inventory map(s). Cite name:U.S. Department of the Interior, U.S. Fish and Wildlife Service (USFWS). 2009. National Wetlands Inventory- Wetlands and Deepwater Habitats of the Conterminous United States. Vector digital data: CONUS_wet_poly. Division of Habitat and Resource Conservation, Washington, D.C. <URL: http://wetlandsfws.er.usgs.gov/NWI/download.html >.
☐ State/Local wetland inventory map(s): .
☒ FEMA/FIRM maps:Federal Emergency Management Agency (FEMA). 1998. Q3 Flood data 100-Year flood plain map..
☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
☒ Photographs: ☒ Aerial (Name & Date):Digital Globe, 2010.
or ☒ Other (Name & Date):2011 Jurisdictional Determination Report, Appendix B photograph log.
☐ Previous determination(s). File no. and date of response letter: .
☐ Applicable/supporting case law: .
☐ Applicable/supporting scientific literature: .
☒ Other information (please specify):Refer to the 2011 Jurisdictional Determination Report for the Interstate 405 Improvement Project for additional information.

B. ADDITIONAL COMMENTS TO SUPPORT JD: .

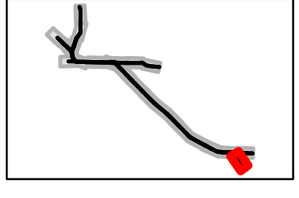
Appendix E. USACE, RWQCB, and CDFG Drainage Exhibit

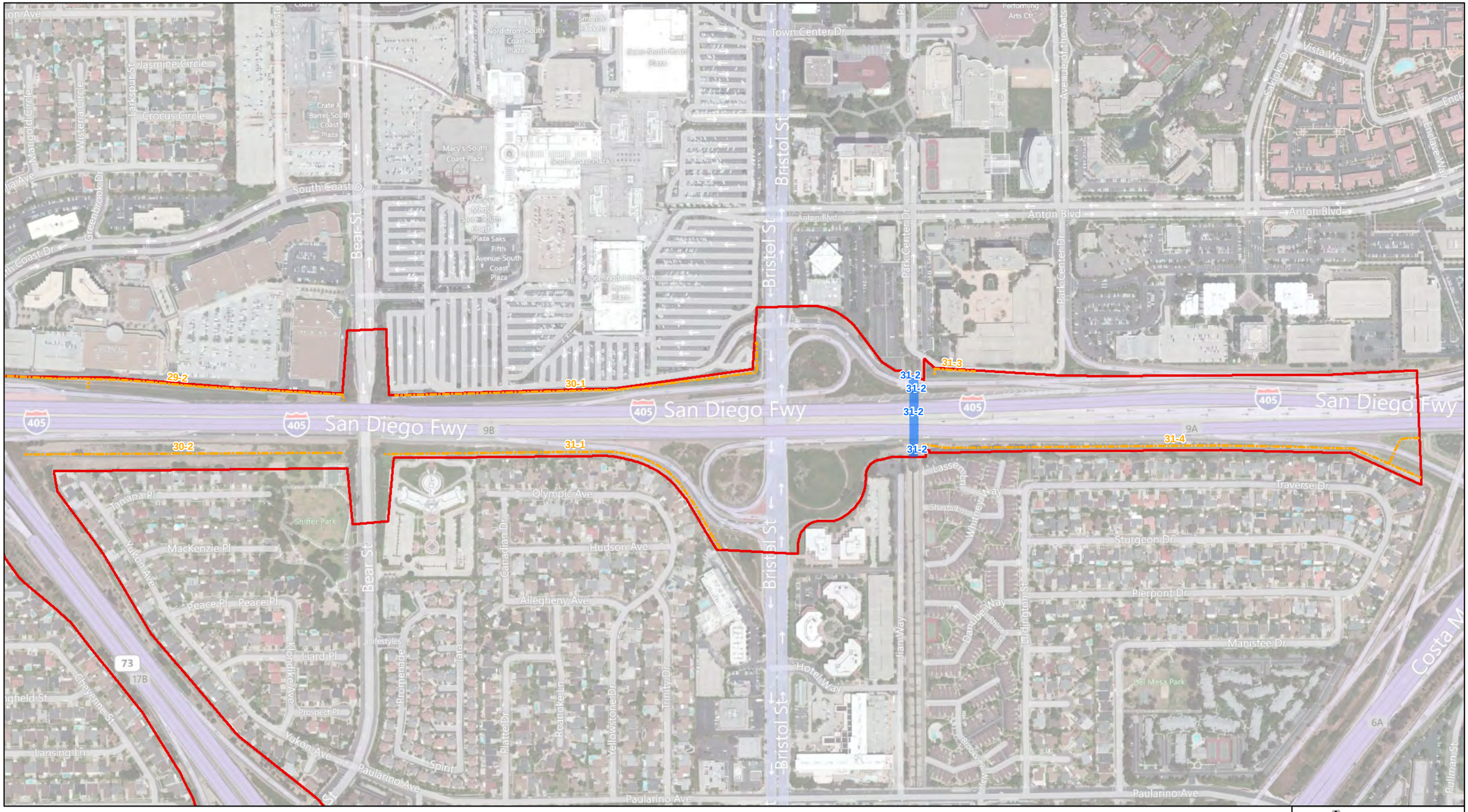


Study Area
Alternative 1 Temporary Impact
Alternative 1 Permanent Impact
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

USACE, RWQCB, CDFG
Drainage Exhibit
Alternative 1
March 2012
Figure 1-1





Study Area
Alternative 1 Temporary Impact
Alternative 1 Permanent Impact
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

USACE, RWQCB, CDFG
Drainage Exhibit
Alternative 1
March 2012

Figure 1-2

Study Area
Alternative 1 Temporary Impact
Alternative 1 Permanent Impact
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

USACE, RWQCB, CDFG
Drainage Exhibit
Alternative 1
March 2012
Figure 1-3

Study Area
Alternative 1 Temporary Impact
Alternative 1 Permanent Impact
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

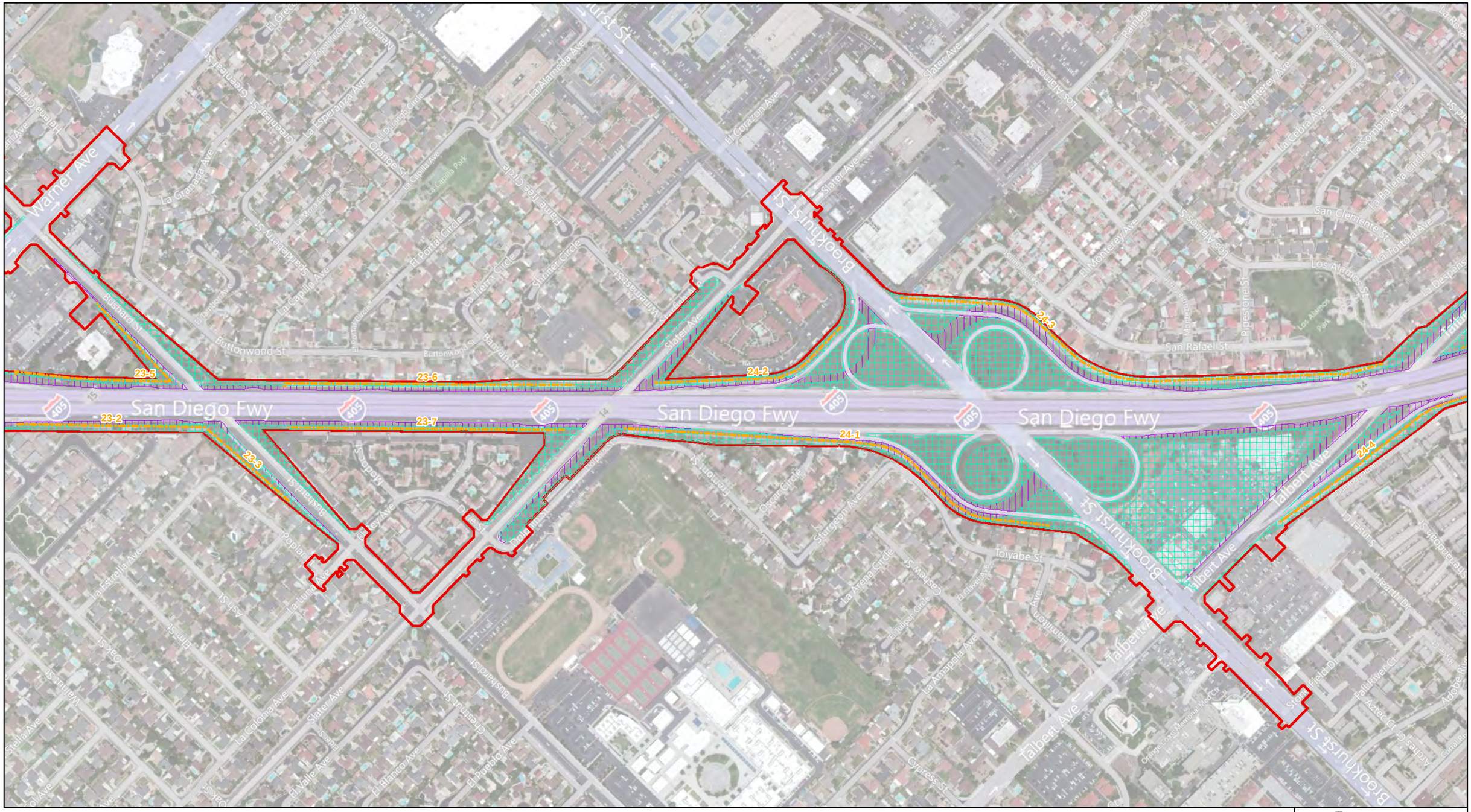
0 250 500 1,000 Feet

USACE, RWQCB, CDFG
Drainage Exhibit
Alternative 1
March 2012
Figure 1-4

Study Area
Alternative 1 Temporary Impact
Alternative 1 Permanent Impact
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

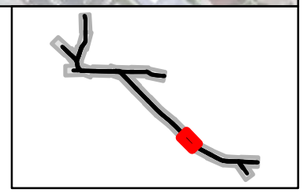
USACE, RWQCB, CDFG
Drainage Exhibit
Alternative 1
March 2012
Figure 1-5



Study Area
Alternative 1 Temporary Impact
Alternative 1 Permanent Impact
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

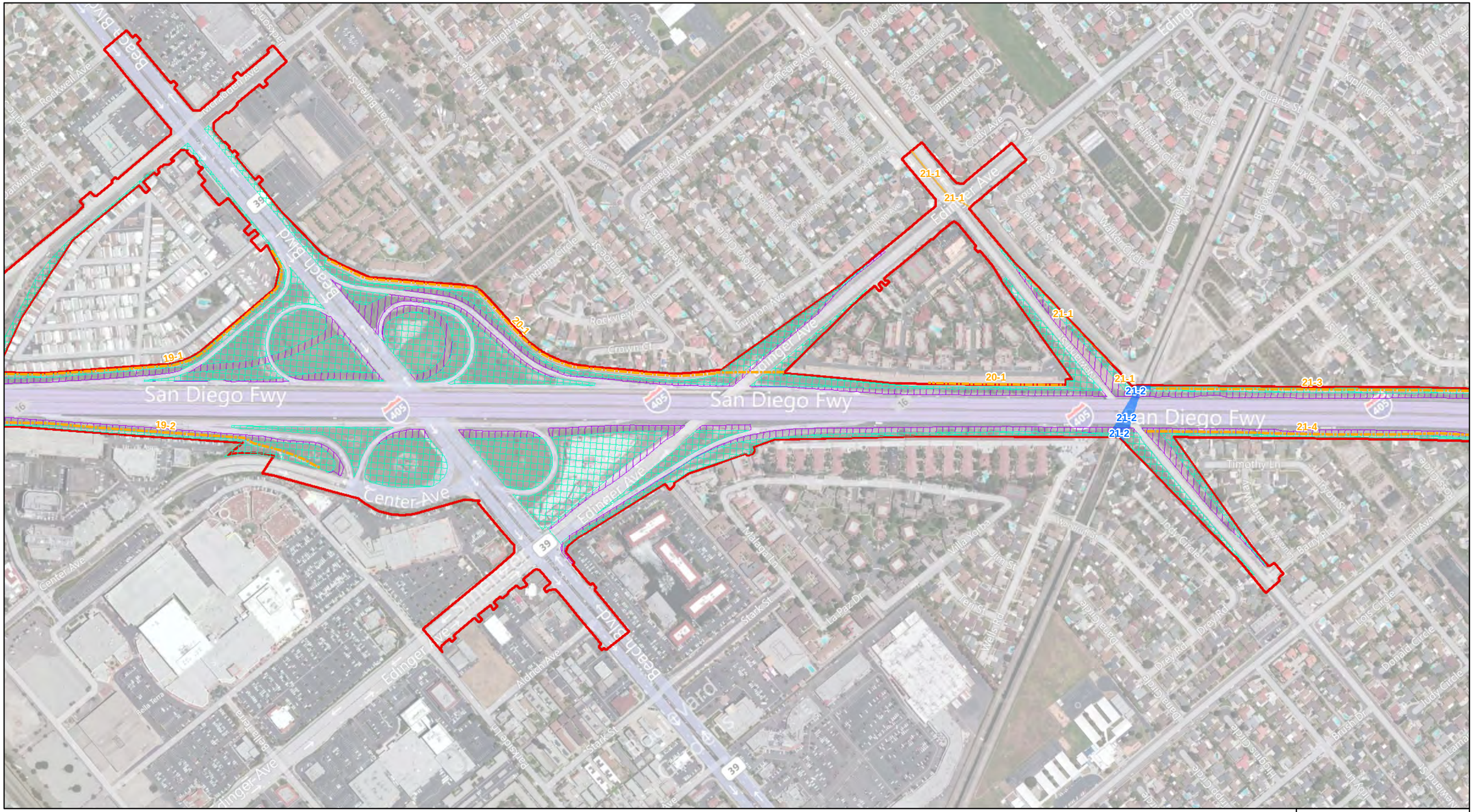
USACE, RWQCB, CDFG
Drainage Exhibit
Alternative 1
March 2012
Figure 1-6



Study Area
Alternative 1 Temporary Impact
Alternative 1 Permanent Impact
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

USACE, RWQCB, CDFG
Drainage Exhibit
Alternative 1
March 2012
Figure 1-7

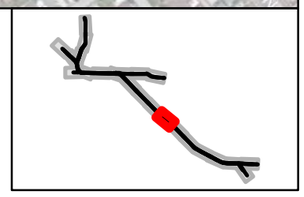


Study Area
Alternative 1 Temporary Impact
Alternative 1 Permanent Impact
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

USACE, RWQCB, CDFG
Drainage Exhibit
Alternative 1
March 2012

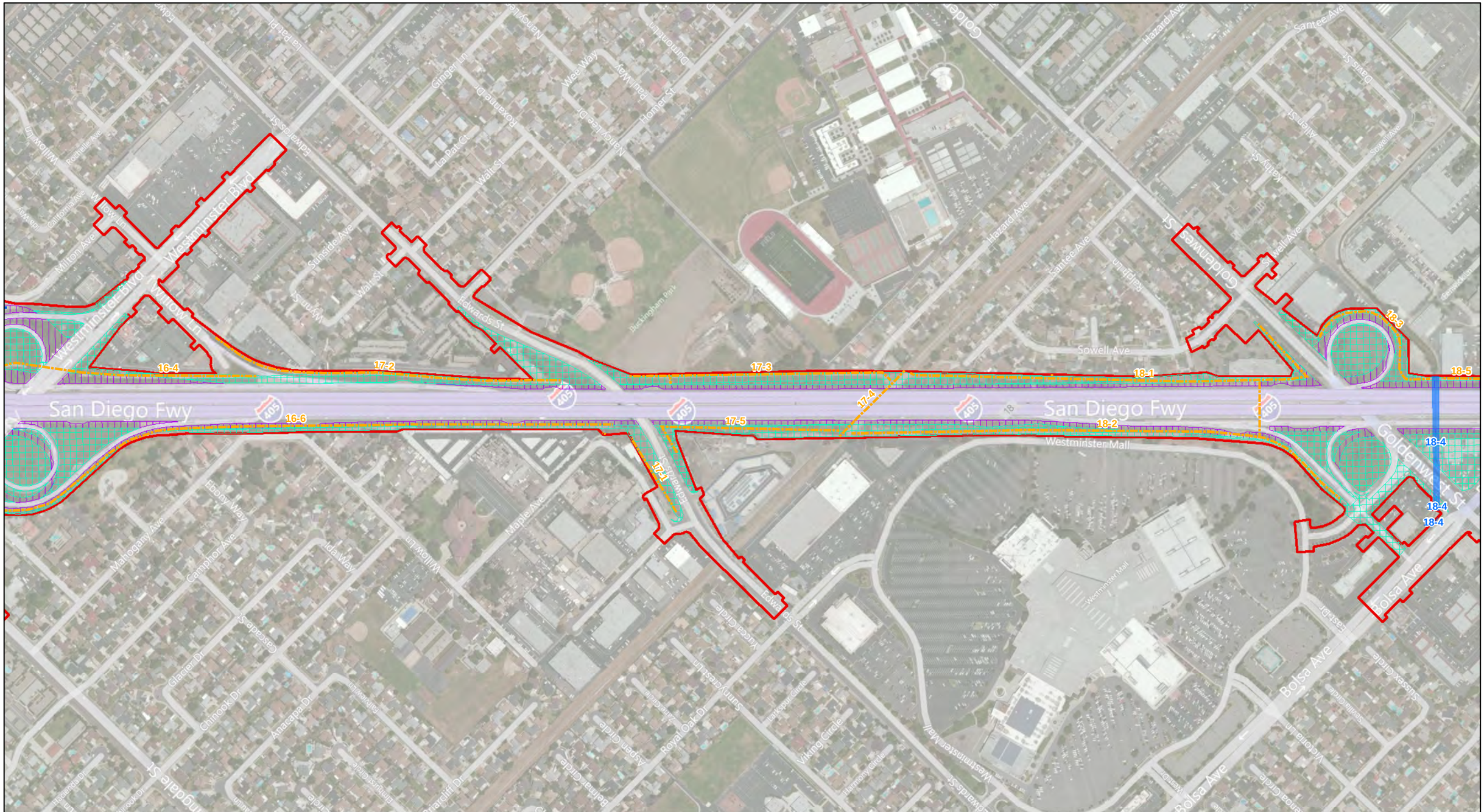
Figure 1-8



Study Area
Alternative 1 Temporary Impact
Alternative 1 Permanent Impact
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000
Feet

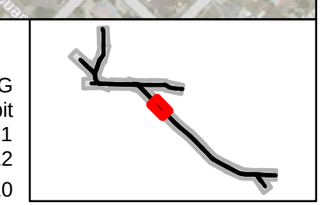
USACE, RWQCB, CDFG
Drainage Exhibit
Alternative 1
March 2012
Figure 1-9



Study Area
Alternative 1 Temporary Impact
Alternative 1 Permanent Impact
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

USACE, RWQCB, CDFG
Drainage Exhibit
Alternative 1
March 2012
Figure 1-10



Study Area
Alternative 1 Temporary Impact
Alternative 1 Permanent Impact
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

USACE, RWQCB, CDFG
Drainage Exhibit
Alternative 1
March 2012
Figure 1-11

Study Area
Alternative 1 Temporary Impact
Alternative 1 Permanent Impact
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

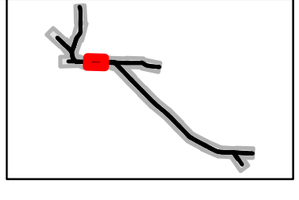
0 250 500 1,000 Feet

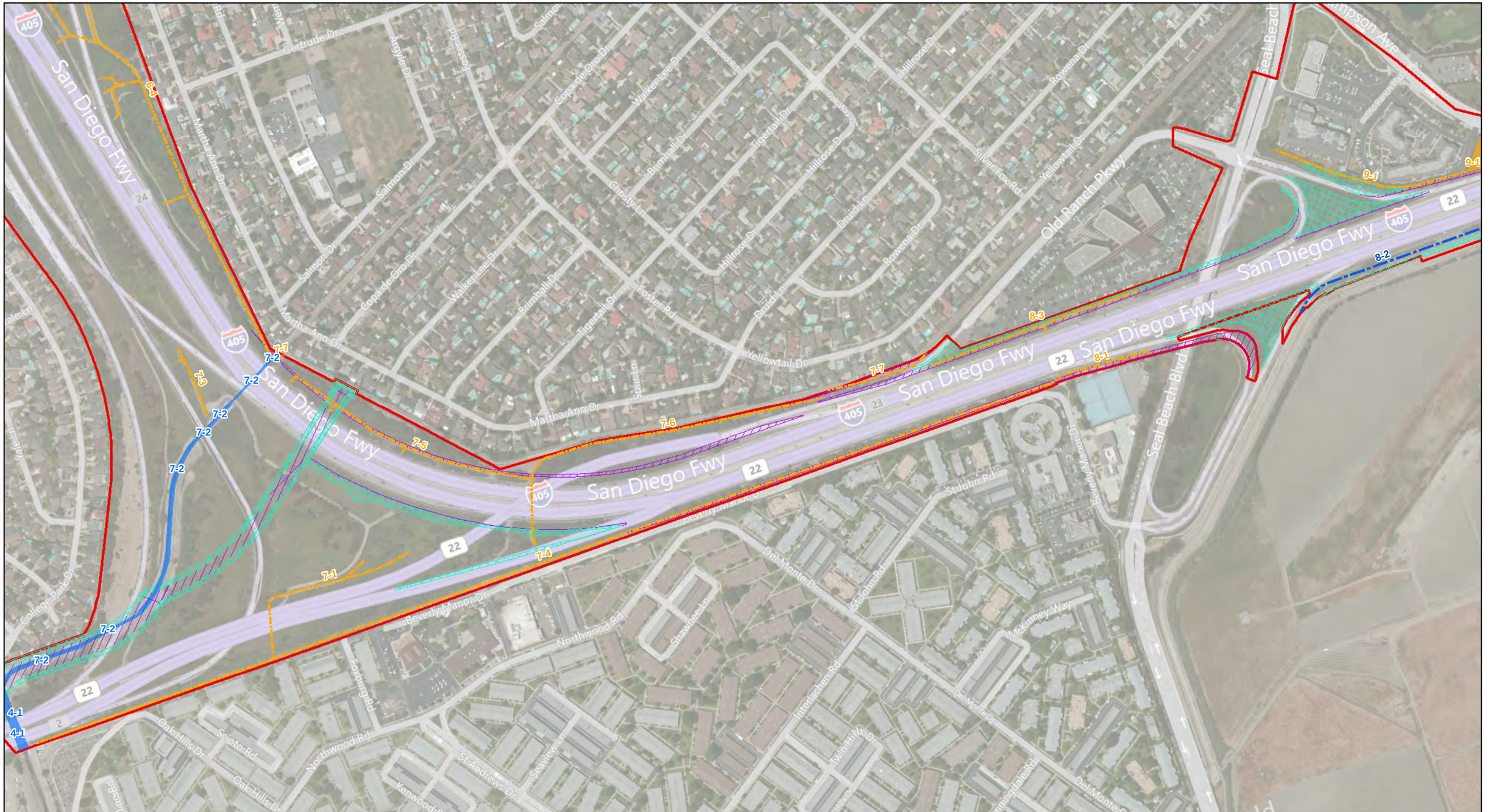
USACE, RWQCB, CDFG
Drainage Exhibit
Alternative 1
March 2012
Figure 1-12

Study Area
Alternative 1 Temporary Impact
Alternative 1 Permanent Impact
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

USACE, RWQCB, CDFG
Drainage Exhibit
Alternative 1
March 2012
Figure 1-13

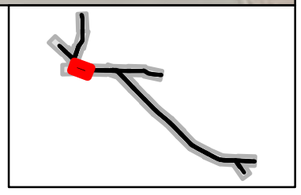


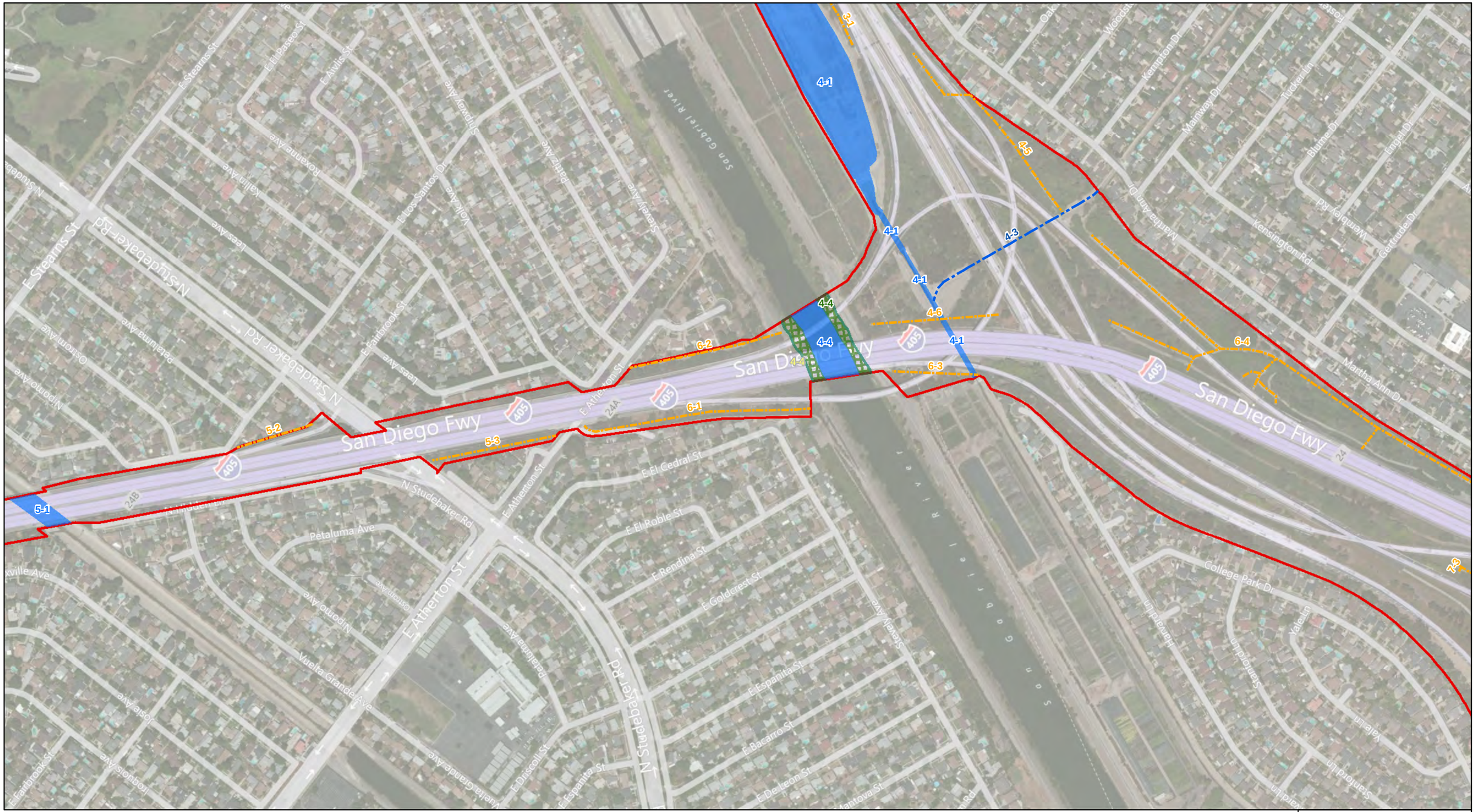


Study Area
Alternative 1 Temporary Impact
Alternative 1 Permanent Impact
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

USACE, RWQCB, CDFG
Drainage Exhibit
Alternative 1
March 2012
Figure 1-14

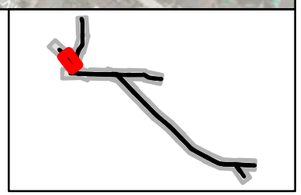




Study Area
Alternative 1 Temporary Impact
Alternative 1 Permanent Impact
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

USACE, RWQCB, CDFG
Drainage Exhibit
Alternative 1
March 2012
Figure 1-15



Study Area
Alternative 1 Temporary Impact
Alternative 1 Permanent Impact
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

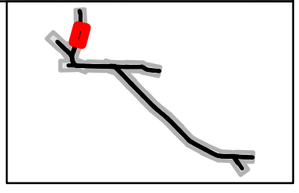
0 250 500 1,000 Feet

USACE, RWQCB, CDFG
Drainage Exhibit
Alternative 1
March 2012
Figure 1-16

Study Area
Alternative 1 Temporary Impact
Alternative 1 Permanent Impact
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

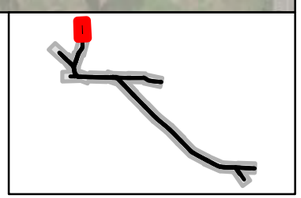
USACE, RWQCB, CDFG
Drainage Exhibit
Alternative 1
March 2012
Figure 1-17



Study Area
Alternative 1 Temporary Impact
Alternative 1 Permanent Impact
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

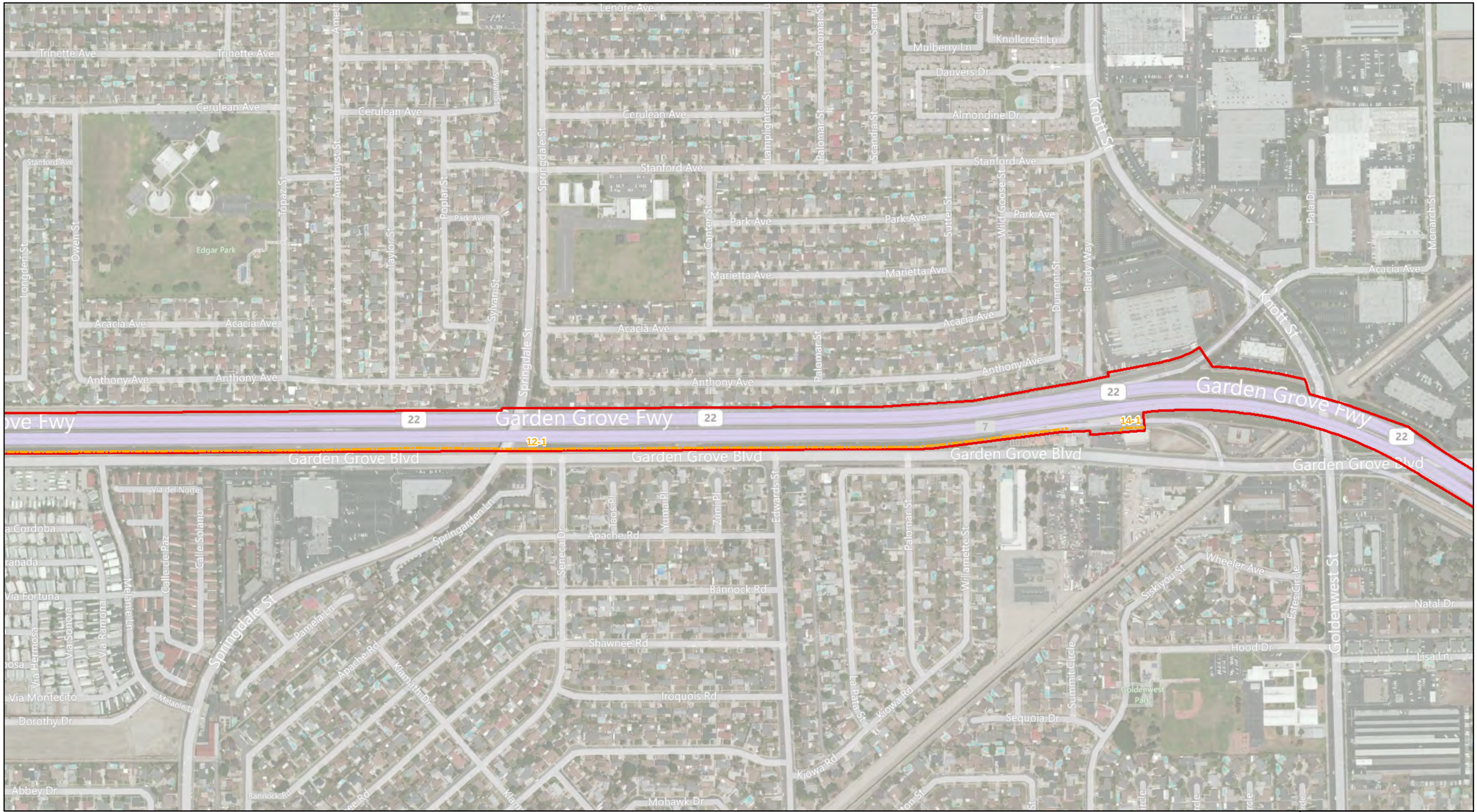
USACE, RWQCB, CDFG
Drainage Exhibit
Alternative 1
March 2012
Figure 1-18



Study Area
Alternative 1 Temporary Impact
Alternative 1 Permanent Impact
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

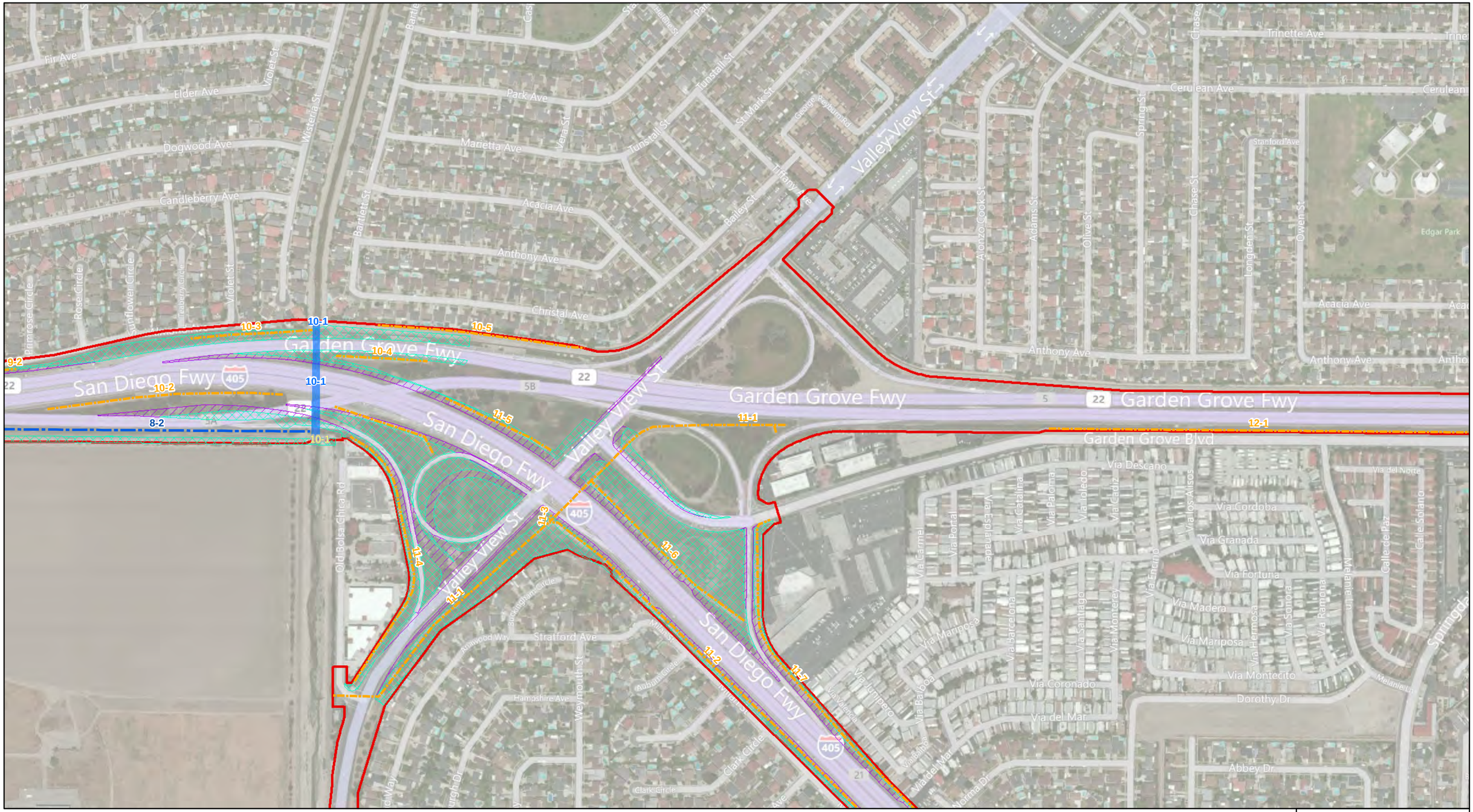
USACE, RWQCB, CDFG
Drainage Exhibit
Alternative 1
March 2012
Figure 1-19



Study Area
Alternative 1 Temporary Impact
Alternative 1 Permanent Impact
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

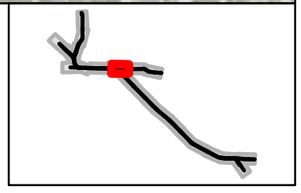
USACE, RWQCB, CDFG
Drainage Exhibit
Alternative 1
March 2012
Figure 1-20



Study Area
Alternative 1 Temporary Impact
Alternative 1 Permanent Impact
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

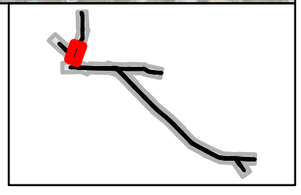
USACE, RWQCB, CDFG
Drainage Exhibit
Alternative 1
March 2012
Figure 1-21

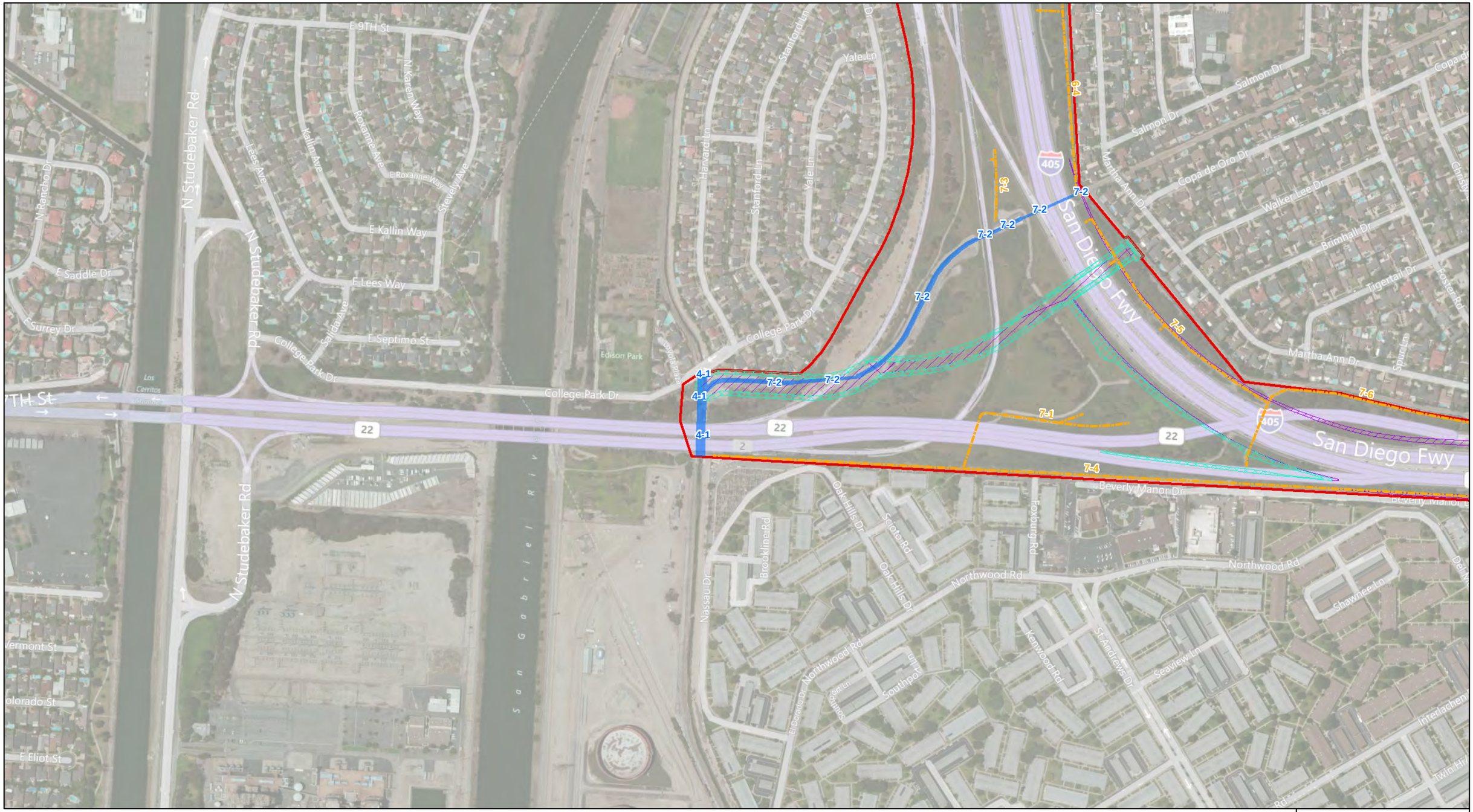


Study Area
Alternative 1 Temporary Impact
Alternative 1 Permanent Impact
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

USACE, RWQCB, CDFG
Drainage Exhibit
Alternative 1
March 2012
Figure 1-22

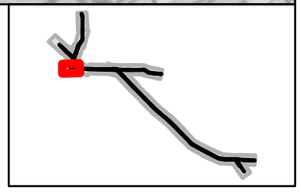


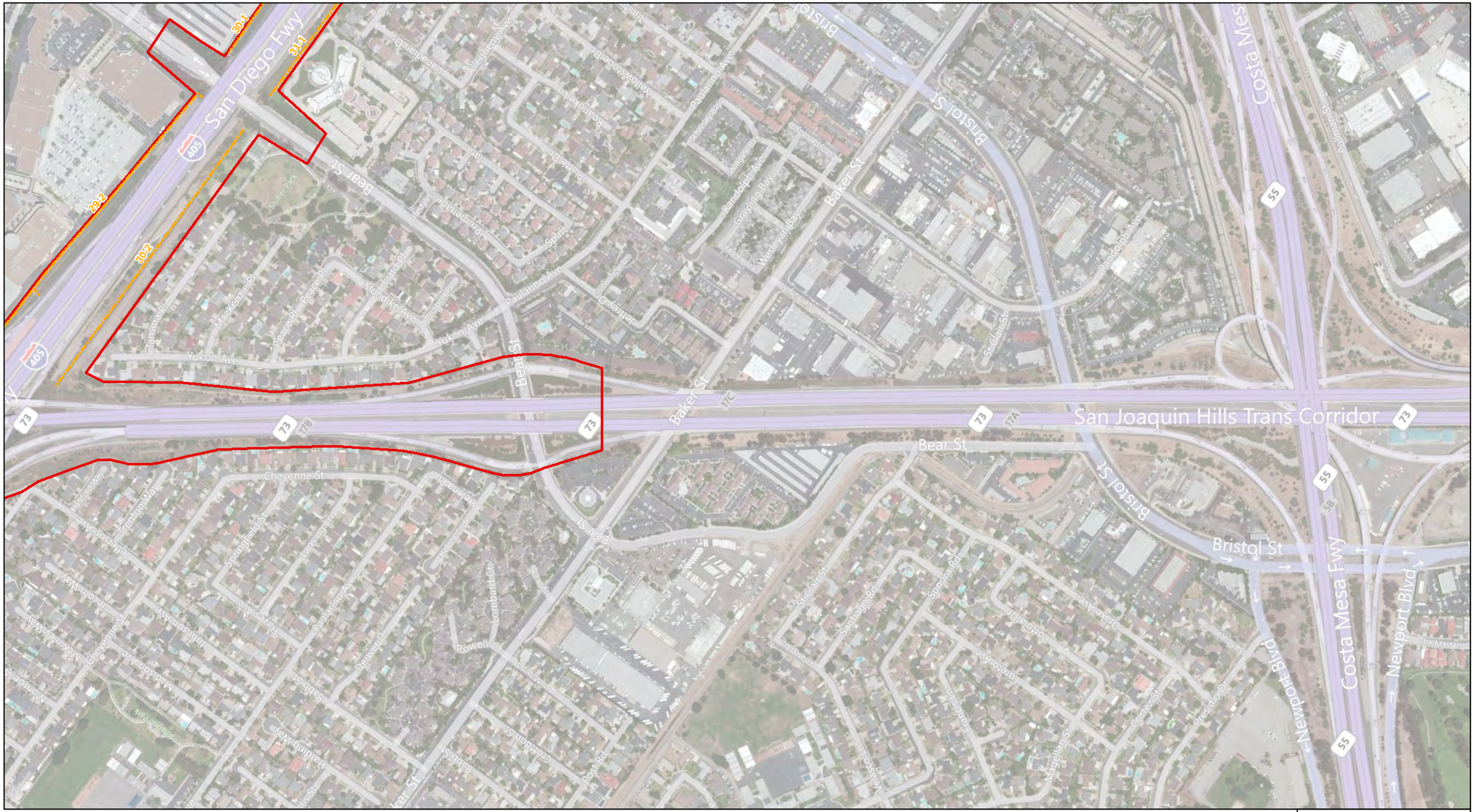


Study Area
Alternative 1 Temporary Impact
Alternative 1 Permanent Impact
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

USACE, RWQCB, CDFG
Drainage Exhibit
Alternative 1
March 2012
Figure 1-23

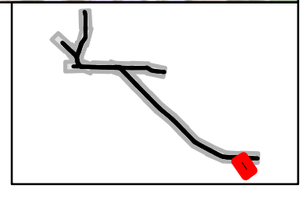


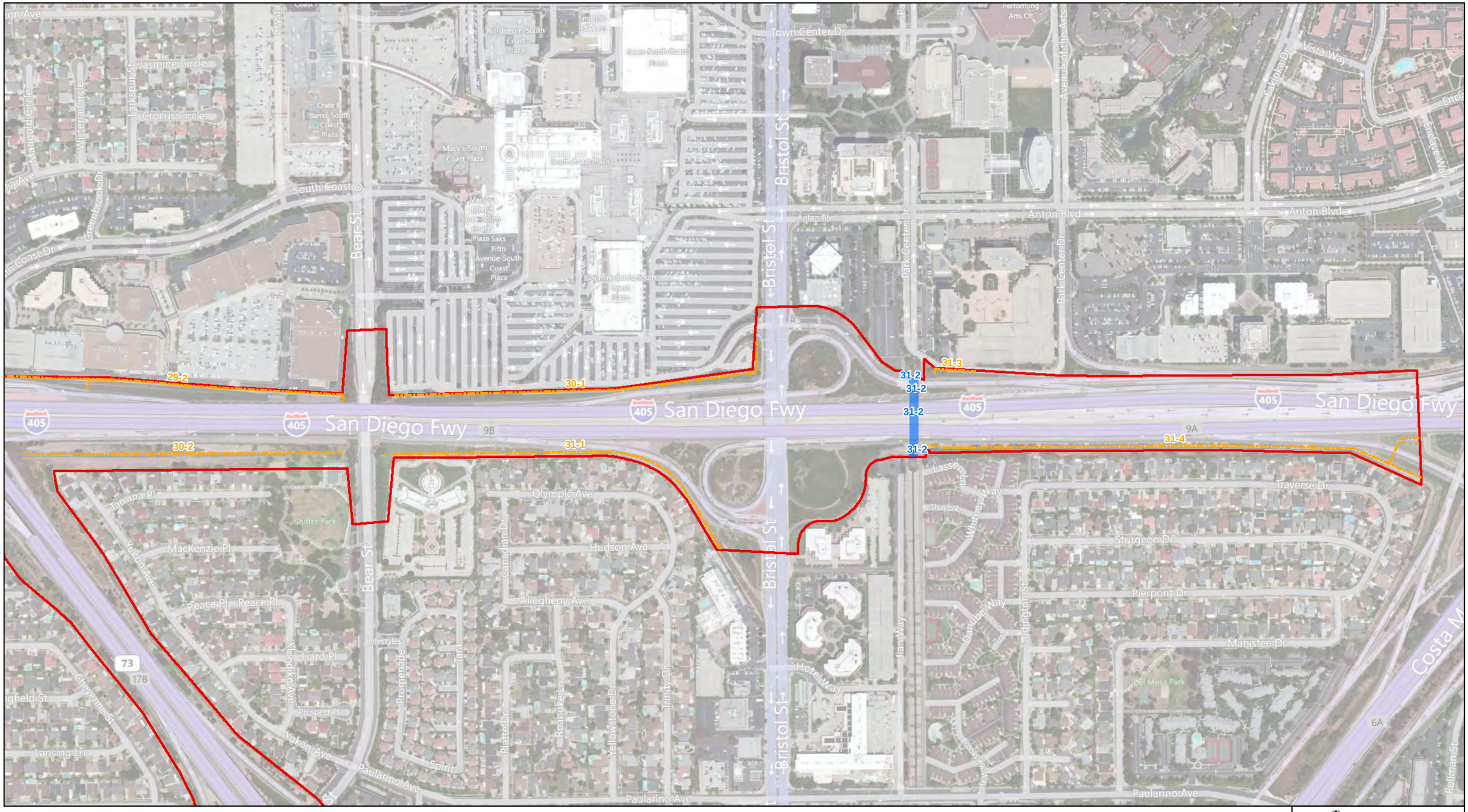


Study Area
Alternative 2 Temporary Impact
Alternative 2 Permanent Impact
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

USACE, RWQCB, CDFG
Drainage Exhibit
Alternative 2
March 2012
Figure 2-1



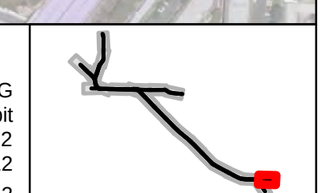


Study Area
Alternative 2 Temporary Impact
Alternative 2 Permanent Impact
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

USACE, RWQCB, CDFG
Drainage Exhibit
Alternative 2
March 2012

Figure 2-2

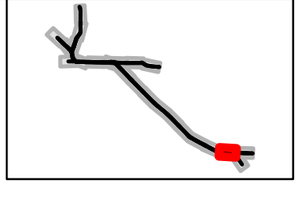


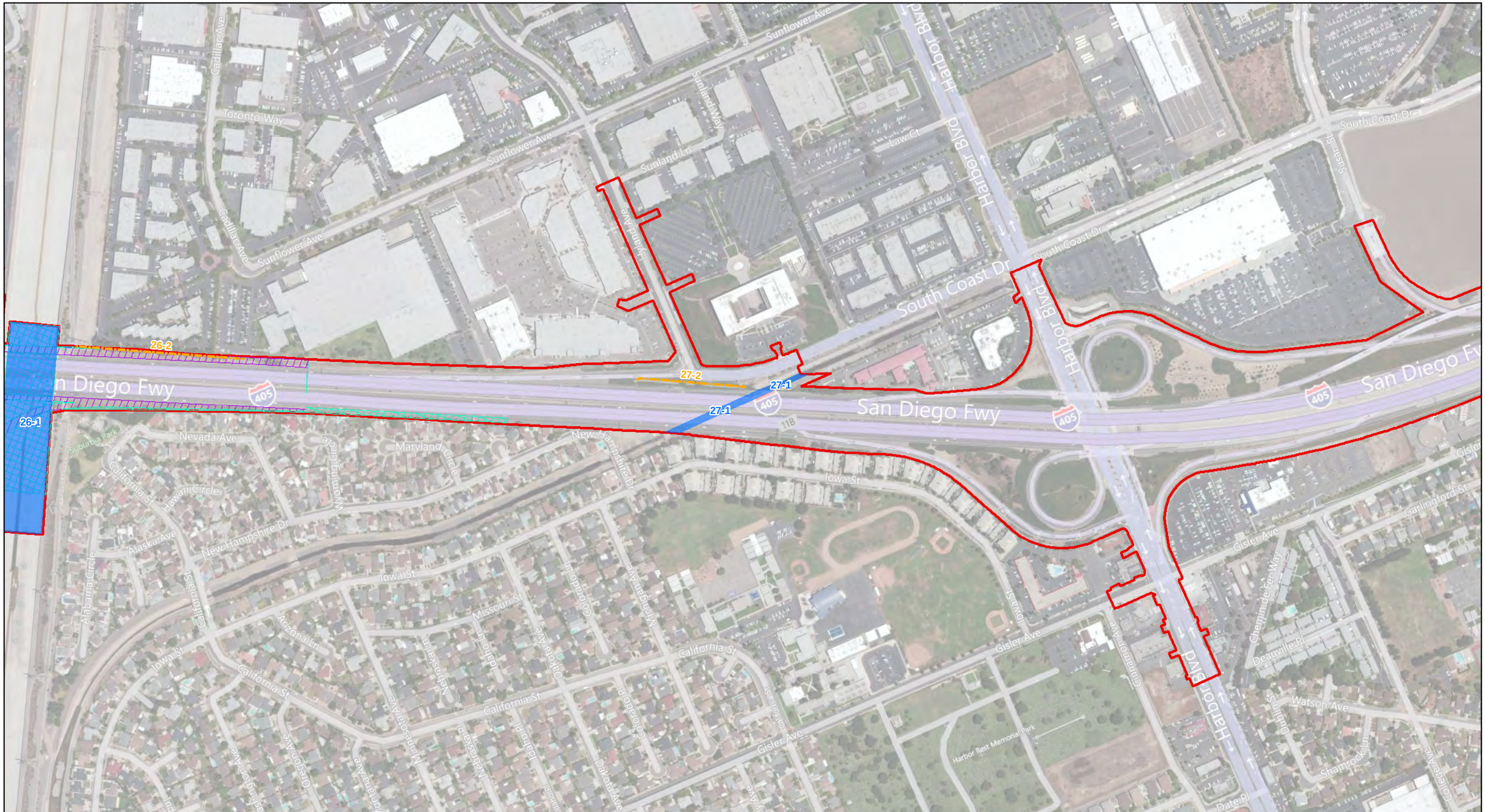
Study Area
Alternative 2 Temporary Impact
Alternative 2 Permanent Impact
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

USACE, RWQCB, CDFG
Drainage Exhibit
Alternative 2
March 2012

Figure 2-3

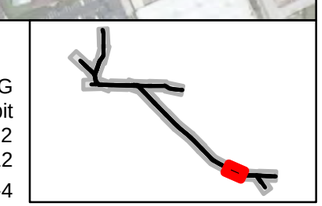




Study Area
Alternative 2 Temporary Impact
Alternative 2 Permanent Impact
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

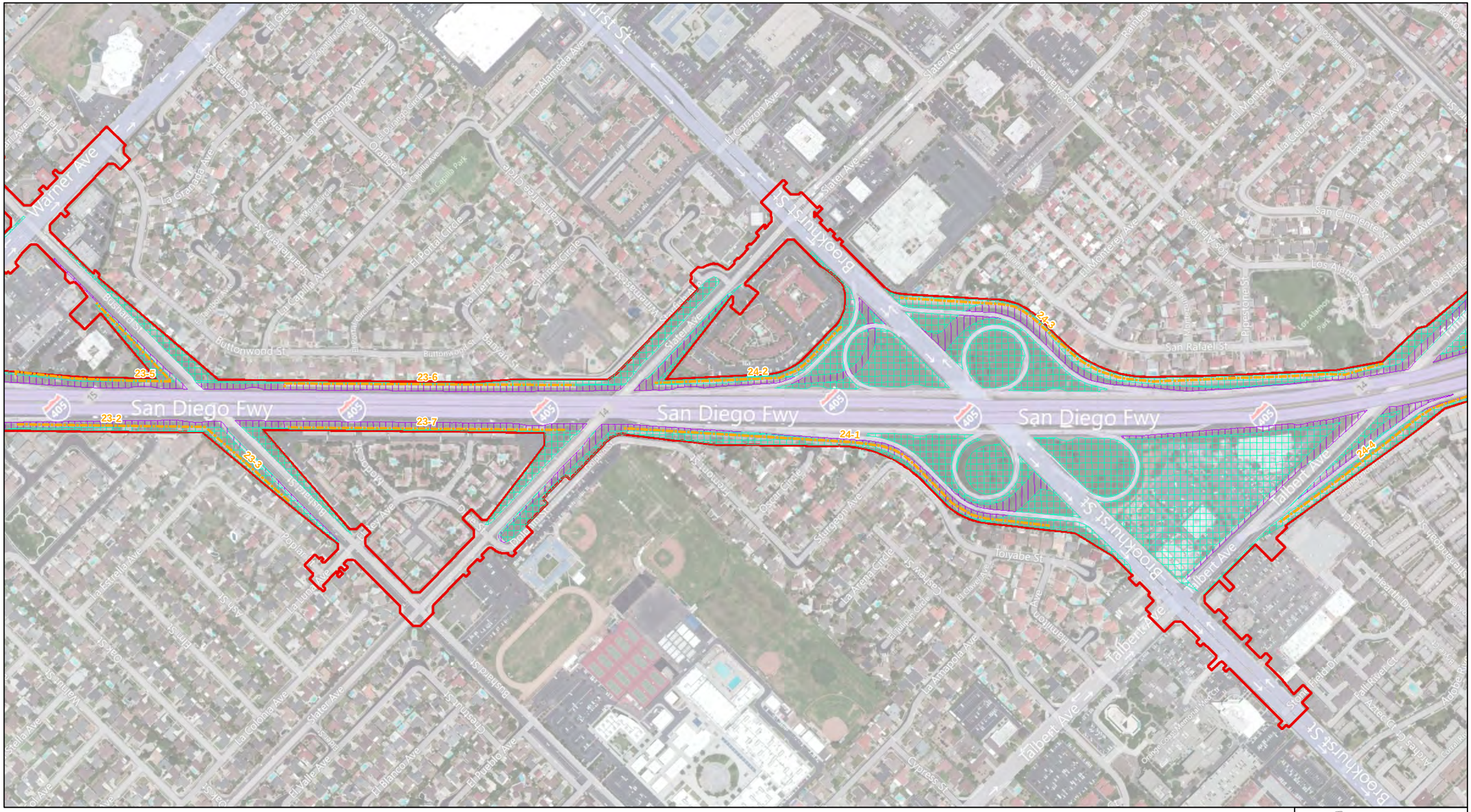
USACE, RWQCB, CDFG
Drainage Exhibit
Alternative 2
March 2012
Figure 2-4



Study Area
Alternative 2 Temporary Impact
Alternative 2 Permanent Impact
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

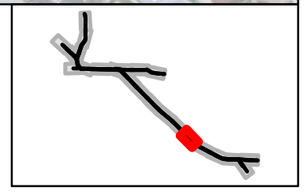
USACE, RWQCB, CDFG
Drainage Exhibit
Alternative 2
March 2012
Figure 2-5

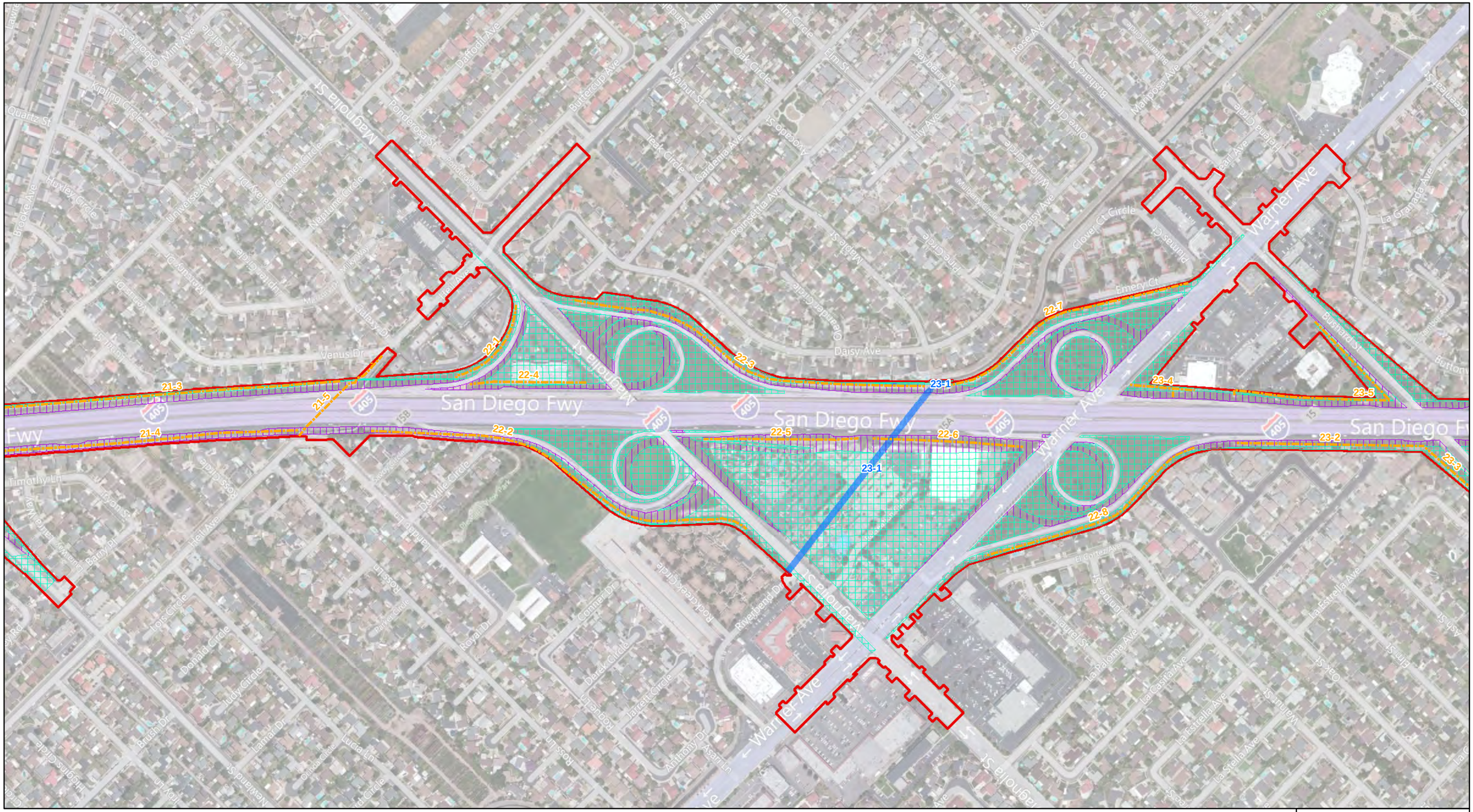


Study Area
Alternative 2 Temporary Impact
Alternative 2 Permanent Impact
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

USACE, RWQCB, CDFG
Drainage Exhibit
Alternative 2
March 2012
Figure 2-6

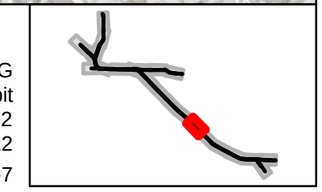


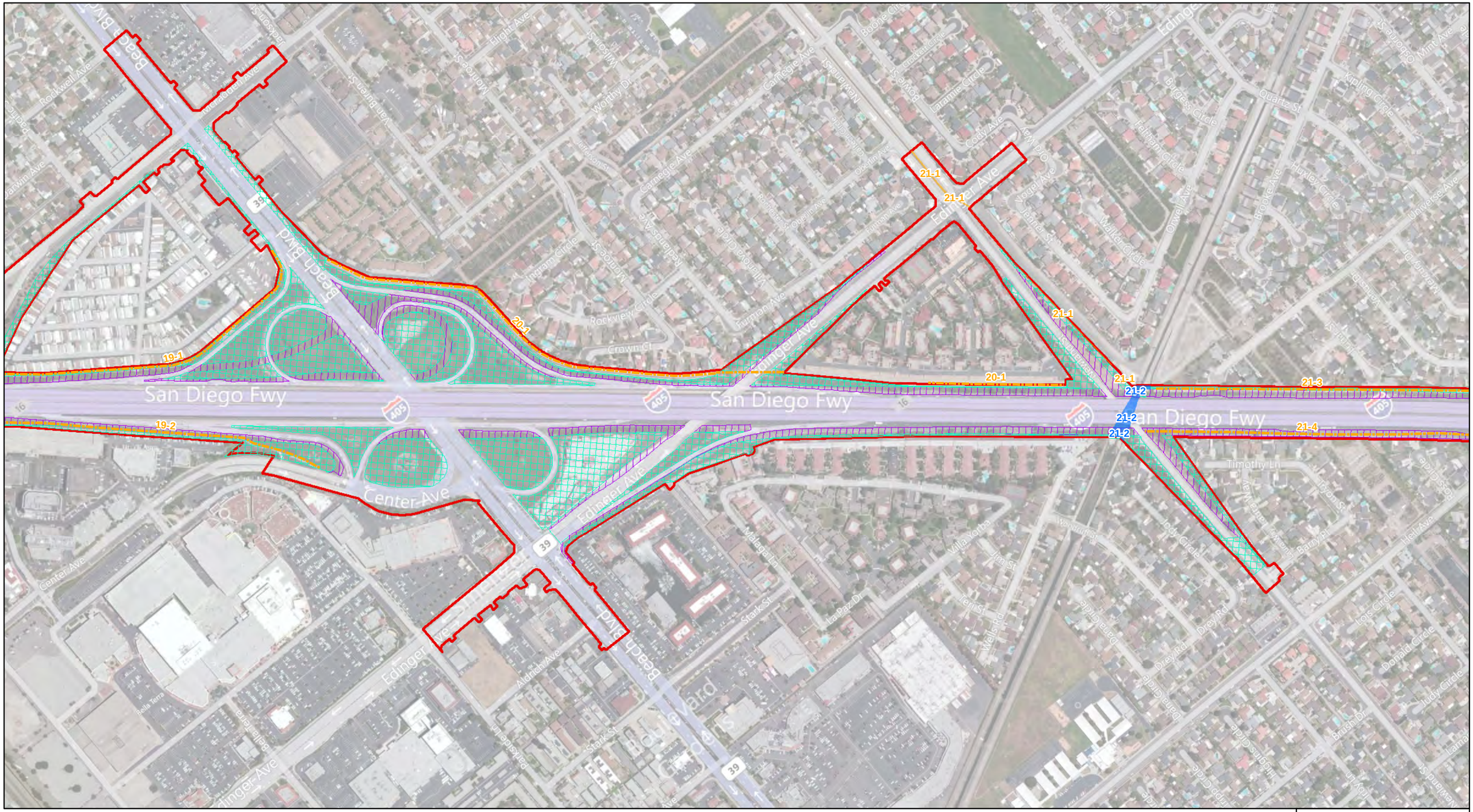


Study Area
Alternative 2 Temporary Impact
Alternative 2 Permanent Impact
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

USACE, RWQCB, CDFG
Drainage Exhibit
Alternative 2
March 2012
Figure 2-7



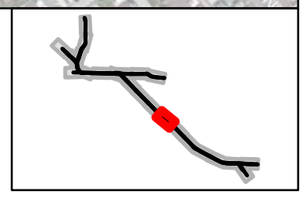


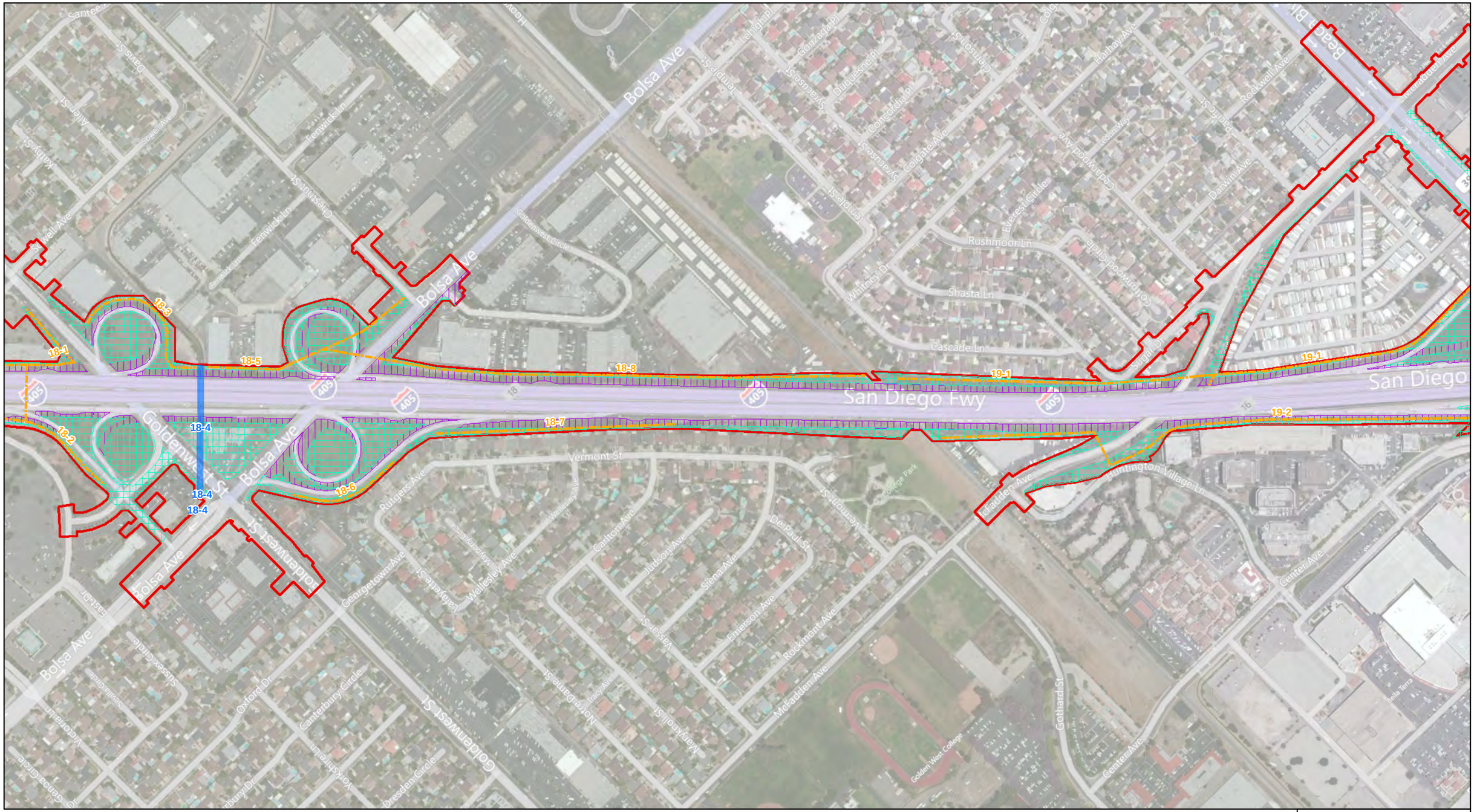
Study Area
Alternative 2 Temporary Impact
Alternative 2 Permanent Impact
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

USACE, RWQCB, CDFG
Drainage Exhibit
Alternative 2
March 2012

Figure 2-8



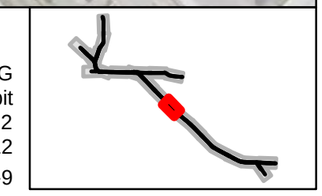


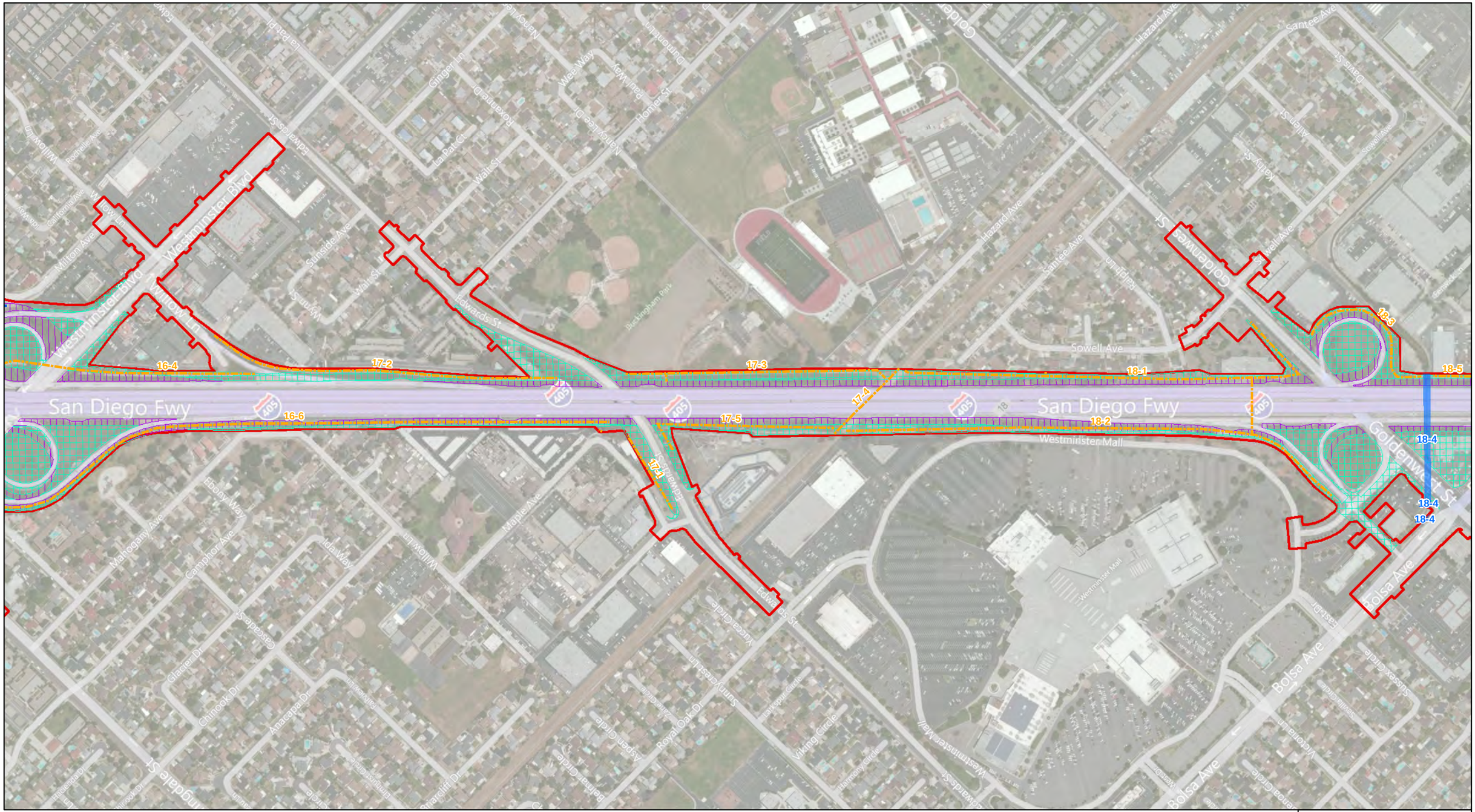
Study Area
Alternative 2 Temporary Impact
Alternative 2 Permanent Impact
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

USACE, RWQCB, CDFG
Drainage Exhibit
Alternative 2
March 2012

Figure 2-9





Study Area
Alternative 2 Temporary Impact
Alternative 2 Permanent Impact
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

USACE, RWQCB, CDFG
Drainage Exhibit
Alternative 2
March 2012
Figure 2-10

Study Area
Alternative 2 Temporary Impact
Alternative 2 Permanent Impact
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

USACE, RWQCB, CDFG
Drainage Exhibit
Alternative 2
March 2012
Figure 2-11

Study Area
Alternative 2 Temporary Impact
Alternative 2 Permanent Impact
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

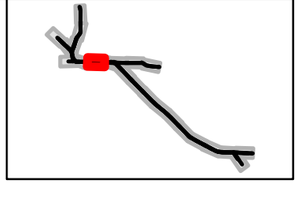
0 250 500 1,000 Feet

USACE, RWQCB, CDFG
Drainage Exhibit
Alternative 2
March 2012
Figure 2-12

Study Area
Alternative 2 Temporary Impact
Alternative 2 Permanent Impact
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

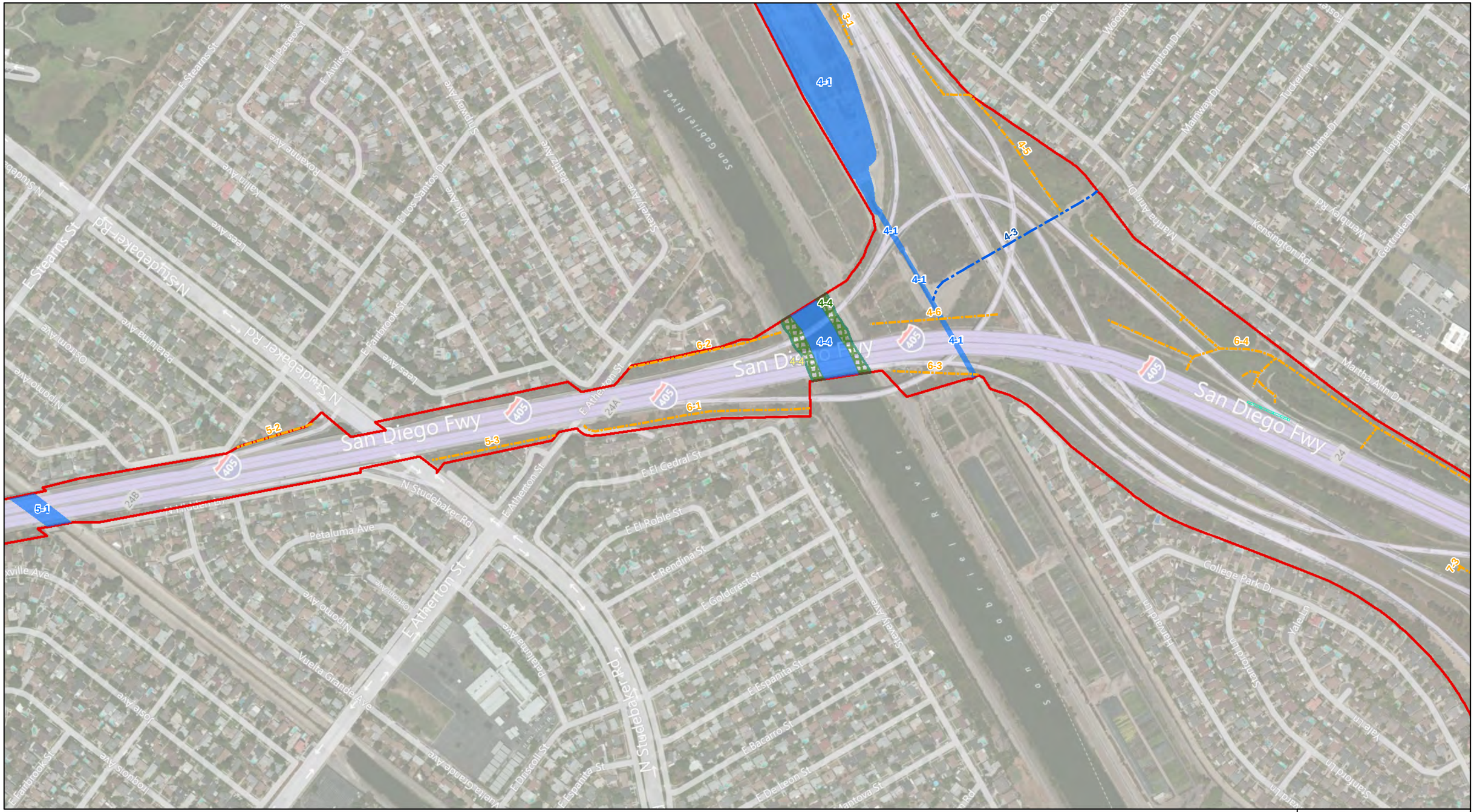
USACE, RWQCB, CDFG
Drainage Exhibit
Alternative 2
March 2012
Figure 2-13



Study Area
Alternative 2 Temporary Impact
Alternative 2 Permanent Impact
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

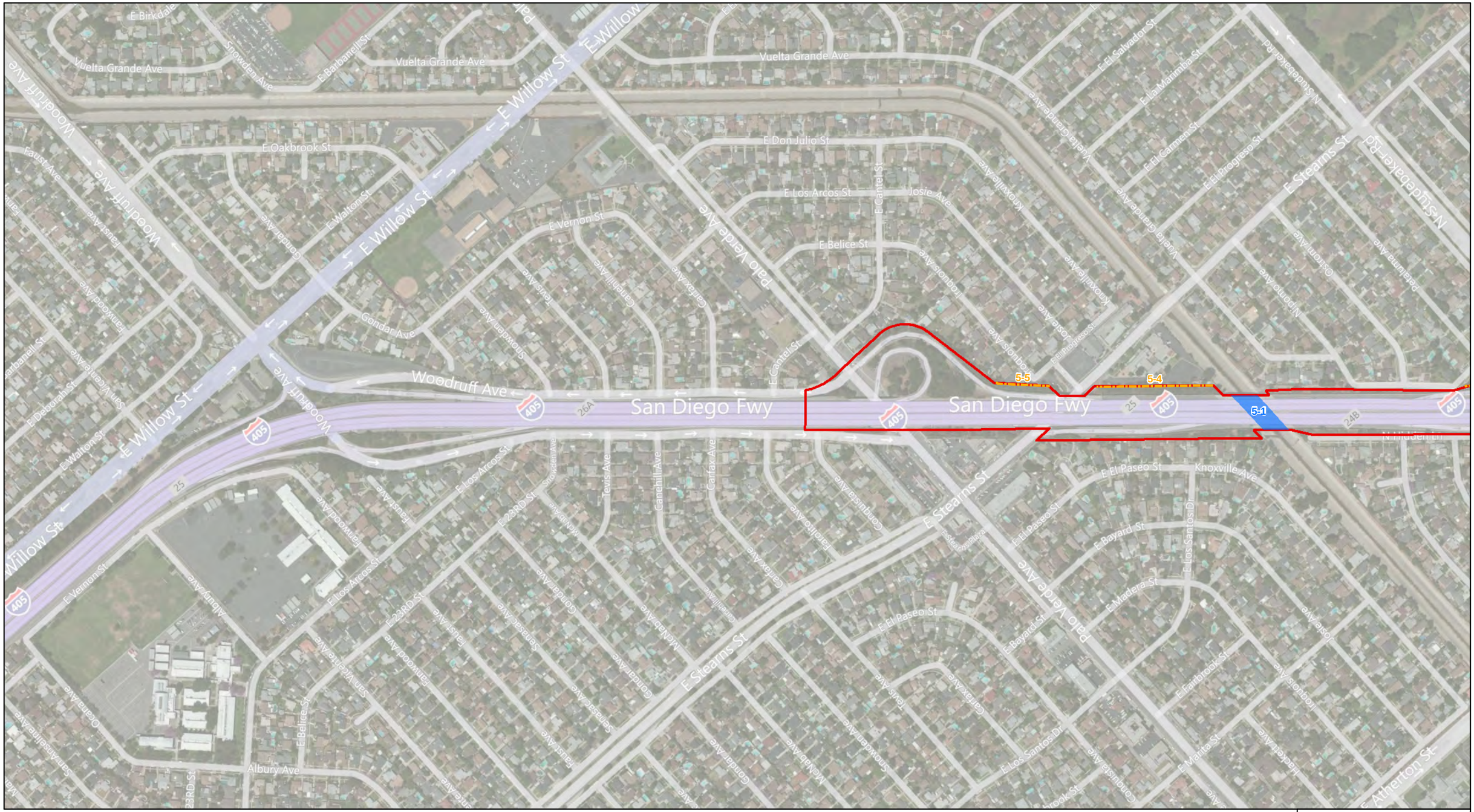
USACE, RWQCB, CDFG
Drainage Exhibit
Alternative 2
March 2012
Figure 2-14



Study Area
Alternative 2 Temporary Impact
Alternative 2 Permanent Impact
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

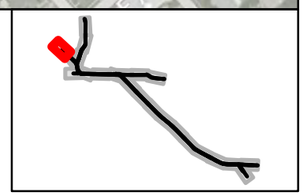
USACE, RWQCB, CDFG
Drainage Exhibit
Alternative 2
March 2012
Figure 2-15



Study Area
Alternative 2 Temporary Impact
Alternative 2 Permanent Impact
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

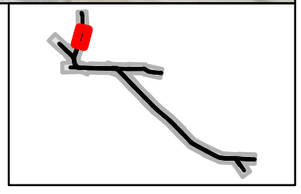
USACE, RWQCB, CDFG
Drainage Exhibit
Alternative 2
March 2012
Figure 2-16



Study Area
Alternative 2 Temporary Impact
Alternative 2 Permanent Impact
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

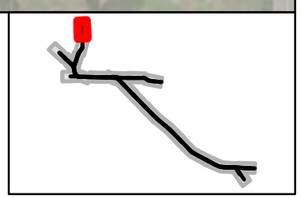
USACE, RWQCB, CDFG
Drainage Exhibit
Alternative 2
March 2012
Figure 2-17



Study Area
Alternative 2 Temporary Impact
Alternative 2 Permanent Impact
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

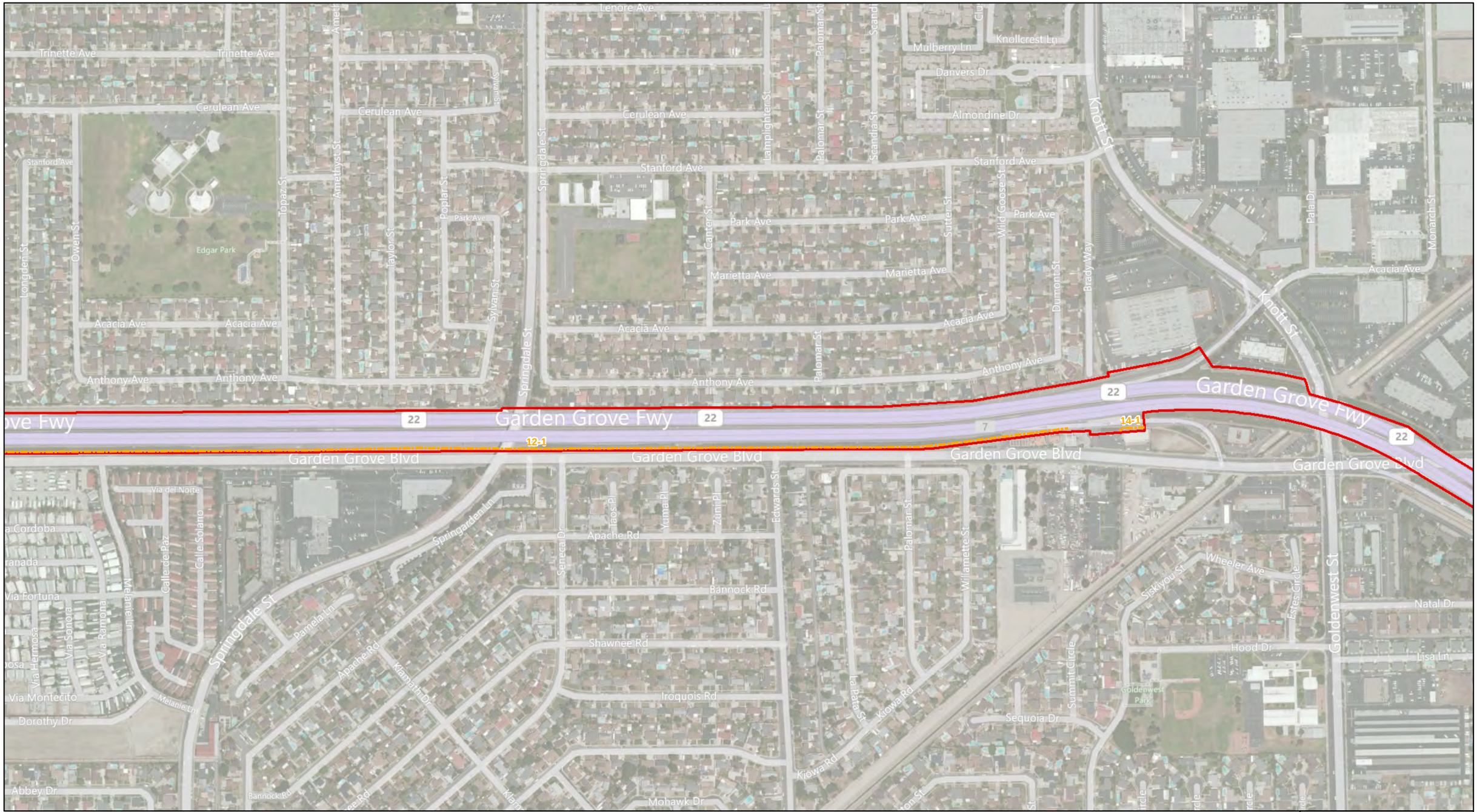
USACE, RWQCB, CDFG
Drainage Exhibit
Alternative 2
March 2012
Figure 2-18



Study Area
Alternative 2 Temporary Impact
Alternative 2 Permanent Impact
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

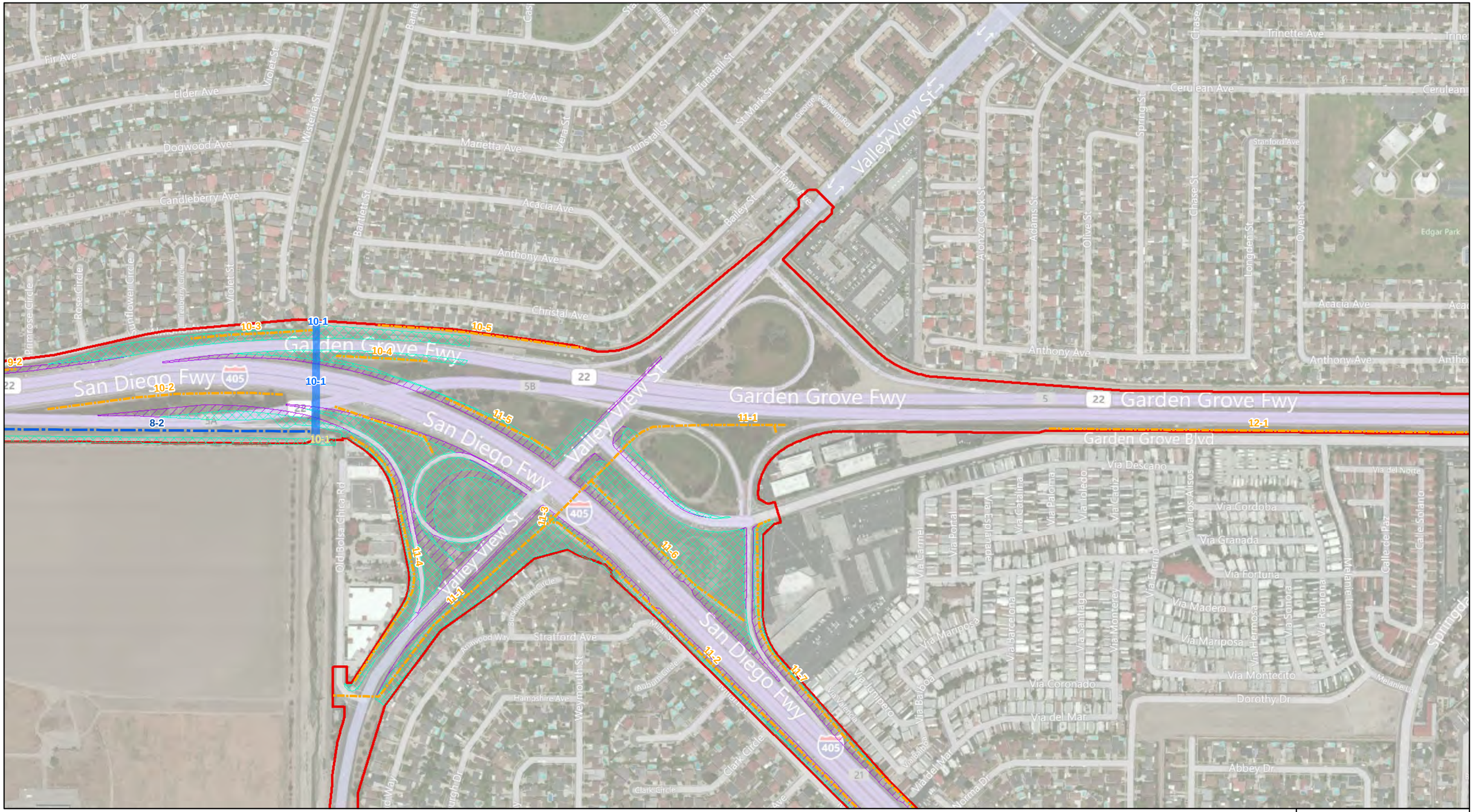
USACE, RWQCB, CDFG
Drainage Exhibit
Alternative 2
March 2012
Figure 2-19



Study Area
Alternative 2 Temporary Impact
Alternative 2 Permanent Impact
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

USACE, RWQCB, CDFG
Drainage Exhibit
Alternative 2
March 2012
Figure 2-20



Study Area
Alternative 2 Temporary Impact
Alternative 2 Permanent Impact
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

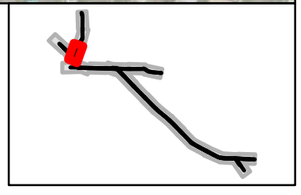
0 250 500 1,000 Feet

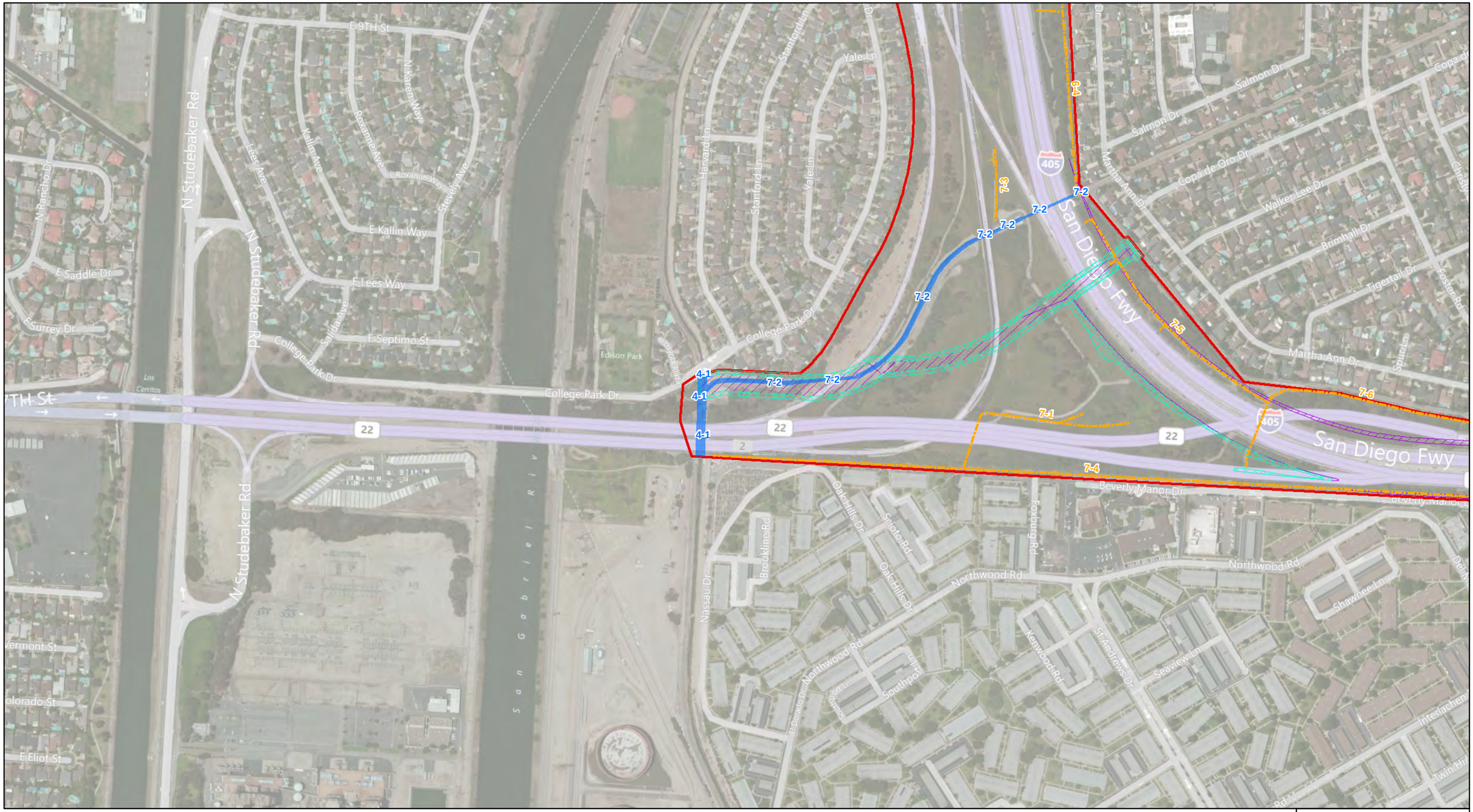
USACE, RWQCB, CDFG
Drainage Exhibit
Alternative 2
March 2012
Figure 2-21

Study Area
Alternative 2 Temporary Impact
Alternative 2 permanent Impact
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

USACE, RWQCB, CDFG
Drainage Exhibit
Alternative 2
March 2012
Figure 2-22

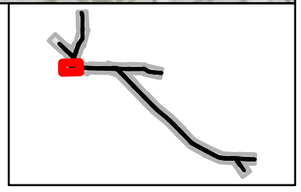


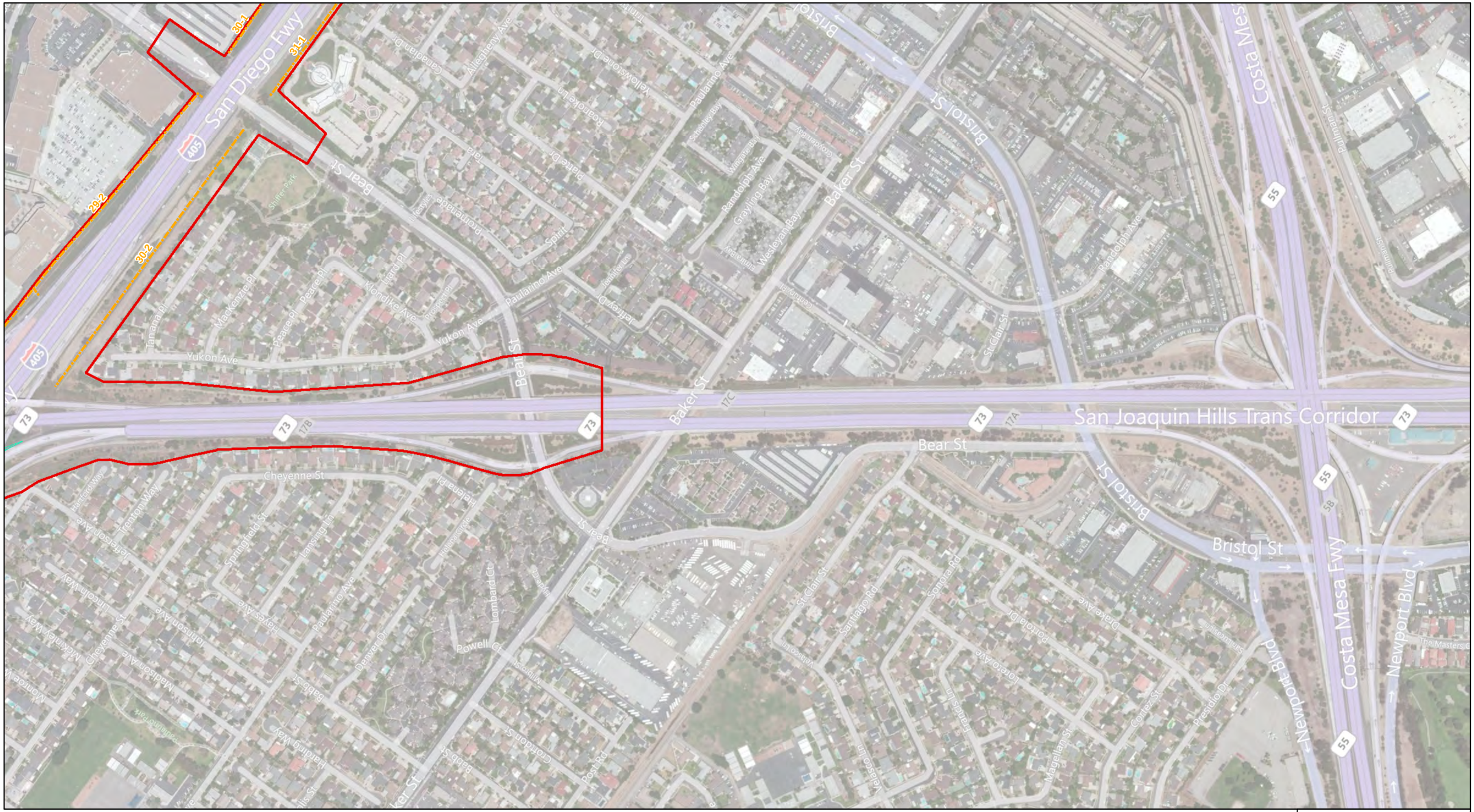


Study Area
Alternative 2 Temporary Impact
Alternative 2 Permanent Impact
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

USACE, RWQCB, CDFG
Drainage Exhibit
Alternative 2
March 2012
Figure 2-23

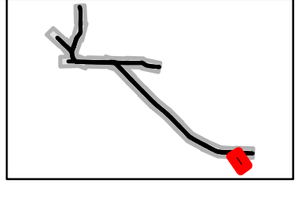


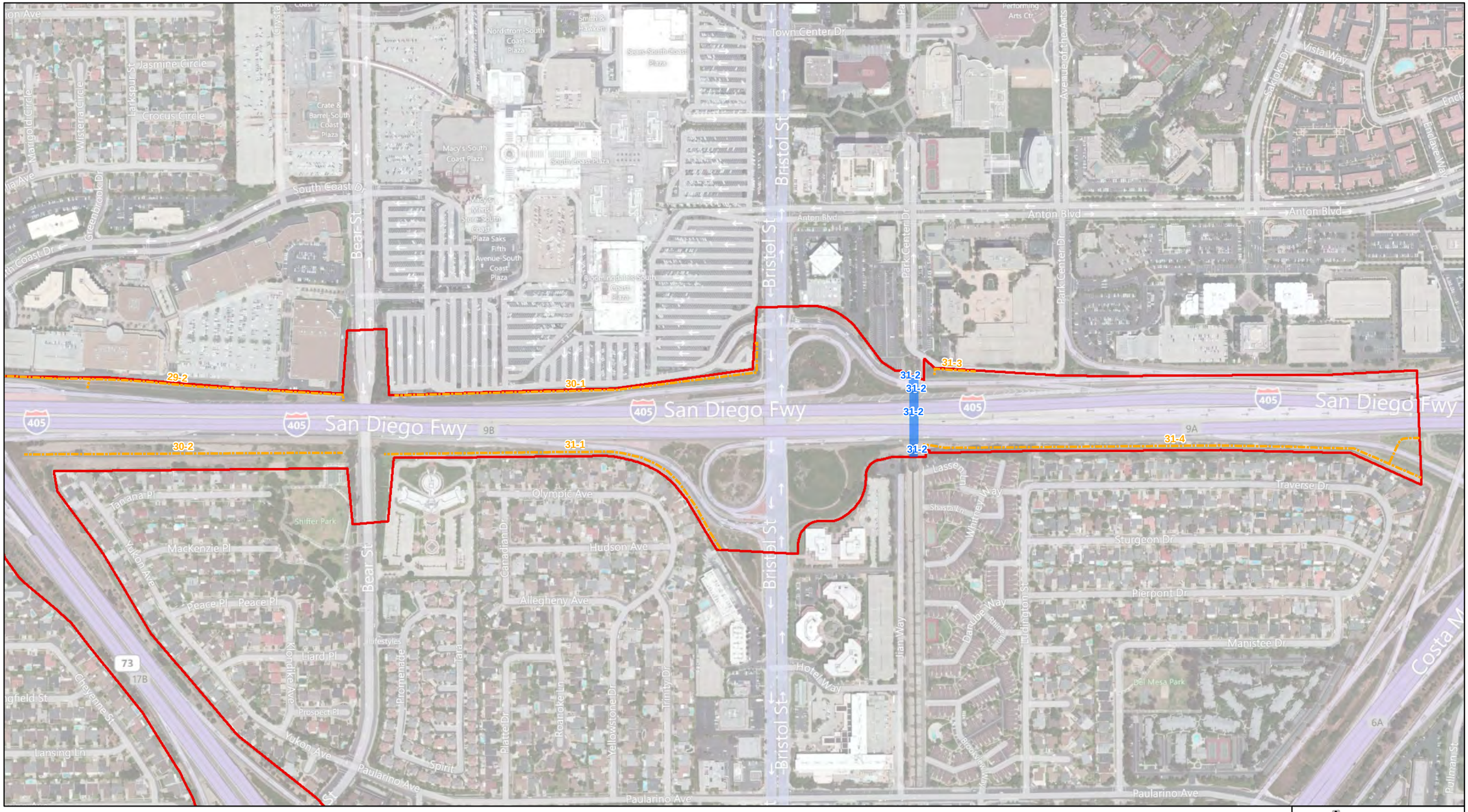


Study Area
Alternative 3 Temporary Impact
Alternative 3 Permanent Impact
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

USACE, RWQCB, CDFG
Drainage Exhibit
Alternative 3
March 2012
Figure 3-1



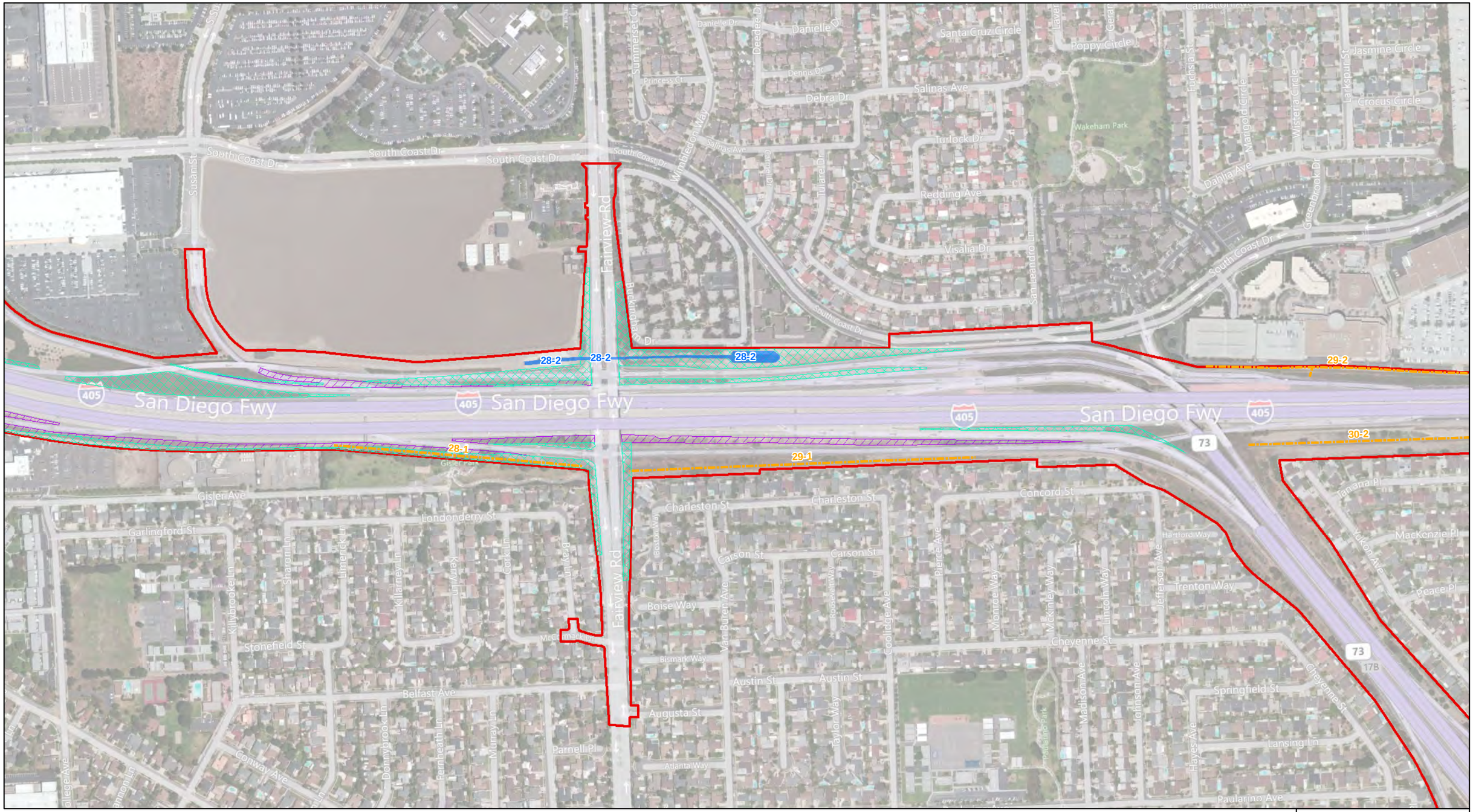


Study Area
Alternative 3 Temporary Impact
Alternative 3 Permanent Impact
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

USACE, RWQCB, CDFG
Drainage Exhibit
Alternative 3
March 2012

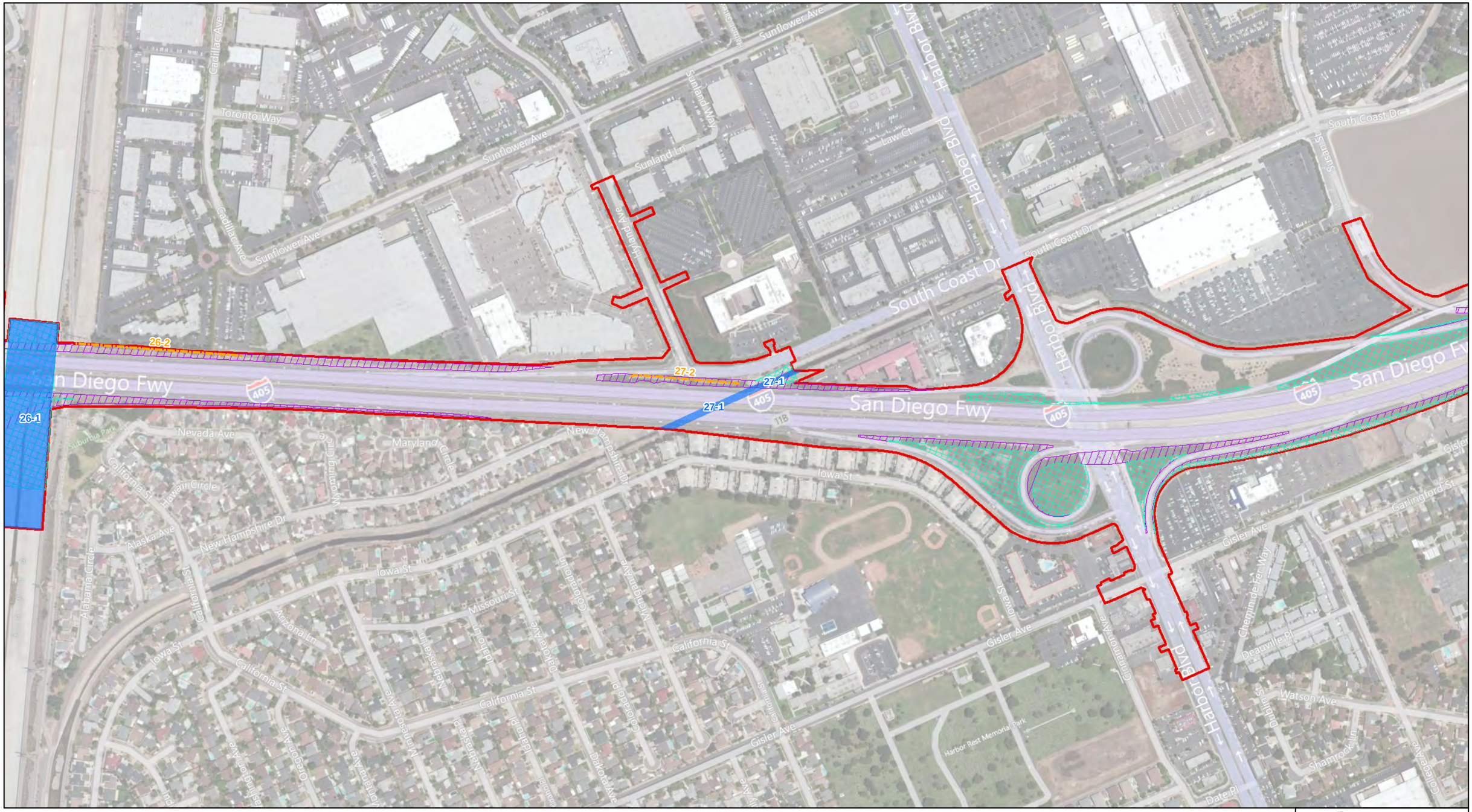
Figure 3-2



Study Area
Alternative 3 Temporary Impact
Alternative 3 Permanent Impact
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

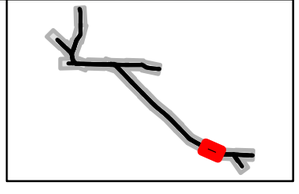
USACE, RWQCB, CDFG
Drainage Exhibit
Alternative 3
March 2012
Figure 3-3



Study Area
Alternative 3 Temporary Impact
Alternative 3 Permanent Impact
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

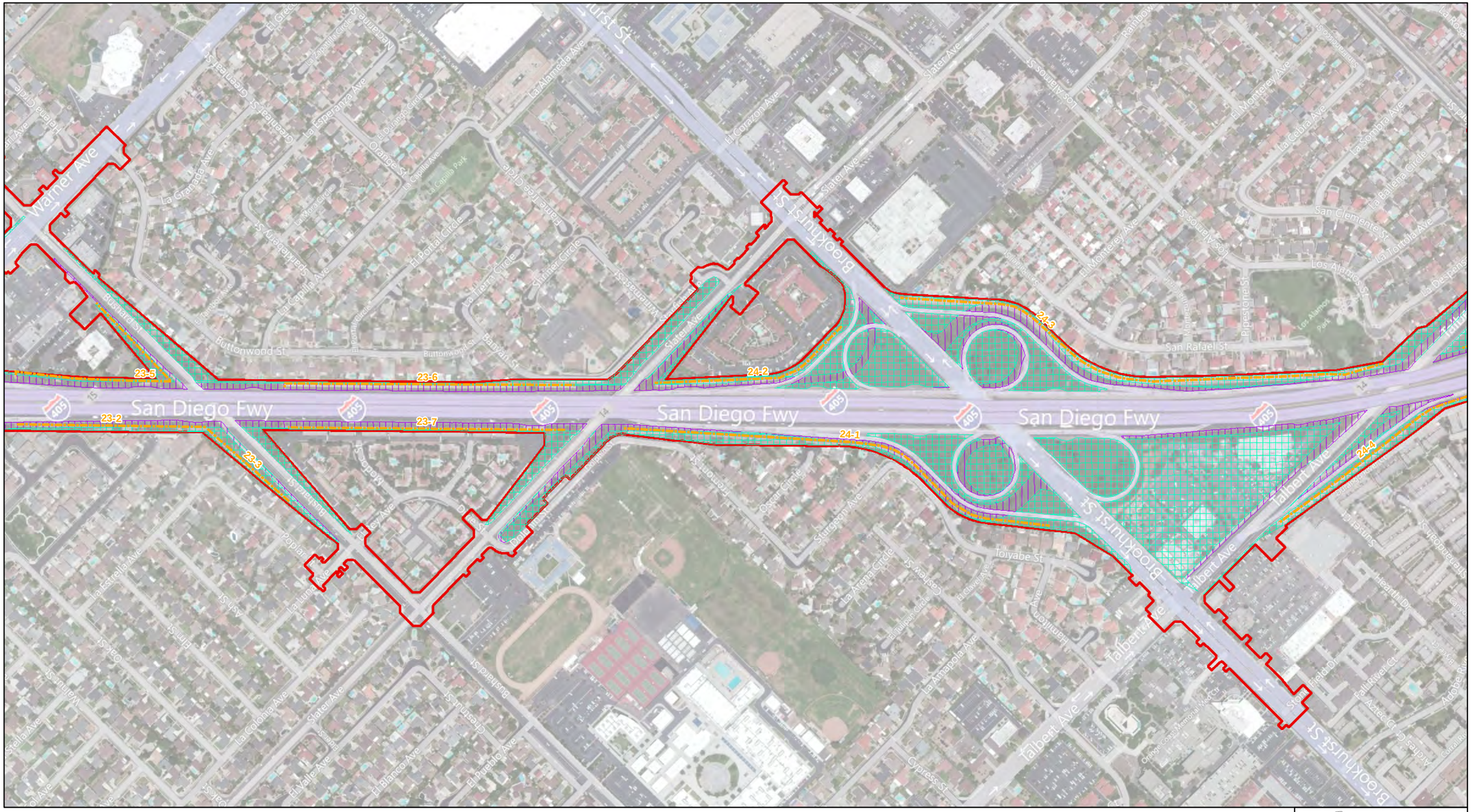
USACE, RWQCB, CDFG
Drainage Exhibit
Alternative 3
March 2012
Figure 3-4



Study Area
Alternative 3 Temporary Impact
Alternative 3 Permanent Impact
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

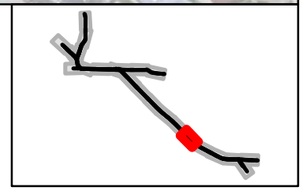
USACE, RWQCB, CDFG
Drainage Exhibit
Alternative 3
March 2012
Figure 3-5



Study Area
Alternative 3 Temporary Impact
Alternative 3 Permanent Impact
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

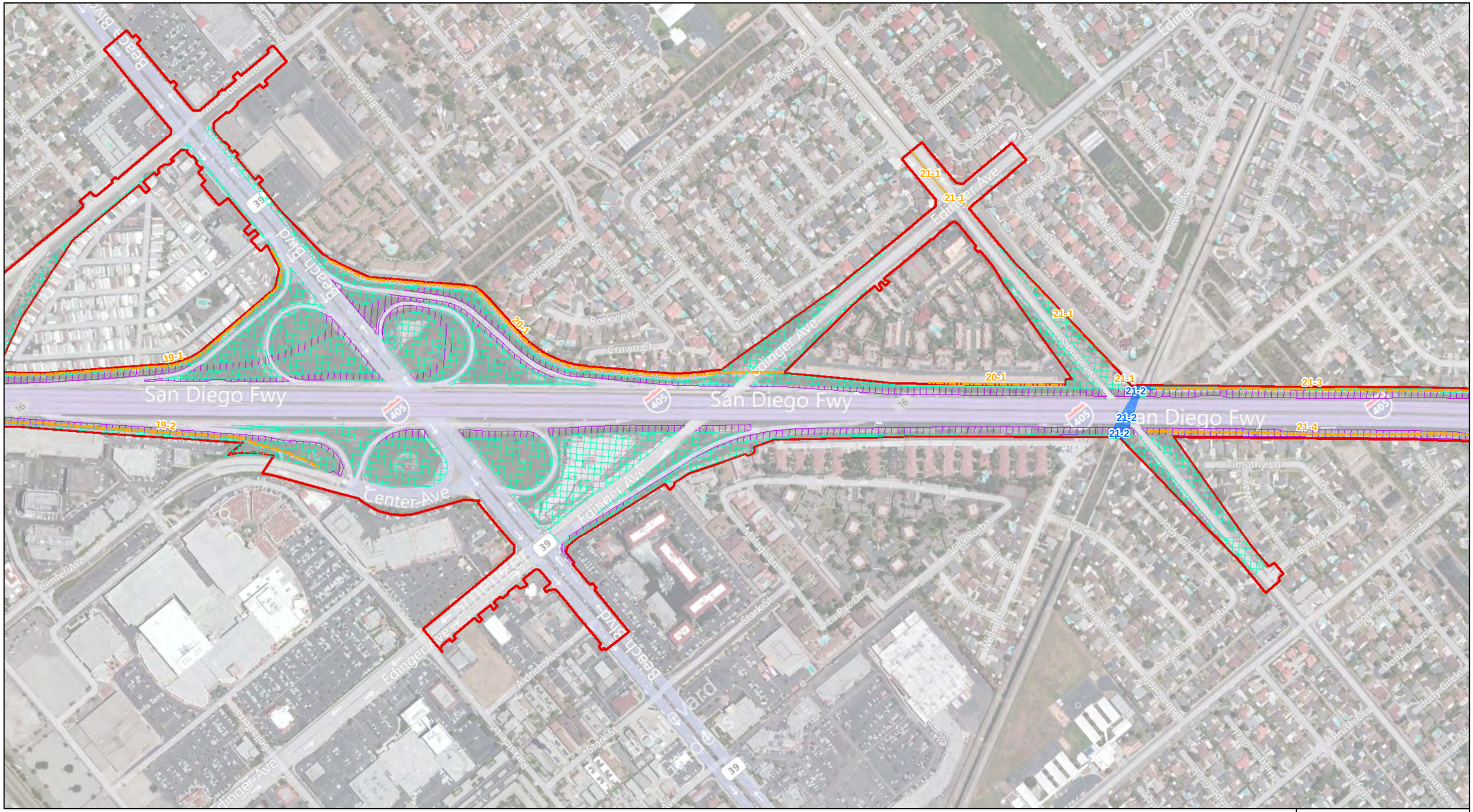
USACE, RWQCB, CDFG
Drainage Exhibit
Alternative 3
March 2012
Figure 3-6



Study Area
Alternative 3 Temporary Impact
Alternative 3 Permanent Impact
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

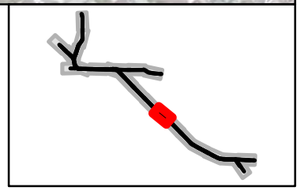
USACE, RWQCB, CDFG
Drainage Exhibit
Alternative 3
March 2012
Figure 3-7



Study Area
Alternative 3 Temporary Impact
Alternative 3 Permanent Impact
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

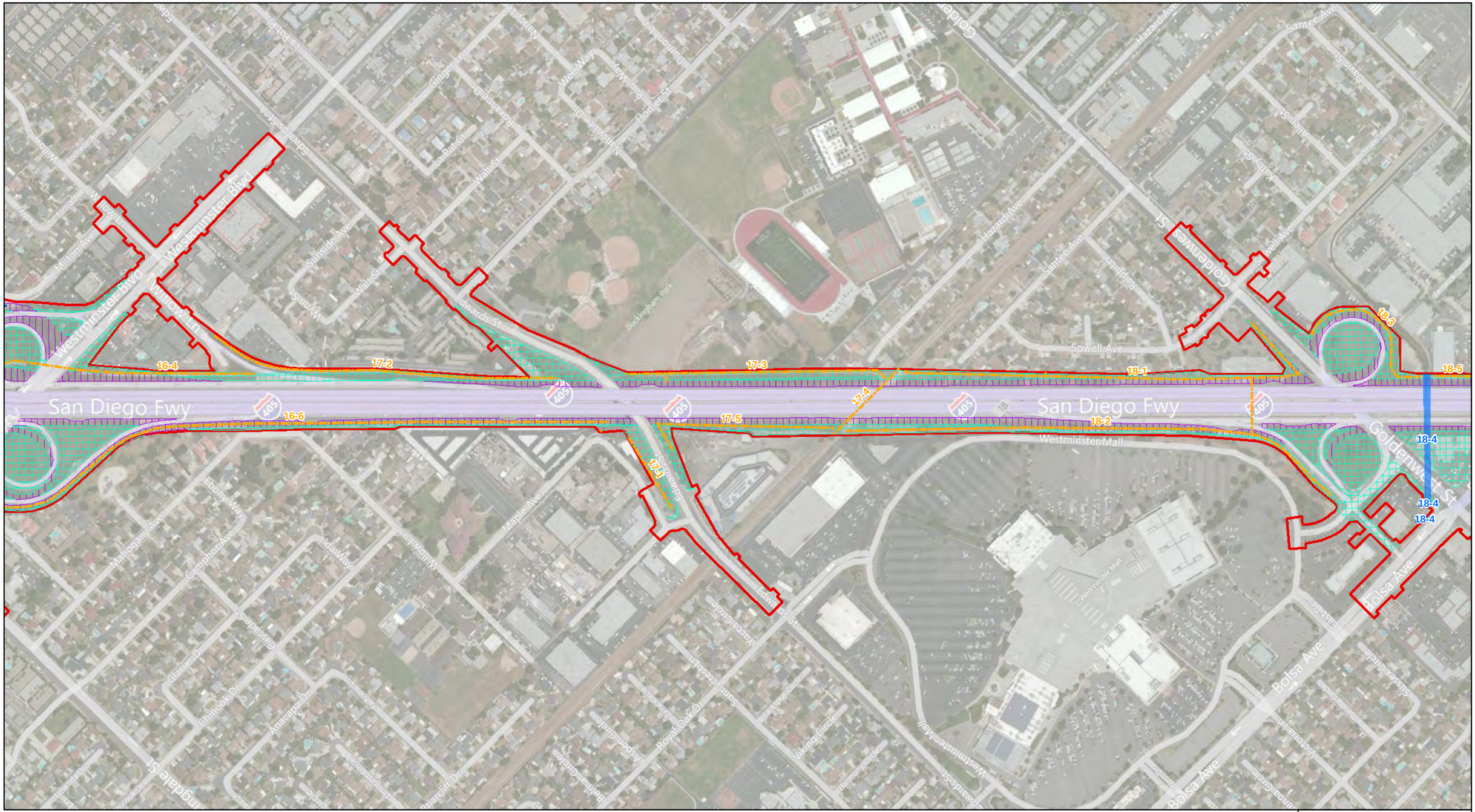
USACE, RWQCB, CDFG
Drainage Exhibit
Alternative 3
March 2012
Figure 3-8



Study Area
Alternative 3 Temporary Impact
Alternative 3 Permanent Impact
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

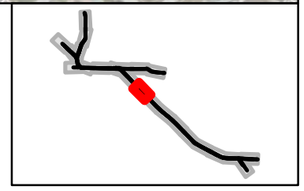
USACE, RWQCB, CDFG
Drainage Exhibit
Alternative 3
March 2012
Figure 3-9



Study Area
Alternative 3 Temporary Impact
Alternative 3 Permanent Impact
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

USACE, RWQCB, CDFG
Drainage Exhibit
Alternative 3
March 2012
Figure 3-10



Study Area
Alternative 3 Temporary Impact
Alternative 3 Permanent Impact
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

USACE, RWQCB, CDFG
Drainage Exhibit
Alternative 3
March 2012
Figure 3-11

Study Area
Alternative 3 Temporary Impact
Alternative 3 Permanent Impact
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

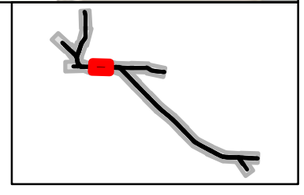
0 250 500 1,000 Feet

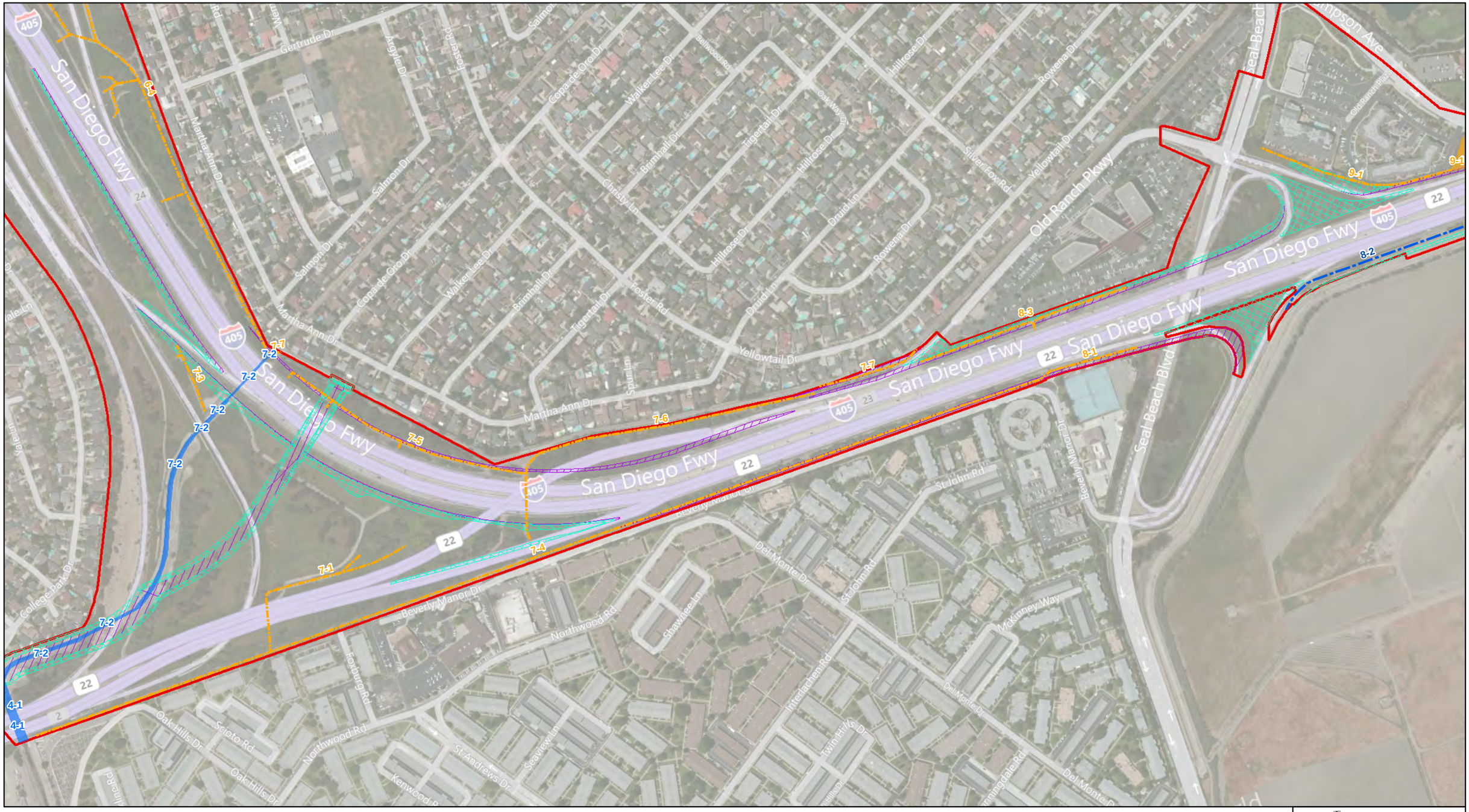
USACE, RWQCB, CDFG
Drainage Exhibit
Alternative 3
March 2012
Figure 3-12

Study Area
Alternative 3 Temporary Impact
Alternative 3 Permanent Impact
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

USACE, RWQCB, CDFG
Drainage Exhibit
Alternative 3
March 2012
Figure 3-13

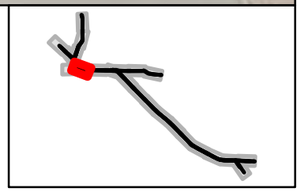


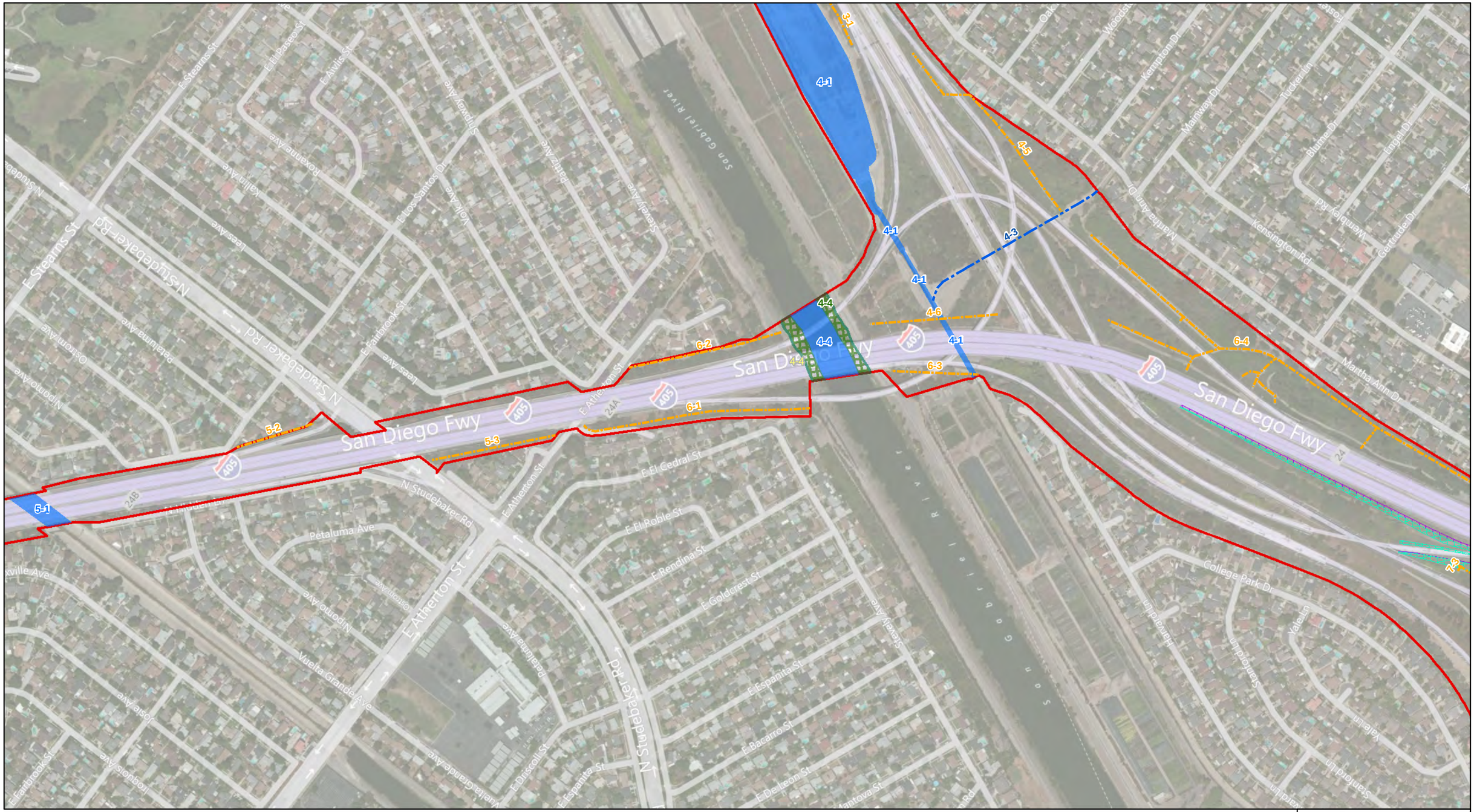


Study Area
Alternative 3 Temporary Impact
Alternative 3 Permanent Impact
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

USACE, RWQCB, CDFG
Drainage Exhibit
Alternative 3
March 2012
Figure 3-14

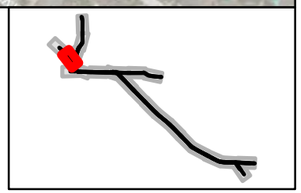


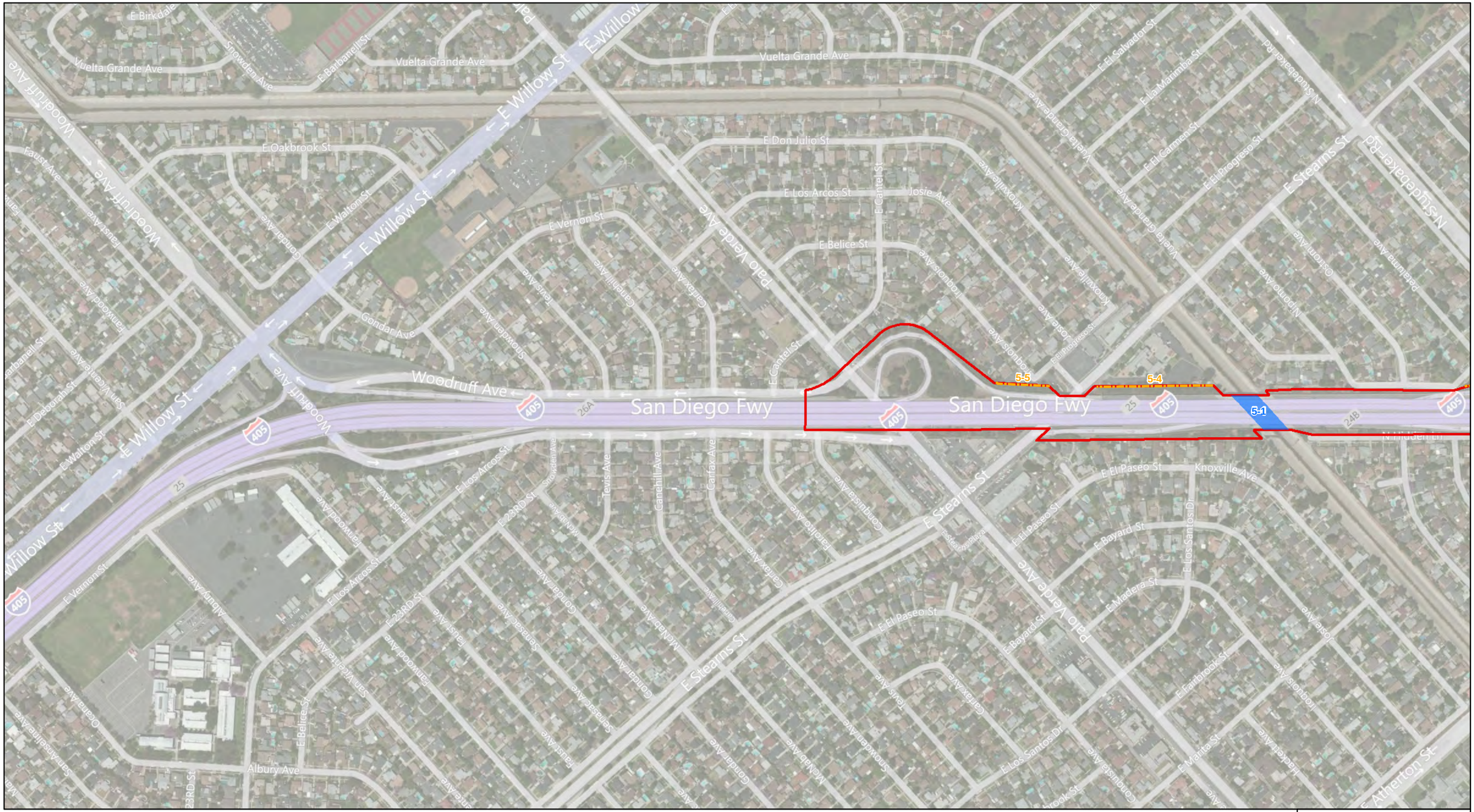


Study Area
Alternative 3 Temporary Impact
Alternative 3 Permanent Impact
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

USACE, RWQCB, CDFG
Drainage Exhibit
Alternative 3
March 2012
Figure 3-15





Study Area
Alternative 3 Temporary Impact
Alternative 3 Permanent Impact
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

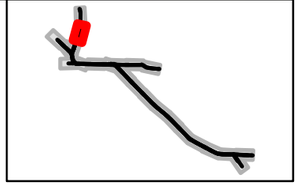
0 250 500 1,000 Feet

USACE, RWQCB, CDFG
Drainage Exhibit
Alternative 3
March 2012
Figure 3-16

Study Area
Alternative 3 Temporary Impact
Alternative 3 Permanent Impact
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

USACE, RWQCB, CDFG
Drainage Exhibit
Alternative 3
March 2012
Figure 3-17



Study Area
Alternative 3 Temporary Impact
Alternative 3 Permanent Impact
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

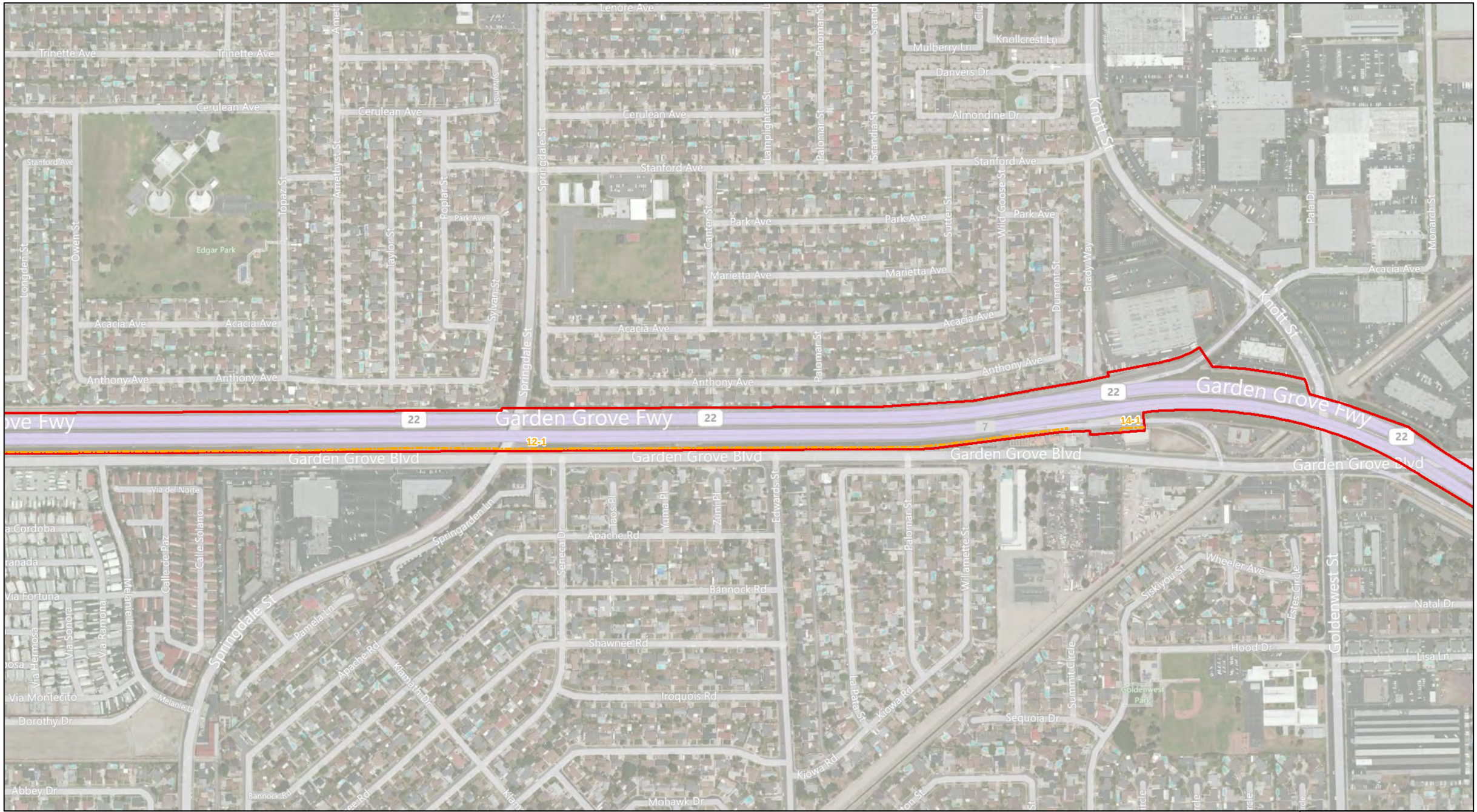
0 250 500 1,000 Feet

USACE, RWQCB, CDFG
Drainage Exhibit
Alternative 3
March 2012
Figure 3-18

Study Area
Alternative 3 Temporary Impact
Alternative 3 Permanent Impact
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

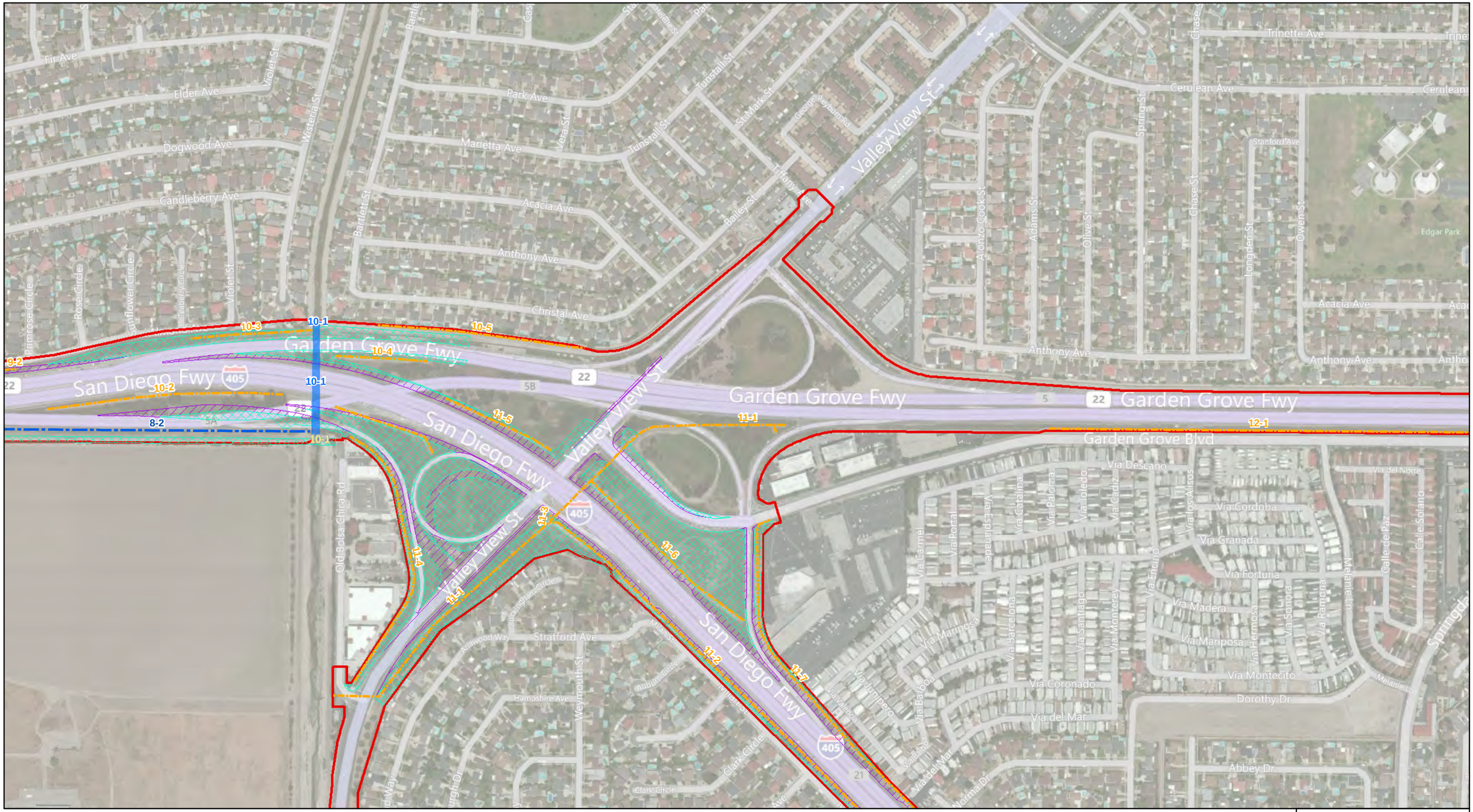
USACE, RWQCB, CDFG
Drainage Exhibit
Alternative 3
March 2012
Figure 3-19



Study Area
Alternative 3 Temporary Impact
Alternative 3 Permanent Impact
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

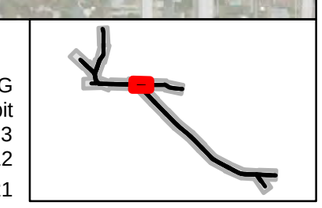
USACE, RWQCB, CDFG
Drainage Exhibit
Alternative 3
March 2012
Figure 3-20



Study Area
Alternative 3 Temporary Impact
Alternative 3 Permanent Impact
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

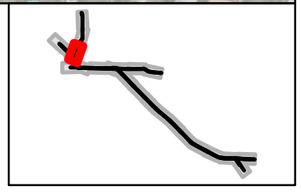
USACE, RWQCB, CDFG
Drainage Exhibit
Alternative 3
March 2012
Figure 3-21

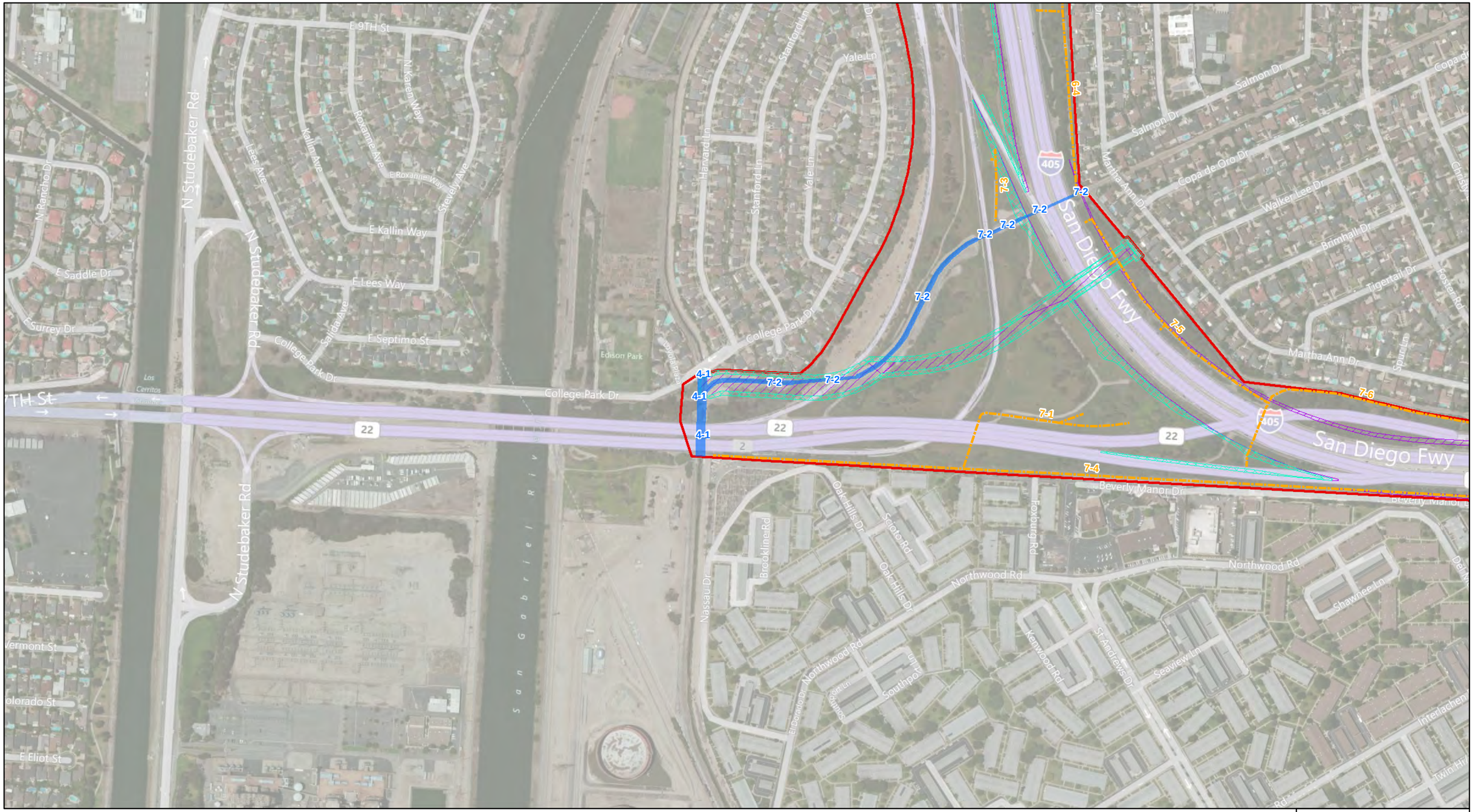


Study Area
Alternative 3 Temporary Impact
Alternative 3 Permanent Impact
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

USACE, RWQCB, CDFG
Drainage Exhibit
Alternative 3
March 2012
Figure 3-22

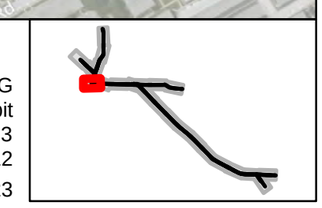




Study Area
Alternative 3 Temporary Impact
Alternative 3 Permanent Impact
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
Non-Jurisdictional Feature with Feature ID Number
Clean Water Act Section 404 Jurisdictional Limits with Feature ID Number
USACE-Defined Wetland
Non-Jurisdictional Feature with Feature ID Number

0 250 500 1,000 Feet

USACE, RWQCB, CDFG
Drainage Exhibit
Alternative 3
March 2012
Figure 3-23



Appendix F. USFWS Species List

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
Carlsbad Fish and Wildlife Office
6010 Hidden Valley Road, Suite 101
Carlsbad, California 92011

JUL 18 2011

In Reply Refer To:
FWS-OR-09B0301-11SL0482

Arianne Preite
District Biologist
Caltrans District 12
3347 Michelson Drive, Suite 100
Irvine, CA 92612-1692

Subject: Request for a List of Proposed, Threatened, and Endangered Species, and Critical Habitats Occurring in the I-405 Improvement Project Area from 405/55 Interchange to 405/605 Interchange, Orange County, California

Dear Ms. Preite:

This letter is in response to your letter, received June 22, 2011, for a list of federally endangered, threatened, and proposed species and critical habitats present in the vicinity of the subject project in Orange County, California. To assist you in evaluating the potential occurrence of federally listed endangered, threatened, proposed, and candidate species and their critical habitat, we are providing the enclosed list.

Because we do not have site-specific information for the proposed project, we recommend that you seek assistance from a biologist familiar with the habitat conditions and associated species in and around the project site to assess the actual potential for direct, indirect, and cumulative impacts likely to result from the proposed activity. We also suggest that you contact the California Department of Fish and Game regarding State-listed and sensitive species that may occur within the project area. Please note that State-listed species are protected under the provisions of the California Endangered Species Act.

As a reminder, if a proposed project is authorized, funded, or carried out by a Federal agency and may affect a federally listed species, then section 7 consultation pursuant to the Endangered Species Act of 1973 (Act), as amended, is required. If a proposed project does not involve a Federal agency, but is likely to result in the take of a listed animal species, then the project proponent should apply for an incidental take permit, pursuant to section 10 of the Act.

TAKE PRIDE IN AMERICA

Please note that the Carlsbad Fish and Wildlife Office is hosting all critical habitat GIS data within our jurisdictional area on our website at http://www.fws.gov/carlsbad. Select the GIS DATA link to access current critical habitat layers.

Should you have any questions regarding the species listed or your responsibilities under the Act, please contact Sally Brown of this office at (760) 431-9440, extension 278.

Sincerely,

Sally Brown

for Karen A. Goebel
Assistant Field Supervisor

Enclosure

Federally Endangered, Threatened, Proposed, and Candidate Species and Critical Habitat Occurring in the I-405 Widening Project Area from 405/55 Interchange to 405/605 Interchange, Orange County, California June 18, 2011			
Common Name	**Scientific Name**	**Federal Status**	**Critical Habitat**
Plants			
Ventura marsh milk-vetch	*Astragalus pycnostachyus var. lanosissimus*	endangered	none
salt marsh bird's beak	*Cordylanthus maritimus subsp. maritimus*	endangered	N/A
Brand's phacelia	*Phacelia stellaris*	candidate	N/A
Birds			
western snowy plover	*Charadrius alexandrinus nivosus*	threatened	none
coastal California gnatcatcher	*Polioptila californica californica*	threatened	none
light-footed clapper rail	*Rallus longirostris levipes*	endangered	N/A
California least tern	*Sternula antillarum browni*	endangered	N/A
least Bell's vireo	*Vireo bellii pusillus*	endangered	none
Reptiles			
Green sea turtle	*Chelonias mydas*	threatened	none

* N/A = Not Applicable

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
Carlsbad Fish and Wildlife Office
6010 Hidden Valley Road, Suite 101
Carlsbad, California 92011

In Reply Refer To:
FWS-OR-09B0301-09SL0891

JUN 11 2009

Arianne Preite
District Biologist
Caltrans District 12
3337 Michelson Drive, Suite CN380
Irvine, California 92612-0699

Subject: Request for a List of Proposed, Threatened, and Endangered Species, and Critical Habitats Occurring in the I-405 Widening Project Area from 405/55 Interchange to 405/605 Interchange, Orange County, California

Dear Ms. Preite:

This letter is in response to your letter, received May 13, 2009, for a list of federally endangered, threatened, and proposed species and critical habitats present in the vicinity of the subject project in Orange County, California. To assist you in evaluating the potential occurrence of federally listed endangered, threatened, proposed, and candidate species and their critical habitat, we are providing the enclosed list.

Because we do not have site-specific information for the proposed project, we recommend that you seek assistance from a biologist familiar with the habitat conditions and associated species in and around the project site to assess the actual potential for direct, indirect, and cumulative impacts likely to result from the proposed activity. We also suggest that you contact the California Department of Fish and Game regarding State-listed and sensitive species that may occur within the project area. Please note that State-listed species are protected under the provisions of the California Endangered Species Act.

As a reminder, if a proposed project is authorized, funded, or carried out by a Federal agency and may affect a federally listed species, then section 7 consultation pursuant to the Endangered Species Act of 1973 (Act), as amended, is required. If a proposed project does not involve a Federal agency, but is likely to result in the take of a listed animal species, then the project proponent should apply for an incidental take permit, pursuant to section 10 of the Act.

TAKE PRIDE IN AMERICA

Should you have any questions regarding the species listed or your responsibilities under the Act, please contact Sally Brown of this office at (760) 431-9440, extension 278.

Sincerely,

Sally Brown

for Karen A. Goebel
Assistant Field Supervisor

Enclosure

Federally Endangered, Threatened, Proposed, and Candidate Species and Critical Habitat Occurring in the I-405 Widening Project Area from 405/55 Interchange to 405/605 Interchange, Orange County, California
June 10, 2009

Common Name	Scientific Name	Federal Status	Critical Habitat
Plants			
Ventura marsh milk-vetch	*Astragalus pycnostachyus var. lanosissimus*	endangered	none
salt marsh bird's beak	*Cordylanthus maritimus subsp. maritimus*	endangered	N/A
Brand's phacelia	*Phacelia stellaris*	candidate	N/A
Birds			
western snowy plover	*Charadrius alexandrinus nivosus*	threatened	none
brown pelican	*Pelecanus occidentalis*	endangered	N/A
coastal California gnatcatcher	*Polioptila californica californica*	threatened	none
light-footed clapper rail	*Rallus longirostris levipes*	endangered	N/A
California least tern	*Sternula antillarum browni*	endangered	N/A
least Bell's vireo	*Vireo bellii pusillus*	endangered	none

* N/A = Not Applicable

Appendix G. Invasive Species Council of California List

Scientific Name	Common Name	Type	Subtype	Extent	Risk of Introduction	First Source
Abutilon theophrasti	velvet leaf	plant	herbaceous	widespread	n/a (already in CA)	Weeds of CA
Acacia dealbata	silver wattle	plant	woody	limited	n/a (already in CA)	Cal-IPC list
Acacia melanoxylon	black acacia	plant	woody	limited	n/a (already in CA)	Cal-IPC list
Acacia paradoxa	kangaroothorn	plant	woody	limited	n/a (already in CA)	CDFA
Acaena novae-zelandiae	biddy-biddy	plant	herbaceous	limited	n/a (already in CA)	CDFA
Acaena pallida	pale biddy-biddy	plant	herbaceous	limited	n/a (already in CA)	CDFA
Achnatherum brachychaetum	punagrass	plant	grass	limited	n/a (already in CA)	CDFA
Acroptilon repens	Russian knapweed	plant	herbaceous	widespread	n/a (already in CA)	MT Weed List
Aegilops cylindrica	jointed goatgrass	plant	grass	widespread	n/a (already in CA)	WA Weed List
Aegilops ovata	ovate goatgrass	plant	grass	limited	n/a (already in CA)	CDFA
Aegilops triuncialis	barb goatgrass	plant	grass	widespread	n/a (already in CA)	CDFA
Aeginetia spp.	aeginetia	plant	herbaceous	not present	moderate	USDA Plant/Pest
Aeschynomene rudis	rough jointvetch	plant	woody	limited	n/a (already in CA)	CDFA
Ageratina adenophora	croftonweed	plant	herbaceous	limited	n/a (already in CA)	Cal-IPC list
Agrostis avenacea	Pacific bentgrass	plant	grass	limited	n/a (already in CA)	Cal-IPC list
Agrostis stolonifera	creeping bentgrass	plant	grass	limited	n/a (already in CA)	Cal-IPC list
Ailanthus altissima	tree-of-heaven	plant	woody	widespread	n/a (already in CA)	Cal-IPC list
Albizia lophantha	plume acacia	plant	woody	limited	n/a (already in CA)	Cal-IPC list
Alectra spp.	alectra	plant	herbaceous	not present	moderate	USDA Plant/Pest
Alhagi maurorum	camelthorn	plant	woody	limited	n/a (already in CA)	NV Weed List
Allaria petiolata	garlic mustard	plant	herbaceous	not present	high	OR Weed List
Allium paniculatum	panicled onion	plant	herbaceous	limited	n/a (already in CA)	CDFA
Allium vineale	wild garlic	plant	herbaceous	limited	n/a (already in CA)	CDFA
Alopecurus myosuroides	blackgrass	plant	grass	limited	n/a (already in CA)	WA Weed List
Alternanthera philoxeroides	alligator weed	plant	herbaceous	limited	n/a (already in CA)	Cal-IPC list
Alternanthera sessilis	sessile joyweed	plant	herbaceous	not present	moderate	USDA Plant/Pest
Alyssum corsicum	yellowtuft	plant	herbaceous	not present	moderate	OR Weed List
Alyssum murale	yellowtuft	plant	herbaceous	not present	moderate	OR Weed List
Amaranthus albus	prostrate pigweed	plant	herbaceous	widespread	n/a (already in CA)	Weeds of CA
Amaranthus hybridus	slim amaranth	plant	herbaceous	widespread	n/a (already in CA)	Weeds of CA
Amaranthus retroflexus	redroot amaranth	plant	herbaceous	widespread	n/a (already in CA)	Weeds of CA
Ambrosia artemisifolia	ragweed	plant	herbaceous	widespread	n/a (already in CA)	OR Weed List
Ambrosia tomentosa	skeletonleaf bursage	plant	herbaceous	not present	high	ID Weed List
Ambrosia trifida	giant ragweed	plant	herbaceous	limited	n/a (already in CA)	CDFA

Scientific Name	Common Name	Type	Subtype	Extent	Risk of Introduction	First Source
Ammophila arenaria	European beachgrass	plant	grass	widespread	n/a (already in CA)	Cal-IPC list
Amorpha fruticosa	indigobush	plant	woody	limited	n/a (already in CA)	WA Weed List
Anchusa arvensis	annual bugloss	plant	herbaceous	limited	n/a (already in CA)	WA Weed List
Anchusa officinalis	common bugloss	plant	herbaceous	limited	n/a (already in CA)	OR Weed List
Anoda cristata	spurred anoda	plant	herbaceous	limited	n/a (already in CA)	CO Weed List
Anthemis arvensis	scentless chamomile	plant	herbaceous	limited	n/a (already in CA)	CO Weed List
Anthemis cotula	mayweed chamomile	plant	herbaceous	widespread	n/a (already in CA)	CO Weed List
Anthoxanthum odoratum	sweet vernalgrass	plant	grass	widespread	n/a (already in CA)	Cal-IPC list
Anthriscus sylvestris	wild chervil	plant	herbaceous	not present	high	WA Weed List
Araujia sericifera	bladderflower	plant	woody	limited	n/a (already in CA)	CDFA
Arctium minus	common burdock	plant	herbaceous	limited	n/a (already in CA)	CO Weed List
Arctotheca calendula (fertile)	fertile capeweed	plant	herbaceous	limited	n/a (already in CA)	CDFA
Arctotheca calendula (sterile)	sterile capeweed	plant	herbaceous	limited	n/a (already in CA)	CDFA
Artemisia absinthium	absinthe wormwood	plant	herbaceous	limited	n/a (already in CA)	CO Weed List
Arundo donax	giant reed	plant	grass	widespread	n/a (already in CA)	Cal-IPC list
Ascophyllum nodosum	common brown algae	plant	algae	limited	n/a (already in CA)	Hoffman NOAA
Asparagus asparagoides	bridal creeper	plant	herbaceous	limited	n/a (already in CA)	Cal-IPC list
Asphodelus fistulosus	onionweed	plant	herbaceous	limited	n/a (already in CA)	Cal-IPC list
Atriplex semibaccata	Australian saltbush	plant	herbaceous	widespread	n/a (already in CA)	Cal-IPC list
Avena barbata	slender wild oat	plant	grass	widespread	n/a (already in CA)	Cal-IPC list
Avena fatua	wild oat	plant	grass	widespread	n/a (already in CA)	Cal-IPC list
Avena sterilis	animated oat	plant	grass	limited	n/a (already in CA)	APHIS
Azolla pinnata	mosquito fern	plant	herbaceous	not present	moderate	USDA Plant/Pest
Bassia hyssopifolia	fivehook bassia	plant	herbaceous	limited	n/a (already in CA)	Cal-IPC list
Bellardia trixago	bellardia	plant	herbaceous	limited	n/a (already in CA)	Cal-IPC list
Brachypodium distachyon	annual false-brome	plant	grass	widespread	n/a (already in CA)	Cal-IPC list
Brachypodium sylvaticum	perennial false-brome	plant	grass	limited	n/a (already in CA)	Cal-IPC list
Brassica nigra	black mustard	plant	herbaceous	widespread	n/a (already in CA)	Cal-IPC list
Brassica rapa	birdsrape mustard	plant	herbaceous	widespread	n/a (already in CA)	Cal-IPC list
Brassica tournefortii	Saharan mustard	plant	herbaceous	limited	n/a (already in CA)	Cal-IPC list
Briza maxima	big quackingrass	plant	grass	widespread	n/a (already in CA)	Cal-IPC list
Bromus diandrus	ripgut brome	plant	grass	widespread	n/a (already in CA)	Cal-IPC list
Bromus hordeaceus	soft brome	plant	grass	widespread	n/a (already in CA)	Cal-IPC list

Scientific Name	Common Name	Type	Subtype	Extent	Risk of Introduction	First Source
Bromus japonicus	Japanese brome	plant	grass	widespread	n/a (already in CA)	Cal-IPC list
Bromus madritensis ssp. rubens	red brome	plant	grass	widespread	n/a (already in CA)	Cal-IPC list
Bromus madritensis ssp. rubens	red brome	plant	grass	widespread	n/a (already in CA)	Cal-IPC list
Bromus tectorum	downy brome	plant	grass	widespread	n/a (already in CA)	Cal-IPC list
Bryonia alba	white bryony	plant	herbaceous	not present	moderate	WA Weed List
Buddleja davidii	butterflybush	plant	woody	limited	n/a (already in CA)	OR Weed List
Butomus umbellatus	flowering rush	plant	herbaceous	not present	high	WA Weed List
Cabomba caroliniana	Carolina fanwort	plant	herbaceous	limited	n/a (already in CA)	CDFA
Cakile maritima	European sea-rocket	plant	herbaceous	widespread	n/a (already in CA)	Cal-IPC list
Capsella bursa-pastoris	shepard's purse	plant	herbaceous	widespread	n/a (already in CA)	Weeds of CA
Cardaria chalepensis	lens-podded white-top	plant	herbaceous	limited	n/a (already in CA)	CDFA
Cardaria draba	hoary cress	plant	herbaceous	widespread	n/a (already in CA)	CDFA
Cardaria pubescens	hairy whitetop	plant	herbaceous	limited	n/a (already in CA)	CDFA
Carduus acanthoides	plumeless thistle	plant	herbaceous	limited	n/a (already in CA)	CDFA
Carduus nutans	musk thistle	plant	herbaceous	limited	n/a (already in CA)	CDFA
Carduus pycnocephalus	Italian thistle	plant	herbaceous	widespread	n/a (already in CA)	CDFA
Carduus tenuiflorus	slenderflower thistle	plant	herbaceous	widespread	n/a (already in CA)	CDFA
Carpobrotus edulis	iceplant	plant	herbaceous	widespread	n/a (already in CA)	Cal-IPC list
Carthamus baeticus	smooth distaff thistle	plant	herbaceous	limited	n/a (already in CA)	CDFA
Carthamus lanatus	woolly distaff thistle	plant	herbaceous	widespread	n/a (already in CA)	CDFA
Carthamus leucocaulos	whitestem distaff thistle	plant	herbaceous	not present	moderate	CDFA
Carthamus oxyacantha	wild safflower	plant	herbaceous	limited	n/a (already in CA)	USDA Plant/Pest
Carum carvi	wild caraway	plant	herbaceous	not present	high	CO Weed List
Caulacanthus ustulatus	red algae	plant	algae	unknown	Value Required	Hoffman NOAA
Caulerpa brachypus	Caulerpa brachypus	plant	algae	unknown	high	Hoffman NOAA
Caulerpa racemosa	Caulerpa racemosa	plant	algae	Value Required	high	Hoffman NOAA
Caulerpa taxifolia	Mediterranean strain	plant	algae	limited	high	OR Weed List
Cenchrus echinatus	southern sandbur	plant	grass	widespread	n/a (already in CA)	CDFA
Cenchrus incertus	coast sandbur	plant	grass	widespread	n/a (already in CA)	CDFA
Cenchrus longispinus	mat sandbur	plant	grass	widespread	n/a (already in CA)	CDFA
Centaurea calcitrapa	purple starthistle	plant	herbaceous	widespread	n/a (already in CA)	CDFA
Centaurea debeauxii	meadow knapweed	plant	herbaceous	limited	n/a (already in CA)	Cal-IPC list
Centaurea diffusa	diffuse knapweed	plant	herbaceous	limited	n/a (already in CA)	CDFA
Centaurea iberica	*Iberian starthistle*	*plant*	*herbaceous*	*limited*	*n/a (already in CA)*	CDFA

Scientific Name	Common Name	Type	Subtype	Extent	Risk of Introduction	First Source
Centaurea jacea	brown knapweed	plant	herbaceous	limited	n/a (already in CA)	WA Weed List
Centaurea macrocephala	bighead knapweed	plant	herbaceous	not present	moderate	WA Weed List
Centaurea melitensis	Malta starthistle	plant	herbaceous	widespread	n/a (already in CA)	CDFA
Centaurea nigra	black knapweed	plant	herbaceous	limited	n/a (already in CA)	WA Weed List
Centaurea solstitialis	yellow starthistle	plant	herbaceous	widespread	n/a (already in CA)	CDFA
Centaurea stoebe ssp. micranthos	spotted knapweed	plant	herbaceous	limited	n/a (already in CA)	AZ Weed List
Centaurea sulphurea	Sicilian thistle	plant	herbaceous	limited	n/a (already in CA)	CDFA
Centaurea virgata ssp. Squarrosa	squarrose knapweed	plant	herbaceous	limited	n/a (already in CA)	Cal-IPC list
Chaenorhinum minus	dwarf snapdragon	plant	herbaceous	not present	moderate	WA Weed List
Chondrilla juncea	rush skeletonweed	plant	herbaceous	limited	n/a (already in CA)	CDFA
Chorispora tenella	blue mustard	plant	herbaceous	limited	n/a (already in CA)	CDFA
Chrysanthemum coronarium	crown daisy	plant	herbaceous	limited	n/a (already in CA)	Cal-IPC list
Chrysopogon aciculatus	pilipiliula	plant	grass	not present	low	USDA Plant/Pest
Cichorium intybus	chicory	plant	herbaceous	widespread	n/a (already in CA)	CO Weed List
Cirsium arvense	Canada thistle	plant	herbaceous	widespread	n/a (already in CA)	CDFA
Cirsium japonicum	Japanese thistle	plant	herbaceous	not present	low	CDFA
Cirsium ochrocentrum	yellowspine thistle	plant	herbaceous	limited	n/a (already in CA)	CDFA
Cirsium undulatum	wavyleaf thistle	plant	herbaceous	limited	n/a (already in CA)	CDFA
Cirsium vulgare	bull thistle	plant	herbaceous	widespread	n/a (already in CA)	Cal-IPC list
Cladophora spp.	green algae	plant	algae	limited	Value Required	Hoffman NOAA
Clematis orientalis	Chinese clematis	plant	herbaceous	not present	high	CO Weed List
Clematis vitalba	old man's beard	plant	herbaceous	limited	n/a (already in CA)	OR Weed List
Commelina benghalensis	Benghal dayflower	plant	herbaceous	limited	n/a (already in CA)	USDA Plant/Pest
Conicosia pugioniformis	narrowleaf iceplant	plant	herbaceous	limited	n/a (already in CA)	Cal-IPC list
Conium maculatum	poison-hemlock	plant	herbaceous	widespread	n/a (already in CA)	Cal-IPC list
Convolvulus arvensis	field bindweed	plant	herbaceous	widespread	n/a (already in CA)	CDFA
Conyza bonariensis	asthmaweed	plant	herbaceous	widespread	n/a (already in CA)	Weeds of CA
Cordyline australis	giant dracaena	plant	herbaceous	limited	n/a (already in CA)	Cal-IPC list
Coronopus squamatus	swinecress	plant	herbaceous	limited	n/a (already in CA)	CDFA
Cortaderia jubata	jubatagrass	plant	grass	widespread	n/a (already in CA)	Cal-IPC list
Cortaderia selloana	pampasgrass	plant	grass	widespread	n/a (already in CA)	Cal-IPC list
Cotoneaster franchetii	orange cotoneaster	plant	woody	limited	n/a (already in CA)	Cal-IPC list
Cotoneaster lacteus	Parney's cotoneaster	plant	woody	limited	n/a (already in CA)	Cal-IPC list

Scientific Name	Common Name	Type	Subtype	Extent	Risk of Introduction	First Source
Cotoneaster pannosus	silverleaf cotoneaster	plant	woody	limited	n/a (already in CA)	Cal-IPC list
Cotula coronopifolia	brassbuttons	plant	herbaceous	widespread	n/a (already in CA)	Cal-IPC list
Crassula helmsii	Australian swamp stonecrop	plant	herbaceous	not present	low	WA Weed List
Crataegus monogyna	hawthorn	plant	woody	limited	n/a (already in CA)	Cal-IPC list
Crocosmia x crocosmiiflora	montbretia	plant	herbaceous	limited	n/a (already in CA)	Cal-IPC list
Crupina vulgaris	common crupina	plant	herbaceous	limited	n/a (already in CA)	CDFA
Cucumis melo var. duriam	dudaim melon	plant	herbaceous	limited	n/a (already in CA)	CDFA
Cucumis myriocarpus	paddy melon	plant	herbaceous	limited	n/a (already in CA)	CDFA
Cuscuta approximata	smoothseed alfalfa dodder	plant	herbaceous	limited	n/a (already in CA)	WA Weed List
Cuscuta australis	Australian dodder	plant	herbaceous	not present	low	CDFA
Cuscuta japonica	Japanese dodder	plant	herbaceous	limited	n/a (already in CA)	CDFA
Cuscuta monogyna	Eastern Dodder	plant	herbaceous	not present	low	No list
Cuscuta reflexa	giant dodder	plant	herbaceous	not present	low	CDFA
Cuscuta spp. (C. japonica, reflexa, australia, monogyna)	Dodder (non-native spp.)	plant	herbaceous	limited	n/a (already in CA)	CDFA
Cynara cardunculus	artichoke thistle	plant	herbaceous	widespread	n/a (already in CA)	CDFA
Cynodon dactylon	bermudagrass	plant	grass	widespread	n/a (already in CA)	CDFA
Cynoglossum officinale	houndstongue	plant	herbaceous	limited	n/a (already in CA)	Cal-IPC list
Cynosurus echinatus	hedgehog dogtailgrass	plant	grass	widespread	n/a (already in CA)	Cal-IPC list
Cyperus difformis	variable flatsedge	plant	herbaceous	limited	n/a (already in CA)	Weeds of CA
Cyperus rotundus	purple nutsedge	plant	herbaceous	widespread	n/a (already in CA)	CDFA
Cytisus scoparius	Scotch broom	plant	woody	widespread	n/a (already in CA)	CDFA
Cytisus striatus	Portuguese broom	plant	woody	limited	n/a (already in CA)	Cal-IPC list
Dactylis glomerata	orchardgrass	plant	grass	widespread	n/a (already in CA)	Cal-IPC list
Daucus carota	wild carrot	plant	herbaceous	widespread	n/a (already in CA)	WA Weed List
Delairea odorata	Cape-ivy	plant	herbaceous	widespread	n/a (already in CA)	Cal-IPC list
Descurainia sophia	flixweed	plant	herbaceous	limited	n/a (already in CA)	Cal-IPC list
Didymosphenia geminata	didymo	plant	algae	limited	high	Hoffman NOAA
Digitalis purpurea	foxglove	plant	herbaceous	limited	n/a (already in CA)	Cal-IPC list
Digitaria abyssinica	Digitaria abyssinica	plant	grass	not present	moderate	OR Weed List
Digitaria sanguinalis	hairy crabgrass	plant	grass	widespread	n/a (already in CA)	Weeds of CA
Digitaria velutina	velvet fingergrass	plant	grass	not present	moderate	USDA Plant/Pest

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Dipsacus fullonum	common teasel	plant	herbaceous	widespread	n/a (already in CA)	Cal-IPC list
Dipsacus laciniatus	cutleaf teasel	plant	herbaceous	not present	high	CO Weed List
Dipsacus sativus	fuller's teasel	plant	herbaceous	widespread	n/a (already in CA)	Cal-IPC list
Dittrichia graveolens	stinkwort	plant	herbaceous	widespread	n/a (already in CA)	Cal-IPC list
Drymaria arenarioides	lightening weed	plant	herbaceous	not present	moderate	USDA Plant/Pest
Echinochloa colona	jungle rice	plant	grass	widespread	n/a (already in CA)	Weeds of CA
Echinochloa oryzicola	early watergrass	plant	grass	limited	n/a (already in CA)	Weeds of CA
Echinochloa phyllopogon	rice barnyardgrass	plant	grass	limited	n/a (already in CA)	Weeds of CA
Echium candicans	pride-of-Madeira	plant	herbaceous	limited	n/a (already in CA)	Cal-IPC list
Echium plantagineum	Paterson's curse	plant	herbaceous	limited	n/a (already in CA)	OR Weed List
Echium vulgare	common viper's bugloss	plant	herbaceous	not present	high	WA Weed List
Egeria densa	Brazilian egeria	plant	herbaceous	widespread	n/a (already in CA)	Cal-IPC list
Ehrharta calycina	purple veldtgrass	plant	grass	widespread	n/a (already in CA)	Cal-IPC list
Ehrharta erecta	erect veldtgrass	plant	grass	limited	n/a (already in CA)	Cal-IPC list
Ehrharta longiflora	long-flowered veldtgrass	plant	grass	limited	n/a (already in CA)	Cal-IPC list
Eichhornia azurea	anchored water hyacinth	plant	herbaceous	not present	low	USDA Plant/Pest
Eichhornia crassipes	water hyacinth	plant	herbaceous	widespread	n/a (already in CA)	Cal-IPC list
Elaeagnus angustifolia	Russian-olive	plant	woody	limited	n/a (already in CA)	Cal-IPC list
Elytrigia repens	quackgrass	plant	grass	widespread	n/a (already in CA)	CDFA
Emex australis	three-cornered jack	plant	herbaceous	limited	n/a (already in CA)	USDA Plant/Pest
Emex spinosa	devil's-thorn	plant	herbaceous	limited	n/a (already in CA)	Cal-IPC list
Epilobium hirsutum	hairy willow herb	plant	herbaceous	not present	high	WA Weed List
Erechtites glomerata	Australian fireweed	plant	herbaceous	limited	n/a (already in CA)	Cal-IPC list
Erechtites minima	Australian fireweed	plant	herbaceous	limited	n/a (already in CA)	Cal-IPC list
Erigeron karvinskianus	Mexican daisy	plant	herbaceous	limited	n/a (already in CA)	Med. plants list
Erodium botrys	broadleaf filaree	plant	herbaceous	widespread	n/a (already in CA)	Weeds of CA
Erodium cicutarium	redstem filaree	plant	herbaceous	widespread	n/a (already in CA)	Cal-IPC list
Erodium moschatum	whitestem filaree	plant	herbaceous	widespread	n/a (already in CA)	Weeds of CA
Eucalyptus camaldulensis	red gum	plant	woody	limited	n/a (already in CA)	Cal-IPC list
Eucalyptus globulus	Tasmanian blue gum	plant	woody	widespread	n/a (already in CA)	Cal-IPC list
Euphorbia cyparissias	cypress spurge	plant	herbaceous	limited	n/a (already in CA)	CO Weed List
Euphorbia dentata	toothed spurge	plant	herbaceous	limited	n/a (already in CA)	CO Weed List

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Euphorbia esula	leafy spurge	plant	herbaceous	limited	n/a (already in CA)	CDFA
Euphorbia myrsinites	myrtle spurge	plant	herbaceous	limited	n/a (already in CA)	CO Weed List
Euphorbia oblongata	oblong spurge	plant	herbaceous	limited	n/a (already in CA)	CDFA
Euphorbia serrata	serrate spurge	plant	herbaceous	not present	moderate	CDFA
Euphorbia terracina	carnation spurge	plant	herbaceous	limited	n/a (already in CA)	CDFA
Euryops multifidus	hawk's eye	plant	woody	not present	high	AZ Weed List
Fatoua villosa	hairy crabwees	plant	herbaceous	limited	n/a (already in CA)	CDFA
Festuca arundinacea	tall fescue	plant	grass	widespread	n/a (already in CA)	Cal-IPC list
Ficus carica	edible fig	plant	woody	widespread	n/a (already in CA)	Cal-IPC list
Foeniculum vulgare	fennel	plant	herbaceous	widespread	n/a (already in CA)	Cal-IPC list
Galega officinalis	goatsrue	plant	herbaceous	not present	moderate	USDA Plant/Pest
Gaura drummondii	Drummond's gaura	plant	herbaceous	limited	n/a (already in CA)	CDFA
Gaura sinuata	wavy-leaved gaura	plant	herbaceous	limited	n/a (already in CA)	CDFA
Genista monspessulana	French broom	plant	woody	widespread	n/a (already in CA)	CDFA
Geranium dissectum	cutleaf geranium	plant	herbaceous	widespread	n/a (already in CA)	Cal-IPC list
Geranium robertianum	Herb-robert	plant	herbaceous	limited	n/a (already in CA)	Med. plants list
Gleditsia triacanthus	honey locust	plant	woody	limited	n/a (already in CA)	Med. plants list
Glossostigma diandrum	mud mat	plant	herbaceous	not present	low	WA Weed List
Glyceria declinata	waxy mannagrass	plant	grass	limited	n/a (already in CA)	Cal-IPC list
Grateloupia turuturu	Asian red seaweed	plant	algae	Value Required	Value Required	Hoffman NOAA
Gypsophila paniculata	baby's breath	plant	herbaceous	limited	n/a (already in CA)	CDFA
Halimodendron halodendron	Russian salttree	plant	woody	not present	moderate	CDFA
Halogeton glomeratus	halogeton	plant	herbaceous	limited	n/a (already in CA)	CDFA
Hedera canariensis	Algerian ivy	plant	woody	widespread	n/a (already in CA)	Cal-IPC list
Hedera helix	English ivy	plant	woody	widespread	n/a (already in CA)	Cal-IPC list
Hedera hibernica	English ivy	plant	woody	not present	high	WA Weed List
Helianthus ciliaris	blueweed	plant	herbaceous	limited	n/a (already in CA)	CDFA
Helichrysum petiolare	licoriceplant	plant	woody	limited	n/a (already in CA)	Cal-IPC list
Heracleum mantegazzianum	giant hogweed	plant	herbaceous	not present	high	CDFA
Hesperis matronalis	dame's rocket	plant	herbaceous	limited	n/a (already in CA)	CO Weed List
Hieracium atratum	polar hawkweed	plant	herbaceous	not present	low	WA Weed List
Hieracium aurantiacum	orange hawkweed	plant	herbaceous	not present	high	WA Weed List
Hieracium caespitosum	yellow hawkweed	plant	herbaceous	not present	high	ID Weed List

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Hieracium glomeratum	queen devil hawkweed	plant	herbaceous	not present	low	WA Weed List
Hieracium laevigatum	smooth hawkweed	plant	herbaceous	not present	low	WA Weed List
Hieracium pilosella	mouseear hawkweed	plant	herbaceous	not present	moderate	OR Weed List
Hieracium piloselloides	king devil hawkweed	plant	herbaceous	not present	moderate	MT Weed List
Hieracium x floribundum	yellow devil hawkweed	plant	herbaceous	not present	moderate	MT Weed List
Hirschfeldia incana	shortpod mustard	plant	herbaceous	widespread	n/a (already in CA)	Cal-IPC list
Holcus lanatus	common velvet grass	plant	grass	widespread	n/a (already in CA)	Cal-IPC list
Homeria spp.	cape tulip	plant	herbaceous	not present	low	USDA Plant/Pest
Hordeum marinum	Mediterranean barley	plant	grass	widespread	n/a (already in CA)	Cal-IPC list
Hordeum murinum	Mediterranean barley	plant	grass	widespread	n/a (already in CA)	Cal-IPC list
Hydrilla verticillata	hydrilla	plant	herbaceous	limited	n/a (already in CA)	CDFA
Hydrocharis morsus-ranae	European frog-bit	plant	herbaceous	not present	moderate	WA Weed List
Hygrophila polysperma	Miramar weed	plant	herbaceous	not present	high	CDFA
Hyoscyamus niger	black henbane	plant	herbaceous	limited	n/a (already in CA)	CDFA
Hypericum canariense	Canary Island hypericum	plant	woody	limited	n/a (already in CA)	CDFA
Hypericum perforatum	common St. John's wort	plant	herbaceous	widespread	n/a (already in CA)	CDFA
Hypochaeris glabra	smooth catsear	plant	herbaceous	widespread	n/a (already in CA)	CO Weed List
Hypochaeris radicata	rough catsear	plant	herbaceous	widespread	n/a (already in CA)	Cal-IPC list
Ilex aquifolium	English holly	plant	woody	limited	n/a (already in CA)	Cal-IPC list
Impatiens glandulifera	policeman's helmet	plant	herbaceous	not present	moderate	OR Weed List
Imperata brasiliensis	Brazilian satintail	plant	grass	not present	low	USDA Plant/Pest
Imperata cylindrica	cogongrass	plant	grass	not present	moderate	USDA Plant/Pest
Ipomoea aquatica	swamp morningglory	plant	herbaceous	limited	n/a (already in CA)	USDA Plant/Pest
Ipomoea triloba	three-cornered morning glory	plant	herbaceous	limited	n/a (already in CA)	AZ Weed List
Isatis tinctoria	dyer's woad	plant	herbaceous	widespread	n/a (already in CA)	CDFA
Ischaemum rugosum	murainograss	plant	grass	not present	low	USDA Plant/Pest
Kickxia elatine	sharpleaf cancerwort	plant	herbaceous	widespread	n/a (already in CA)	Weeds of CA
Kochia scoparia	kochia	plant	herbaceous	widespread	n/a (already in CA)	Cal-IPC list
Lactuca serriola	prickly lettuce	plant	herbaceous	widespread	n/a (already in CA)	Weeds of CA
Lagarosiphon major	oxygenweed	plant	herbaceous	not present	moderate	CDFA
Lamium amplexicaule	henbit deadnettle	plant	herbaceous	widespread	n/a (already in CA)	Weeds of CA
Lepidium latifolium	perennial pepperweed	plant	herbaceous	widespread	n/a (already in CA)	CDFA

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Leptochloa chinensis	Asian sprangletop	plant	grass	not present	moderate	USDA Plant/Pest
Lepyrodiclis holosteoides	false jagged-chickweed	plant	herbaceous	not present	low	WA Weed List
Lespedeza cuneata	sericea lespedeza	plant	herbaceous	not present	moderate	CO Weed List
Leucanthemum vulgare	ox-eye daisy	plant	herbaceous	widespread	n/a (already in CA)	Cal-IPC list
Limnobium laevigatum	spongeplant	plant	herbaceous	limited	n/a (already in CA)	CDFA
Limnophila indica	ambulia	plant	herbaceous	not present	moderate	CDFA
Limnophila sessiliflora	blume (ambulia)	plant	herbaceous	not present	moderate	CDFA
Linaria genistifolia ssp. dalmatica	Dalmatian toadflax	plant	herbaceous	limited	n/a (already in CA)	CDFA
Linaria vulgaris	yellow toadflax	plant	herbaceous	limited	n/a (already in CA)	Cal-IPC list
Lobularia maritima	sweet alyssum	plant	herbaceous	limited	n/a (already in CA)	Cal-IPC list
Lolium multiflorum	Italian ryegrass	plant	grass	widespread	n/a (already in CA)	Cal-IPC list
Lomentaria hakodatensis	yendo	plant	algae	Value Required	Value Required	Hoffman NOAA
Ludwigia grandiflora	large flower primrose willow	plant	herbaceous	limited	n/a (already in CA)	WA Weed List
Ludwigia hexapetala	Uruguay water-primrose	plant	herbaceous	widespread	n/a (already in CA)	Cal-IPC list
Ludwigia peploides ssp. montevidensis	creeping water-primrose	plant	herbaceous	widespread	n/a (already in CA)	Cal-IPC list
Ludwigia peruviana	water primrose	plant	herbaceous	not present	moderate	CDFA
Lycium ferocissimum	African boxthorn	plant	herbaceous	limited	n/a (already in CA)	USDA Plant/Pest
Lyngbya spp.	Lyngbya spp.	plant	algae	Value Required	Value Required	Hoffman NOAA
Lysimachia vulgaris	garden loosestrife	plant	herbaceous	not present	high	WA Weed List
Lythrum hyssopifolium	hyssop loosestrife	plant	herbaceous	widespread	n/a (already in CA)	Cal-IPC list
Lythrum salicaria	purple loosestrife	plant	herbaceous	limited	n/a (already in CA)	CDFA
Lythrum virgatum	purple loosestrife	plant	herbaceous	not present	low	MT Weed List
Malephora crocea	coppery mesembryanthemum	plant	herbaceous	limited	n/a (already in CA)	Med. plants list
Malva neglecta	common mallow	plant	herbaceous	widespread	n/a (already in CA)	Weeds of CA
Malva niaceensis	bull mallow	plant	herbaceous	widespread	n/a (already in CA)	Weeds of CA
Malva parviflora	cheeseweed mallow	plant	herbaceous	widespread	n/a (already in CA)	Weeds of CA
Malva sylvestris	high mallow	plant	herbaceous	widespread	n/a (already in CA)	Weeds of CA
Marrubium vulgare	white horehound	plant	herbaceous	widespread	n/a (already in CA)	Cal-IPC list
Maytenus boaria	mayten	plant	woody	limited	n/a (already in CA)	Med. plants list
Medicago polymorpha	California burclover	plant	herbaceous	widespread	n/a (already in CA)	Cal-IPC list
Melaleuca quinquenervia	broadleaf paper bard tree	plant	woody	not present	low	USDA Plant/Pest

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Melastoma malabathricum	Malabar melastome	plant	woody	not present	low	APHIS
Mentha pulegium	pennyroyal	plant	herbaceous	widespread	n/a (already in CA)	Cal-IPC list
Mesembryanthemum crystallinum	crystalline iceplant	plant	herbaceous	widespread	n/a (already in CA)	Cal-IPC list
Mikania cordata	mile-a-minute	plant	herbaceous	not present	low	USDA Plant/Pest
Mikania micrantha	bittervine	plant	herbaceous	not present	low	USDA Plant/Pest
Milium vernale	milium	plant	grass	not present	low	ID Weed List
Mimosa diplotricha	giant sensitive plant	plant	woody	not present	low	OR Weed List
Mimosa invisa	giant sensitive plant	plant	woody	not present	low	USDA Plant/Pest
Mimosa pellita	lollipop mimosa	plant	woody	not present	low	OR Weed List
Mimosa pigra	catclaw mimosa	plant	woody	not present	low	USDA Plant/Pest
Mirabilis nyctaginea	wild four o-clock	plant	herbaceous	limited	n/a (already in CA)	WA Weed List
Monochoria hastata	arrowleaf falsepickerelweed	plant	herbaceous	not present	low	USDA Plant/Pest
Monochoria vaginalis	heartshape false pickerelweed	plant	herbaceous	limited	n/a (already in CA)	USDA Plant/Pest
Muhlenbergia schreberi	nimblewill	plant	grass	limited	n/a (already in CA)	CDFA
Murdannia keisak	marsh dew flower	plant	herbaceous	not present	moderate	WA Weed List
Myoporum laetum	myoporum	plant	woody	limited	n/a (already in CA)	Cal-IPC list
Myosotis latifolia	common forget-me-not	plant	herbaceous	limited	n/a (already in CA)	Cal-IPC list
Myosoton aquaticum	giant chickweed	plant	herbaceous	not present	moderate	CDFA
Myriophyllum aquaticum	parrotfeather	plant	herbaceous	limited	n/a (already in CA)	Cal-IPC list
Myriophyllum spicatum	Eurasian watermilfoil	plant	herbaceous	widespread	n/a (already in CA)	Cal-IPC list
Najas minor	slender-leaved naiad	plant	herbaceous	not present	moderate	WA Weed List
Nardus stricta	matgrass	plant	grass	not present	moderate	ID Weed List
Nassella trichotoma	serrated tussock	plant	grass	not present	low	USDA Plant/Pest
Nerium oleander	oleander	plant	woody	limited	n/a (already in CA)	Med. plants list
Nicotiana glauca	tree tobacco	plant	woody	widespread	n/a (already in CA)	Cal-IPC list
Nothoscordum inodorum	false garlic	plant	herbaceous	limited	n/a (already in CA)	CDFA
Nymphaea mexicana	banana waterlily	plant	herbaceous	limited	n/a (already in CA)	CDFA
Nymphaea odorata	fragrant waterlily	plant	herbaceous	limited	n/a (already in CA)	WA Weed List
Nymphoides peltata	yellow floating heart	plant	herbaceous	limited	n/a (already in CA)	OR Weed List
Olea europaea	olive	plant	woody	limited	n/a (already in CA)	Cal-IPC list
Ononis alopecuroides	foxtail restharrow	plant	herbaceous	limited	n/a (already in CA)	CDFA
Onopordum acanthium	Scotch thistle	plant	herbaceous	limited	n/a (already in CA)	CDFA

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Onopordum illyricum	Illyrian thistle	plant	herbaceous	limited	n/a (already in CA)	CDFA
Onopordum tauricum	Taurian thistle	plant	herbaceous	limited	n/a (already in CA)	CDFA
Opuntia aurantiaca	jointed prickly pear	plant	herbaceous	not present	low	USDA Plant/Pest
Orobanche cooperi	Cooper's broomrape	plant	herbaceous	limited	n/a (already in CA)	CDFA
Orobanche minor	small broomrape	plant	herbaceous	not present	high	OR Weed List
Orobanche ramosa	branched broomrape	plant	herbaceous	limited	n/a (already in CA)	CDFA
Orobanche spp.	broomrape	plant	herbaceous	limited	n/a (already in CA)	USDA Plant/Pest
Oryza longistaminata	red rice	plant	grass	not present	moderate	USDA Plant/Pest
Oryza punctata	red rice	plant	grass	not present	moderate	USDA Plant/Pest
Oryza rufipogon	red rice	plant	grass	limited	n/a (already in CA)	CDFA
Ottelia alismoides	ducklettuce	plant	herbaceous	not present	high	USDA Plant/Pest
Oxalis corniculata	creeping woodsorrel	plant	herbaceous	widespread	n/a (already in CA)	Weeds of CA
Oxalis pes-caprae	Bermuda buttercup	plant	herbaceous	widespread	n/a (already in CA)	Cal-IPC list
Panicum antidotale	blue panicgrass	plant	grass	limited	n/a (already in CA)	CDFA
Panicum miliaceum	wild proso millet	plant	grass	limited	n/a (already in CA)	CO Weed List
Panicum repens	torpedo grass	plant	grass	limited	n/a (already in CA)	AZ Weed List
Parentucellia viscosa	yellow glandweed	plant	herbaceous	limited	n/a (already in CA)	Cal-IPC list
Paspalum scrobiculatum	Kodo-millet	plant	grass	not present	low	USDA Plant/Pest
Peganum harmala	harmel	plant	herbaceous	not present	high	No list
Pennisetum ciliare	buffelgrass	plant	grass	limited	n/a (already in CA)	AZ Weed List
Pennisetum clandestinum	kikuyugrass	plant	grass	widespread	n/a (already in CA)	OR Weed List
Pennisetum macrourum	African feathergrass	plant	grass	not present	low	USDA Plant/Pest
Pennisetum pedicellatum	Kyasumagrass	plant	grass	not present	low	USDA Plant/Pest
Pennisetum polystachion	missiongrass	plant	grass	not present	low	USDA Plant/Pest
Pennisetum setaceum	crimson fountaingrass	plant	grass	widespread	n/a (already in CA)	Cal-IPC list
Pennisetum villosum	feathergrass	plant	grass	limited	n/a (already in CA)	No list
Phalaris aquatica	hardinggrass	plant	grass	widespread	n/a (already in CA)	Cal-IPC list
Phalaris arundinacea	reed canarygrass	plant	grass	limited	n/a (already in CA)	WA Weed List
Phoenix canariensis	Canary Island date palm	plant	woody	limited	n/a (already in CA)	No list
Phragmites australis	common reed	plant	grass	limited	n/a (already in CA)	Cal-IPC list
Physalis longifolia	long-leaf groundcherry	plant	herbaceous	not present	moderate	CDFA
Physalis viscosa	grape groundcherry	plant	herbaceous	limited	n/a (already in CA)	CDFA
Phytolacca americana	common pokeweed	plant	herbaceous	widespread	n/a (already in CA)	Cal-IPC list

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Picris echioides	bristly oxtongue	plant	herbaceous	widespread	n/a (already in CA)	Cal-IPC list
Picris hieracioides	hawkweed oxtongue	plant	herbaceous	not present	moderate	WA Weed List
Piptatherum miliaceum	smilograss	plant	grass	widespread	n/a (already in CA)	Cal-IPC list
Pittosporum undulatum	Victorian box	plant	woody	limited	n/a (already in CA)	Med. plants list
Plantago lanceolata	buckhorn plantain	plant	herbaceous	widespread	n/a (already in CA)	Cal-IPC list
Poa pratensis	Kentucky bluegrass	plant	grass	widespread	n/a (already in CA)	Cal-IPC list
Polygonum arenastrum	oval leaf knotweed	plant	herbaceous	widespread	n/a (already in CA)	Weeds of CA
Polygonum cuspidatum	Japanese knotweed	plant	woody	limited	n/a (already in CA)	CDFA
Polygonum polystachyum	Himalayan knotweed	plant	herbaceous	limited	n/a (already in CA)	CDFA
Polygonum sachalinense	Sakhalin knotweed	plant	herbaceous	limited	n/a (already in CA)	CDFA
Polygonum x bohemicum	Bohemian knotweed	plant	herbaceous	not present	moderate	WA Weed List
Polypogon monspeliensis and subspp.	rabbitfoot polypogon	plant	grass	widespread	n/a (already in CA)	Cal-IPC list
Pontederia cordata	pickerelweed	plant	herbaceous	not present	moderate	CDFA
Portulaca oleracea	common purslane	plant	herbaceous	widespread	n/a (already in CA)	Weeds of CA
Potamogeton crispus	curlyleaf pondweed	plant	herbaceous	widespread	n/a (already in CA)	Cal-IPC list
Potentilla recta	sulfur cinquefoil	plant	herbaceous	limited	n/a (already in CA)	CDFA
Proboscidea louisianica	unicorn-plant	plant	herbaceous	widespread	n/a (already in CA)	WA Weed List
Prosopis alpataco	mesquite	plant	woody	not present	low	USDA Plant/Pest
Prosopis argentina	mesquite	plant	woody	not present	low	USDA Plant/Pest
Prosopis articulata	mesquite	plant	woody	not present	low	USDA Plant/Pest
Prosopis burkartii	mesquite	plant	woody	not present	low	USDA Plant/Pest
Prosopis caldenia	mesquite	plant	woody	not present	low	USDA Plant/Pest
Prosopis calingastana	cusqui	plant	woody	not present	low	USDA Plant/Pest
Prosopis campestris	mesquite	plant	woody	not present	low	USDA Plant/Pest
Prosopis castellanosii	mesquite	plant	woody	not present	low	USDA Plant/Pest
Prosopis denudans	mesquite	plant	woody	not present	low	USDA Plant/Pest
Prosopis elata	mesquite	plant	woody	not present	low	USDA Plant/Pest
Prosopis farcta	mesquite	plant	woody	not present	low	USDA Plant/Pest
Prosopis ferox	mesquite	plant	woody	not present	low	USDA Plant/Pest
Prosopis fiebrigii	mesquite	plant	woody	not present	low	USDA Plant/Pest
Prosopis hassleri	mesquite	plant	woody	not present	low	USDA Plant/Pest
Prosopis humilis	mesquite	plant	woody	not present	low	USDA Plant/Pest
Prosopis kuntzei	mesquite	plant	woody	not present	low	USDA Plant/Pest

Scientific Name	Common Name	Type	Subtype	Extent	Risk of Introduction	First Source
Prosopis pallida	mesquite	plant	woody	not present	low	USDA Plant/Pest
Prosopis palmeria	mesquite	plant	woody	not present	low	USDA Plant/Pest
Prosopis reptans	mesquite	plant	woody	not present	low	USDA Plant/Pest
Prosopis rojasiana	mesquite	plant	woody	not present	low	USDA Plant/Pest
Prosopis ruizlealii	mesquite	plant	woody	not present	low	USDA Plant/Pest
Prosopis ruscifolia	mesquite	plant	woody	not present	low	USDA Plant/Pest
Prosopis sericantha	mesquite	plant	woody	not present	low	USDA Plant/Pest
Prosopis strombulifera	creeping mesquite	plant	woody	not present	moderate	USDA Plant/Pest
Prosopis torquata	mesquite	plant	woody	not present	low	USDA Plant/Pest
Prosopis velutina	mesquite	plant	woody	limited	n/a (already in CA)	USDA Plant/Pest
Prunus cerasifera	cherry plum	plant	woody	widespread	n/a (already in CA)	Cal-IPC list
Pueraria montana var. lobata	kudzu	plant	herbaceous	not present	moderate	OR Weed List
Pyracantha angustifolia	pyracantha	plant	woody	limited	n/a (already in CA)	Cal-IPC list
Pyracantha coccinea	pyracantha	plant	woody	limited	n/a (already in CA)	Cal-IPC list
Pyracantha crenulata	pyracantha	plant	woody	limited	n/a (already in CA)	Cal-IPC list
Ranunculus acris	tall buttercup	plant	herbaceous	limited	n/a (already in CA)	MT Weed List
Ranunculus repens	creeping buttercup	plant	herbaceous	widespread	n/a (already in CA)	Cal-IPC list
Raphanus raphanistrum	wild radish	plant	herbaceous	widespread	n/a (already in CA)	Weeds of CA
Raphanus sativus	radish	plant	herbaceous	widespread	n/a (already in CA)	Cal-IPC list
Retama monosperma	bridal broom	plant	woody	limited	n/a (already in CA)	CDFA
Ricinus communis	castorbean	plant	herbaceous	widespread	n/a (already in CA)	Cal-IPC list
Robinia pseudoacacia	black locust	plant	woody	limited	n/a (already in CA)	Cal-IPC list
Rorippa austriaca	Austrian field cress	plant	herbaceous	limited	n/a (already in CA)	CDFA
Rorippa sylvestris	creeping yellow field cress	plant	herbaceous	limited	n/a (already in CA)	CDFA
Rottboellia cochinchinensis	itchgrass	plant	grass	not present	moderate	USDA Plant/Pest
Rubus armeniacus	Himalaya blackberry	plant	woody	widespread	n/a (already in CA)	CDFA
Rubus moluccanus	wild raspberry	plant	woody	not present	low	USDA Plant/Pest
Rumex acetosella	red sorrel	plant	herbaceous	widespread	n/a (already in CA)	Cal-IPC list
Rumex crispus	curly dock	plant	herbaceous	widespread	n/a (already in CA)	Cal-IPC list
Saccharum ravennae	ravennagrass	plant	grass	limited	n/a (already in CA)	Cal-IPC list
Saccharum spontaneum	wild sugarcane	plant	grass	not present	low	USDA Plant/Pest
Sagittaria graminea	grass-leaved arrowhead	plant	herbaceous	not present	high	WA Weed List

Scientific Name	Common Name	Type	Subtype	Extent	Risk of Introduction	First Source
Sagittaria sagittifolia	arrowhead	plant	herbaceous	not present	low	USDA Plant/Pest
Salsola collina	spineless Russian thistle	plant	herbaceous	not present	high	CDFA
Salsola paulsenii	barbwire Russian-thistle	plant	herbaceous	widespread	n/a (already in CA)	CDFA
Salsola soda	oppositeleaf Russian thistle	plant	herbaceous	limited	n/a (already in CA)	Cal-IPC list
Salsola tragus	Russian-thistle	plant	herbaceous	widespread	n/a (already in CA)	CDFA
Salsola vermiculata	wormleaf salsola	plant	herbaceous	not present	low	CDFA
Salvia aethiopis	Mediterranean sage	plant	herbaceous	limited	n/a (already in CA)	CDFA
Salvia pratensis	meadow clary	plant	herbaceous	not present	moderate	WA Weed List
Salvia sclarea	clary sage	plant	herbaceous	not present	moderate	WA Weed List
Salvia virgata	southern meadow sage	plant	herbaceous	not present	moderate	CDFA
Salvinia auriculata	giant salvinia	plant	herbaceous	not present	low	USDA Plant/Pest
Salvinia biloba	giant salvinia	plant	herbaceous	limited	n/a (already in CA)	USDA Plant/Pest
Salvinia herzogii	giant salvinia	plant	herbaceous	limited	n/a (already in CA)	USDA Plant/Pest
Salvinia molesta	giant salvinia	plant	herbaceous	limited	n/a (already in CA)	Cal-IPC list
Sapium sebiferum	Chinese tallowtree	plant	woody	limited	n/a (already in CA)	Cal-IPC list
Saponaria officinalis	bouncingbet	plant	herbaceous	limited	n/a (already in CA)	Cal-IPC list
Sargassum horneri	Asian seaweed	plant	algae	limited	moderate	Hoffman NOAA
Sargassum muticum	Sargassum muticum	plant	algae	limited	low	Hoffman NOAA
Schinus molle	Peruvian peppertree	plant	woody	limited	n/a (already in CA)	Cal-IPC list
Schinus terebinthifolius	Brazilian peppertree	plant	woody	limited	n/a (already in CA)	Cal-IPC list
Schismus arabicus	mediterraneangrass	plant	grass	widespread	n/a (already in CA)	Cal-IPC list
Schismus barbatus	mediterraneangrass	plant	grass	widespread	n/a (already in CA)	Cal-IPC list
Scolymus hispanicus	golden thistle	plant	herbaceous	limited	n/a (already in CA)	CDFA
Secale cereale	cereal rye	plant	grass	widespread	n/a (already in CA)	WA Weed List
Senecio inaequidens	South African ragwort	plant	woody	not present	low	USDA Plant/Pest
Senecio jacobaea	tansy ragwort	plant	herbaceous	limited	n/a (already in CA)	CDFA
Senecio linearifolius	narrowleaf ragwort	plant	herbaceous	not present	low	CDFA
Senecio madagascariensis	Madagascar ragwort	plant	herbaceous	not present	moderate	USDA Plant/Pest
Senecio squalidus	Oxford ragwort	plant	herbaceous	not present	low	CDFA
Senecio vulgaris	old-man-in-the-spring	plant	herbaceous	widespread	n/a (already in CA)	Weeds of CA
Senna obtusifolia	sicklepod	plant	herbaceous	limited	n/a (already in CA)	CDFA
Sesbania punicea	red sesbania	plant	woody	limited	n/a (already in CA)	Cal-IPC list

Scientific Name	Common Name	Type	Subtype	Extent	Risk of Introduction	First Source
Setaria faberi	giant foxtail	plant	grass	widespread	n/a (already in CA)	CDFA
Setaria pumila	yellow foxtail	plant	grass	widespread	n/a (already in CA)	Weeds of CA
Setaria pumila ssp. pallidefusca	cattail grass	plant	grass	not present	moderate	USDA Plant/Pest
Setaria viridis	green bristlegrass	plant	grass	widespread	n/a (already in CA)	Weeds of CA
Silene latifolia ssp. alba	bladder campion	plant	herbaceous	limited	n/a (already in CA)	WA Weed List
Silybum marianum	blessed milkthistle	plant	herbaceous	widespread	n/a (already in CA)	Cal-IPC list
Sinapis arvensis	wild mustard	plant	herbaceous	widespread	n/a (already in CA)	Cal-IPC list
Sisymbrium irio	London rocket	plant	herbaceous	widespread	n/a (already in CA)	Cal-IPC list
Solanum cardiophyllum	heartleaf nightshade	plant	herbaceous	not present	low	CDFA
Solanum carolinense	Carolina horsenettle	plant	herbaceous	limited	n/a (already in CA)	CDFA
Solanum dimidiatum	Torrey's nightshade	plant	herbaceous	limited	n/a (already in CA)	CDFA
Solanum elaeagnifolium	silverleaf nightshade	plant	herbaceous	limited	n/a (already in CA)	CDFA
Solanum lanceolatum	lanceleaf nightshade	plant	herbaceous	limited	n/a (already in CA)	CDFA
Solanum marginatum	white-margined nightshade	plant	woody	limited	n/a (already in CA)	CDFA
Solanum nigrum	black nightshade	plant	herbaceous	widespread	n/a (already in CA)	Weeds of CA
Solanum physalifolium	hoe nightshade	plant	herbaceous	widespread	n/a (already in CA)	Weeds of CA
Solanum rostratum	buffalobur	plant	herbaceous	limited	n/a (already in CA)	ID Weed List
Solanum tampicense	wetland nightshade	plant	woody	not present	low	USDA Plant/Pest
Solanum torvum	turkeyberry	plant	woody	not present	low	USDA Plant/Pest
Solanum viarum	tropical soda apple	plant	herbaceous	not present	low	USDA Plant/Pest
Soliva sessilis	lawnweed	plant	herbaceous	widespread	n/a (already in CA)	WA Weed List
Sonchus arvensis	perennial sowthistle	plant	herbaceous	limited	n/a (already in CA)	CDFA
Sonchus oleraceaus	common sowthistle	plant	herbaceous	widespread	n/a (already in CA)	Weeds of CA
Sorghum almum	Columbus grass	plant	grass	not present	moderate	NV Weed List
Sorghum bicolor	perennial sweet Sudan	plant	grass	limited	n/a (already in CA)	NV Weed List
Sorghum halepense	johnsongrass	plant	grass	widespread	n/a (already in CA)	WA Weed List
Sorghum propinquum	sorghum	plant	grass	not present	low	NV Weed List
Sparganium erectum	exotic bur reed	plant	herbaceous	limited	n/a (already in CA)	USDA Plant/Pest
Spartina alterniflora	smooth cordgrass and hybrids	plant	grass	limited	n/a (already in CA)	Cal-IPC list
Spartina alterniflora x foliosa hybrids	smooth cordgrass and hybrids	plant	grass	limited	n/a (already in CA)	Cal-IPC list
Spartina anglica	common cordgrass	plant	grass	limited	n/a (already in CA)	Cal-IPC list
Spartina densiflora	dense-flowered cordgrass	plant	grass	limited	n/a (already in CA)	Cal-IPC list

Scientific Name	Common Name	Type	Subtype	Extent	Risk of Introduction	First Source
Spartina patens	saltmeadow cord grass	plant	grass	limited	n/a (already in CA)	Cal-IPC list
Spartium junceum	Spanish broom	plant	woody	widespread	n/a (already in CA)	Cal-IPC list
Spermacoce alata	winged false buttonweed	plant	herbaceous	not present	low	USDA Plant/Pest
Sphaerophysa salsula	Austrian peaweed	plant	herbaceous	limited	n/a (already in CA)	CDFA
Stellaria media	common chickweed	plant	herbaceous	widespread	n/a (already in CA)	Weeds of CA
Stipa capensis	Mediterranean steppegrass	plant	grass	limited	n/a (already in CA)	Cal-IPC list
Striga asiatica	witchweed	plant	herbaceous	not present	moderate	CDFA
Striga spp.	witchweed	plant	herbaceous	not present	high	USDA Plant/Pest
Symphytum asperum	rough comfrey	plant	herbaceous	limited	n/a (already in CA)	CDFA
Taeniatherum caput-medusae	medusahead	plant	grass	widespread	n/a (already in CA)	CDFA
Tagetes minuta	wild marigold	plant	herbaceous	not present	moderate	CDFA
Tamarix aphylla	athel tamarisk	plant	woody	limited	n/a (already in CA)	Cal-IPC list
Tamarix chinensis	salt cedar	plant	woody	limited	n/a (already in CA)	CO Weed List
Tamarix parviflora	smallflower tamarisk	plant	woody	widespread	n/a (already in CA)	Cal-IPC list
Tamarix ramosissima	saltcedar	plant	woody	widespread	n/a (already in CA)	Cal-IPC list
Tanacetum vulgare	common tansy	plant	herbaceous	limited	n/a (already in CA)	Cal-IPC list
Thymelaea passerina	spurge flax	plant	herbaceous	not present	moderate	WA Weed List
Torilis arvensis	hedgeparsley	plant	herbaceous	widespread	n/a (already in CA)	Cal-IPC list
Trapa bicornis	water caltrap	plant	herbaceous	not present	low	WA Weed List
Trapa natans	water-chestnut	plant	herbaceous	not present	moderate	AZ Weed List
Tribulus terrestris	puncturevine	plant	herbaceous	widespread	n/a (already in CA)	CDFA
Tridax procumbens	coat buttons	plant	herbaceous	not present	low	USDA Plant/Pest
Trifolium hirtum	rose clover	plant	herbaceous	widespread	n/a (already in CA)	Cal-IPC list
Tripleurospermum perforatum	scentless false mayweed	plant	herbaceous	not present	low	CO Weed List
Tussilago farfara	coltsfoot	plant	herbaceous	not present	moderate	OR Weed List
Ulex europaeus	gorse	plant	woody	limited	n/a (already in CA)	CDFA
Ulmus pumila	Siberian elm	plant	woody	limited	n/a (already in CA)	Med. plants list
Undaria pinnatifida	wakame	plant	algae	widespread	n/a (already in CA)	Cal-IPC list
Urochloa panicoides	liverseed grass	plant	grass	not present	high	USDA Plant/Pest
Utricularia inflata	swollen bladderwort	plant	herbaceous	not present	moderate	WA Weed List
Vallisneria spp.	eelgrass	plant	herbaceous	not present	high	CDFA
Verbascum blattaria	moth mullein	plant	herbaceous	limited	n/a (already in CA)	CO Weed List

Scientific Name	Common Name	Type	Subtype	Extent	Risk of Introduction	First Source
Verbascum thapsus	common mullein	plant	herbaceous	widespread	n/a (already in CA)	Cal-IPC list
Verbena litoralis	tall vervain	plant	herbaceous	widespread	n/a (already in CA)	Cal-IPC list
Vicia sativa	garden vetch	plant	herbaceous	widespread	n/a (already in CA)	Weeds of CA
Vicia villosa	hairy vetch	plant	herbaceous	widespread	n/a (already in CA)	Weeds of CA
Vinca major	big periwinkle	plant	herbaceous	widespread	n/a (already in CA)	Cal-IPC list
Viscum album	European mistletoe	plant	herbaceous	limited	n/a (already in CA)	CDFA
Vulpia myuros	rattail fescue	plant	grass	widespread	n/a (already in CA)	Cal-IPC list
Washingtonia robusta	Mexican fan palm	plant	woody	limited	n/a (already in CA)	Cal-IPC list
Watsonia meriana	bulbil watsonia	plant	herbaceous	limited	n/a (already in CA)	Cal-IPC list
Zantedeschia aethiopica	calla lily	plant	herbaceous	limited	n/a (already in CA)	Cal-IPC list
Zostera japonica	Japanese eelgrass	plant	herbaceous	limited	n/a (already in CA)	CDFA
Zygophyllum fabago	Syrian beancaper	plant	herbaceous	limited	n/a (already in CA)	CDFA

Species	Type	Subtype	Impact	Ability to Respond	Confidence	Extent
Aegilops triuncialis barb goatgrass	plant	grass	23	10	high	widespread
Ailanthus altissima tree-of-heaven	plant	woody	14	12	high	widespread
Allaria petiolata garlic mustard	plant	herbaceous	10	3	medium	not present
Alternanthera philoxeroides alligator weed	plant	herbaceous	17	15	medium	limited
Ammophila arenaria European beachgrass	plant	grass	13	8	high	widespread
Arctotheca calendula (fertile) fertile capeweed	plant	herbaceous	4	21	high	limited
Arctotheca calendula (sterile) sterile capeweed	plant	herbaceous	3	8	high	limited
Arundo donax giant reed	plant	grass	15	14	high	widespread
Ascophyllum nodosum common brown algae	plant	algae	10	7	high	limited
Avena barbata slender wild oat	plant	grass	4	9	high	widespread
Avena fatua wild oat	plant	grass	9	9	high	widespread
Brassica nigra black mustard	plant	herbaceous	9	5	high	widespread
Brassica tournefortii Saharan mustard	plant	herbaceous	10	9	medium	limited
Bromus diandrus ripgut brome	plant	grass	18	9	high	widespread
Bromus hordeaceus soft brome	plant	grass	7	9	high	widespread
Bromus madritensis ssp. rubens red brome	plant	grass	17	8	high	widespread
Bromus tectorum downy brome	plant	grass	17	8	high	widespread
Cabomba caroliniana Carolina fanwort	plant	herbaceous	16	7	medium	limited
Cardaria draba hoary cress	plant	herbaceous	11	12	high	widespread
Carpobrotus edulis iceplant	plant	herbaceous	8	13	high	widespread
Carthamus lanatus woolly distaff thistle	plant	herbaceous	18	12	high	widespread

Species	Type	Subtype	Impact	Ability to Respond	Confidence	Extent
Caulerpa brachypus Caulerpa brachypus	plant	algae	10	7	medium	unknown
Caulerpa racemosa Caulerpa racemosa	plant	algae	12	11	medium	VALUE REQUIRED
Caulerpa taxifolia Mediterranean strain	plant	algae	14	11	high	limited
Centaurea calcitrapa purple starthistle	plant	herbaceous	19	12	high	widespread
Centaurea solstitialis yellow starthistle	plant	herbaceous	19	13	high	widespread
Centaurea stoebe ssp. micranthos spotted knapweed	plant	herbaceous	17	15	medium	limited
Cirsium arvense Canada thistle	plant	herbaceous	20	11	high	widespread
Cirsium vulgare bull thistle	plant	herbaceous	18	8	high	widespread
Conium maculatum poison-hemlock	plant	herbaceous	16	6	high	widespread
Convolvulus arvensis field bindweed	plant	herbaceous	8	7	high	widespread
Cortaderia jubata jubatagrass	plant	grass	12	14	high	widespread
Cortaderia selloana pampasgrass	plant	grass	9	13	high	widespread
Cuscuta japonica Japanese dodder	plant	herbaceous	18	21	high	limited
Cuscuta spp. (C. japonica, reflexa, australia, monogyna) Dodder (non-native spp.)	plant	herbaceous	20	20	high	limited
Cynoglossum officinale houndstongue	plant	herbaceous	8	7	high	limited
Cyperus rotundus purple nutsedge	plant	herbaceous	8	10	high	widespread
Cytisus scoparius Scotch broom	plant	woody	18	13	high	widespread
Delairea odorata Cape-ivy	plant	herbaceous	12	13	high	widespread
Dittrichia graveolens stinkwort	plant	herbaceous	11	8	high	widespread
Egeria densa Brazilian egeria	plant	herbaceous	21	11	high	widespread

Species	Type	Subtype	Impact	Ability to Respond	Confidence	Extent
Ehrharta calycina purple veldtgrass	plant	grass	9	7	high	widespread
Eichhornia crassipes water hyacinth	plant	herbaceous	18	12	high	widespread
Elaeagnus angustifolia Russian-olive	plant	woody	8	9	high	limited
Eucalyptus globulus Tasmanian blue gum	plant	woody	12	9	high	widespread
Euphorbia esula leafy spurge	plant	herbaceous	17	15	high	limited
Foeniculum vulgare fennel	plant	herbaceous	8	11	high	widespread
Genista monspessulana French broom	plant	woody	18	10	high	widespread
Glyceria declinata waxy mannagrass	plant	grass	13	3	medium	limited
Heracleum mantegazzianum giant hogweed	plant	herbaceous	11	5	medium	not present
Hydrilla verticillata hydrilla	plant	herbaceous	21	16	high	limited
Hygrophila polysperma Miramar weed	plant	herbaceous	19	7	medium	not present
Hypericum perforatum common St. John's wort	plant	herbaceous	11	11	high	widespread
Ipomoea aquatica swamp morningglory	plant	herbaceous	17	11	high	limited
Isatis tinctoria dyer's woad	plant	herbaceous	6	12	high	widespread
Lagarosiphon major oxygenweed	plant	herbaceous	16	7	medium	not present
Lepidium latifolium perennial pepperweed	plant	herbaceous	18	12	high	widespread
Linaria genistifolia ssp. dalmatica Dalmatian toadflax	plant	herbaceous	11	15	high	limited
Lolium multiflorum Italian ryegrass	plant	grass	10	9	high	widespread
Lythrum salicaria purple loosestrife	plant	herbaceous	14	13	high	limited
Mentha pulegium pennyroyal	plant	herbaceous	9	6	medium	widespread

Species	Type	Subtype	Impact	Ability to Respond	Confidence	Extent
Mesembryanthemum crystallinum crystalline iceplant	plant	herbaceous	1	10	high	widespread
Monochoria vaginalis heartshape false pickerelweed	plant	herbaceous	12	13	high	limited
Myriophyllum aquaticum parrotfeather	plant	herbaceous	18	10	high	limited
Myriophyllum spicatum Eurasian watermilfoil	plant	herbaceous	21	10	high	widespread
Onopordum acanthium Scotch thistle	plant	herbaceous	19	13	high	limited
Orobanche cooperi Cooper's broomrape	plant	herbaceous	6	8	medium	limited
Orobanche ramosa branched broomrape	plant	herbaceous	13	14	high	limited
Oryza rufipogon red rice	plant	grass	6	16	low	limited
Pennisetum ciliare buffelgrass	plant	grass	11	6	high	limited
Pennisetum setaceum crimson fountaingrass	plant	grass	6	10	high	widespread
Polygonum cuspidatum Japanese knotweed	plant	woody	16	15	high	limited
Potamogeton crispus curlyleaf pondweed	plant	herbaceous	19	4	high	widespread
Pueraria montana var. lobata kudzu	plant	herbaceous	12	6	high	not present
Raphanus sativus radish	plant	herbaceous	10	5	high	widespread
Ricinus communis castorbean	plant	herbaceous	7	7	high	widespread
Robinia pseudoacacia black locust	plant	woody	1	11	high	limited
Rubus armeniacus Himalaya blackberry	plant	woody	16	5	high	widespread
Salsola tragus Russian-thistle	plant	herbaceous	16	7	high	widespread
Salvinia molesta giant salvinia	plant	herbaceous	23	15	high	limited
Sapium sebiferum Chinese tallowtree	plant	woody	5	9	high	limited
Schinus molle Peruvian peppertree	plant	woody	4	10	high	limited

Species	Type	Subtype	Impact	Ability to Respond	Confidence	Extent
Schinus terebinthifolius Brazilian peppertree	plant	woody	7	10	high	limited
Senecio jacobaea tansy ragwort	plant	herbaceous	11	14	high	limited
Sesbania punicea red sesbania	plant	woody	19	15	high	limited
Sorghum halepense johnsongrass	plant	grass	6	9	high	widespread
Spartina alterniflora x foliosa hybrids smooth cordgrass and hybrids	plant	grass	19	14	high	limited
Striga asiatica witchweed	plant	herbaceous	16	17	high	not present
Taeniatherum caput-medusae medusahead	plant	grass	25	10	high	widespread
Tamarix parviflora smallflower tamarisk	plant	woody	16	17	high	widespread
Tamarix ramosissima saltcedar	plant	woody	16	15	high	widespread
Trapa natans water-chestnut	plant	herbaceous	19	5	medium	not present
Ulex europaeus gorse	plant	woody	12	16	high	limited
Undaria pinnatifida wakame	plant	algae	18	3	high	widespread
Vinca major big periwinkle	plant	herbaceous	8	9	high	widespread

Appendix I. Preparers Qualifications

Mr. Lincoln Hulse authored this document. Mr. Hulse has a B.S. from Northern Arizona University, and more than 10 years of professional experience in environmental permitting, compliance, biological resource assessment, identification, and restoration. He has prepared numerous biological reports and assessments to document compliance with NEPA, CEQA, Caltrans, FHWA, CWA, USACE, CDFG, RWQCB, and state and federal ESAs.