CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION

2375 Northside Drive, Suite.100, San Diego, CA 92108
Phone (619) 516-1990 • Fax (619) 516-1994
http://www.waterboards.ca.gov/sandiego/

Clean Water Act Section 401 Water Quality Certification
and Waste Discharge Requirements
for Discharge of Dredged and/or Fill Materials

PROJECT: **San Luis Rey Flood Control**
Certification Number R9-2015-0161
WDID: 9000002906

Reg. Meas. ID: 403087
Place ID: 818549
Party ID: 47607
Person ID: 553241

APPLICANTS: **U.S. Army Corps of Engineer**
915 Wilshire Boulevard, Suite 930
Los Angeles, CA 90017

City of Oceanside
300 North Coast Hwy
Oceanside, CA 92054

ACTION:

☐ Order for Low Impact Certification	☐ Order for Denial of Certification
☑ Order for Technically-conditioned Certification	☐ Enrollment in Isolated Waters Order No. 2004-004-DWQ
☑ Enrollment in SWRCB GWDR Order No. 2003-017-DWQ	

PROJECT DESCRIPTION

An application dated September 30, 2015 was jointly submitted by the U.S. Army Corps of Engineers (USACE) and the City of Oceanside (City) (hereinafter Applicants), for Water Quality Certification pursuant to section 401 of the Clean Water Act (United States Code (USC) Title 33, section 1341) for the proposed San Luis Rey River Flood Risk Management Project (Project). The California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) deemed the application to be complete on August 24, 2016. The Applicants proposes to discharge dredged or fill material to waters of the United States and/or State associated with construction activity at the Project site. The City has also applied for a Clean Water Act section 404 permit from the United States Army Corps of Engineers for the Project (USACE File No. 2010-00587-RRS). Vegetation management and sediment excavation were previously authorized in the San Luis Rey River floodplain under Water Quality Certifications 05C-0127 and 07C-019.

The Project is located along the lower seven miles of the San Luis Rey River between Interstate 5 east to College Boulevard in the City of Oceanside, San Diego County, California. The Project center reading is located at latitude 33.220278 and longitude -117.358217. The City has paid all required application fees for this Certification in the amount of $90,000.00 and is also responsible for payment of any required annual active

discharge fee and post discharge monitoring fee[1]. On August 28, 2016 the San Diego Water Board provided public notice of the Project application pursuant to California Code of Regulations, title 23, section 3858 by posting information describing the Project on the San Diego Water Board's web site and providing a period of twenty-one days for public review and comment. No comments were received.

The Applicants propose to implement a vegetation and sediment removal program within the Project area to attain and maintain the authorized flow conveyance in the San Luis Rey River channel. Under the proposed program the Applicants will continue vegetation management (i.e. mowing vegetation) and discharge of removed vegetation in the lower 7.2 miles of the San Luis Rey River and floodplain within the constructed flood control channel. The Applicants also propose removal of up to 250,000 cubic yards (cy) of sediment in the initial sediment removal action and an estimated average removal of 52,000 cy of sediment approximately every five years thereafter.

The flood protection Project was authorized by Congress in 1970, with initial construction activities to be undertaken in 1990 and completed in 2000. The San Luis Rey River channel was designed and constructed to attain a Standard Project Flood (SPF) of 89,000 cubic feet per second (cfs). The flow conveyance capacity was adjusted in 2008 to convey 71,200 cfs. Currently the channel has a capacity ranging from approximately 19,000 cfs at the downstream end to 71,200 cfs at the upstream end of the Project. After all phases of mowing vegetation and sediment removal are implemented, the channel will have a restored SPF capacity of 71,200 cfs.

Annual vegetation management within the Project area involves three phases of annual mowing activities (Phase 1, 2, and 3). Each phase consists of a particular maintained swath (area) within the Project boundary. In addition to annual mowing, rotational vegetation management (Rotations 1 and 2) consists of two swaths mowed in selected reaches, with each swath cleared every 10 years. Together, Phases 1, 2, and 3 and Rotations 1 and 2 comprise the mowed and treated flood risk management operation and management zone.

Phase 1 mowing activities were completed in the first year of the Project (2008). Aerial photography taken of the Project area after the completion of Phase 1 was used as a frame of reference to prepare a topographic map of the San Luis Rey River channel. The topographic map was used to 1) identify the current elevation of the San Luis Rey River's invert to determine whether the sediment load has breached the design upper bed elevation limit, and 2) provide data for the USACE to perform a detailed hydraulic analysis to verify that there was a minimum capacity of 53,000 cfs within the flow conveyance zone. The USACE determined that all 3 Phases of vegetation management and any potential sediment removal were required to achieve the SPF capacity of 71,200 cfs.

The USACE completed Phase 2 vegetation management activities in 2012 and Phase 3 in 2015. Rotation 1 and 2 vegetation management was completed in 2015. The USACE plans to remove sediment from designated Sediment Management Action Areas in the fall of 2017, followed by further sediment removal from the maintained area of the channel as

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Additional information regarding fees can be found electronically on the State Water Resources Control Board web site at the following location: http://www.waterboards.ca.gov/water_issues/programs/cwa401/docs/dredgefillcalculator.xlsx

needed, approximately every five years by the City. After completion of the initial vegetation removal and sediment removal activities, the City will assume responsibility for long-term operation and maintenance of the Project.

The areas referred to as Phase 1, Phase 2, and Phase 3 are to be mowed on a regular schedule in order to maintain the SPF capacity of 71,200 cfs. This frequency may be reduced based on performance criteria being developed. Phase 3, Rotation strips 1 and 2 are each mowed every 10 years with a 5 year offset. The initial mowing of these phases is complete. Initial mowing resulted in the manipulation of approximately 197.57 acres of riparian vegetation. All further mowing of vegetation will be accomplished by the Applicants under the guidelines of the project's Operations, Maintenance, Repair, Replacement, and Rehabilitation (OMRR&R) Manual.

Sediment Management Action Areas

Since sediment deposition is variable over the long-term maintenance of the Project area, the amount and location of sediment deposition within the Project may vary year to year. Upon review of the 2015 discharge analysis, the USACE has determined that sediment removal is necessary. In coordination with the City, California Department of Fish and Wildlife (CDFW), United States Fish and Wildlife (USFWS), California Coastal Commission (CCC), and the San Diego Water Board, initial sediment removal is anticipated to commence in 2017. Approximately 250,000 cy of material will be removed from the Sediment Management Action Areas, during this initial sediment removal operation.

Excavated sediment that is acceptable for beach replenishment will be used for shoreline beach sand replenishment within the City limits. The designated beach sand replenishment area is currently between Seagaze Drive and Pine Street in the City of Oceanside. Unsuitable material and non-beach quality sand will be stored at the El Corazon Compost Facility.

Topographic surveys within the San Luis Rey River will be completed every five years after the completion of Phase 3 mowing activities or after any year with a peak discharge event greater than 5,000 cfs. The City will apply the criteria used for the initial sediment removal as described in the Hydraulics Report in the *Final Integrated Post Authorization Decision Document Supplemental Environmental Impact Statement/Environmental Impact Report for the San Luis Rey River Flood Control Project* (FEIR), July 2007, to determine where and how much sediment to remove.

Nonnative Species Removal

The 1987 Biological Opinion by USFWS required the USACE to keep the Project Area, including the compensation areas free of invasive non-native plant species such as giant reed (*Arundo donax*), salt cedar (*Tamarix ramosissima*), castor bean (*Ricinus communis*), tree tobacco (*Nicotiana glauca*), and pampas grass (*Cortaderia selloana*). Therefore, non-native species eradication activities will continue in perpetuity within the Project area on an annual basis, in accordance with the Project's Adaptive Habitat Management Plan.

Arundo has been mowed and shredded to prevent re-sprouting of cut segments. Following mowing, the invasive exotic plants have been treated with herbicide or other appropriate

methods. *Arundo* eradication has been ongoing since 2007. Future mowing and treatment of *Arundo* in the Project footprint will likely be on a smaller scale than previous efforts.

The Project is a Flood Risk Management Project that includes channel maintenance and environmental mitigation components. No new structures or modifications are proposed and the Project will not convert any pervious ground cover to impervious surfaces. Runoff leaving the developed Project area will not be significantly greater in volume, velocity, peak flow rate, and duration than pre-development runoff from the same area without mitigation. Post-construction best management practices (BMPs) will consist of minimizing disturbance of open water and freshwater marsh habitat. Trucks transporting sediment will be limited to existing access ramps and roads. No new roads will be graded or cleared for sediment removal however minor vegetation clearing might be necessary for some truck access routes. When crossing the wetted portions of the San Luis Rey River with heavy equipment, National Marine Fisheries Service (NMFS) has listed recommendations for avoidance and minimization of impacts to species.

The Project application includes a description of the design objective, operation, and degree of treatment expected to be attained from equipment, facilities, or activities (including construction and post-construction BMPs) to treat waste and reduce runoff or other effluents which may be discharged. Compliance with the Certification conditions will help ensure that construction and post-construction discharges from the Project will not cause on-site or off-site downstream erosion, damage to downstream properties, or otherwise damage stream habitats in violation of water quality standards in the *Water Quality Control Plan for the San Diego Basin (9)* (Basin Plan).

Project construction will permanently impact 128 acres (35,000 linear feet) and temporarily impact 46 acres (35,000 linear feet) of wetland waters of the United States and/or State. The Applicants reports that the Project purpose cannot be practically accomplished in a manner which would avoid or result in less adverse impacts to aquatic resources considering all potential practicable alternatives, such as the potential for alternate available locations, designs, reductions in size, configuration or density.

The Applicants reports that compensatory mitigation for the 128 acres of permanent impacts and 46 acres of temporary impacts to jurisdictional waters has been implemented on-site through the enhancement of 150.21 acres of waters of the United States and/or State. The Applicants have been monitoring and reporting the progress of the mitigation areas pursuant to the requirements in Water Quality Certification No. 07C-019.

In addition, the City has purchased the 45.5 acre Rincon Parcel for additional restoration and/or enhancement approximately 8.5 miles upstream from the Project site pursuant to the requirements of CDFW's California Endangered Species Incidental Take Permit (CESA ITP) for listed species. All waters of the United States and/or State receiving temporary discharges of fill material will be restored upon removal of the fill.

Detailed written specifications and work descriptions for the compensatory mitigation project including, but not limited to, the geographic boundaries of the project, timing, sequence, monitoring, maintenance, ecological success performance standards and provisions for long-term management and protection of the mitigation areas are described

in the *Restoration Program for the San Luis Rey River Flood Risk Management (Restoration Program)*, dated July 14, 2014. San Diego Water Board acceptance of the Restoration Program applies only to the Project described in this Certification and must not be construed as approval for other current or future projects that are planning to use additional acreage at the site for mitigation. The Restoration Program is incorporated in this Certification by reference as if set forth herein. The Restoration Program provides for implementation of compensatory mitigation which offsets adverse water quality impacts attributed to the Project in a manner that protects and restores the abundance, types and conditions of aquatic resources and supports their beneficial uses. Implementation of the Restoration Program will reduce significant environmental impacts to resources within the San Diego Water Board's purview to a less than significant level. Based on all of these considerations, the Restoration Program will adequately compensate for the loss of beneficial uses and habitat within waters of the United States and/or State attributable to the Project.

Additional Project details are provided in Attachments 1 through 7 of this Certification.

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Attachments:

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2. **Project Location Maps**
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5. **CEQA Mitigation Monitoring and Reporting Program**
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7. **U.S. Army Corps, Memorandum for the Record**

I. STANDARD CONDITIONS

Pursuant to section 3860 of title 23 of the California Code of Regulations, the following three standard conditions apply to all water quality certification actions:

A. This Certification action is subject to modification or revocation upon administrative or judicial review, including review and amendment pursuant to section 13330 of the Water Code and chapter 28, article 6 (commencing with title 23, section 3867), of the California Code of Regulations.

B. This Certification action is not intended and shall not be construed to apply to any discharge from any activity involving a hydroelectric facility and requiring a Federal Energy Regulatory Commission (FERC) license or an amendment to a FERC license unless the pertinent Certification application was filed pursuant to California Code of Regulations title 23, section 3855 subdivision (b), and that application specifically identified that a FERC license or amendment to a FERC license for a hydroelectric facility was being sought.

C. This Certification action is conditioned upon total payment of any fee required under title 23, chapter 28 (commencing with section 3830) of California Code of Regulations and owed by the Applicants.

II. GENERAL CONDITIONS

A. **Term of Certification**. Water Quality Certification No. R9-2015-0161 (Certification) shall expire upon a) the expiration or retraction of the Clean Water Act section 404 (33 USC Title 33, section 1344) permit issued by the U.S. Army Corps of Engineers for this Project, or b) ten (10) years from the date of issuance of this Certification, whichever occurs first.

B. **Duty to Comply.** The Applicants must comply with all conditions and requirements of this Certification. Any Certification noncompliance constitutes a violation of the Water Code and is grounds for enforcement action or Certification termination, revocation and reissuance, or modification.

C. **General Waste Discharge Requirements**. The requirements of this Certification are enforceable through Water Quality Order No. 2003-0017-DWQ, *Statewide General Waste Discharge Requirements for Discharges of Dredged or Fill Material that have Received State Water Quality Certification* (Water Quality Order No. 2003-0017-DWQ). This provision shall apply irrespective of whether a) the federal permit for which the Certification was obtained is subsequently retracted or is expired, or b) the Certification is expired. Water Quality Order No. 2003-0017-DWQ is accessible at:

http://www.waterboards.ca.gov/water_issues/programs/cwa401/docs/generalorders/go_wdr401regulated_projects.pdf.

D. **Project Conformance with Application.** All water quality protection measures and BMPs described in the application and supplemental information for water quality certification are incorporated by reference into this Certification as if fully stated herein.

Notwithstanding any more specific conditions in this Certification, the Applicants shall construct, implement and comply with all water quality protection measures and BMPs described in the application and supplemental information. The conditions within this Certification shall supersede conflicting provisions within the application and supplemental information submitted as part of this Certification action.

E. **Project Conformance with Water Quality Control Plans or Policies**. Notwithstanding any more specific conditions in this Certification, the Project shall be constructed in a manner consistent with the Water Quality Control Plan for the San Diego Basin (Basin Plan), the California Ocean Plan, and any other applicable water quality control plans or policies adopted or approved pursuant to the Porter Cologne Water Quality Act (Division 7, commencing with Water Code Section 13000) or section 303 of the Clean Water Act (33 USC section 1313). The Basin Plan and Ocean Plan are accessible at:

Basin Plan
http://www.waterboards.ca.gov/sandiego/water_issues/programs/basin_plan/index.shtml

Ocean Plan
http://www.waterboards.ca.gov/water_issues/programs/ocean/docs/cop2015.pdf

Project Modification. The Applicants must submit any changes to the Project, including Project operation, which would have a significant or material effect on the findings, conclusions, or conditions of this Certification, to the San Diego Water Board for prior review and written approval. If the San Diego Water Board is not notified of a significant change to the Project, it will be considered a violation of this Certification.

F. **Certification Distribution Posting**. During Project construction, the Applicants must maintain a copy of this Certification at the Project site. This Certification must be available at all times to site personnel and agencies. A copy of this Certification shall also be provided to any contractor or subcontractor performing construction work, and the copy shall remain in their possession at the Project site.

G. **Inspection and Entry**. The Applicants must allow the San Diego Water Board or the State Water Resources Control Board, and/or their authorized representative(s) (including an authorized contractor acting as their representative), upon the presentation of credentials and other documents as may be required under law, to:

1. Enter upon the Project or Compensatory Mitigation site(s) premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this Certification;

2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Certification;

3. Inspect, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Certification; and

4. Sample or monitor, at reasonable times, for the purposes of assuring Certification compliance, or as otherwise authorized by the Clean Water Act or Water Code, any substances or parameters at any location.

H. **Enforcement Notification**. In the event of any violation or threatened violation of the conditions of this Certification, the violation or threatened violation shall be subject to any remedies, penalties, process or sanctions as provided for under State law. For purposes of section 401(d) of the Clean Water Act, the applicability of any State law authorizing remedies, penalties, process or sanctions for the violation or threatened violation constitutes a limitation necessary to assure compliance with the water quality standards and other pertinent requirements incorporated into this Certification.

I. **Certification Actions**. This Certification may be modified, revoked and reissued, or terminated for cause including but not limited to the following:

1. Violation of any term or condition of this Certification;

2. Monitoring results indicate that continued Project activities could violate water quality objectives or impair the beneficial uses of the San Luis Rey River or its tributaries and the Pacific Ocean Shoreline;

3. Obtaining this Certification by misrepresentation or failure to disclose fully all relevant facts;

4. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge; and

5. Incorporation of any new or revised water quality standards and implementation plans adopted or approved pursuant to the Porter-Cologne Water Quality Control Act or section 303 of the Clean Water Act.

The filing of a request by the Applicants for modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any Certification condition.

J. **Duty to Provide Information**. The Applicants shall furnish to the San Diego Water Board, within a reasonable time, any information which the San Diego Water Board may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Certification or to determine compliance with this Certification.

K. **Property Rights**. This Certification does not convey any property rights of any sort, or any exclusive privilege.

L. **Alignment Demarcation.** The vegetation clearing and sediment excavation alignments shall be clearly marked (e.g., staked or flagged) by Project biologists or engineers prior to activities, and the Applicants shall ensure that all contracted personnel stay within the marked alignment during clearing activities, except for monitoring personnel.

M. **Beach Sand Replenishment**. Sediment that is removed from the Project area that meets the physical and chemical standards for beach sand replenishment must be used within the City of Oceanside at the designated replenishment areas. Sediment not suitable beach material will be taken to the El Corazon Compost Facility for storage and disposal.

N. **Open Water/Marsh**. No mowing shall occur in areas of flowing water or freshwater marsh vegetation. No mowed or chipped material shall be discharged into open water or marsh areas.

O. **Aquatic Weed Control NPDES Requirements**. Invasive species management activities involving aquatic herbicides conducted subsequent to mowing operations shall be conducted in accordance with product labels and, if applicable, in accordance with Statewide General National Pollutant Discharge Elimination System (NPDES) Permit for Residual Aquatic Pesticide Discharges to Waters of the United States from Algae and Aquatic Weed Control Applications, Water Quality Order 2013-0002-DWQ, for the reissuance of General NPDES Permit CAG990005.

P. **Threatened and Endangered Species Protection**. The Applicants shall, in accordance with the Biological Opinion issued by the USFWS (February 14, 2006), implement the following conservation measures to protect the uses of water that support habitats necessary, at least in part, for the survival and successful maintenance of plant and animal species established under State or federal law as rare, threatened, or endangered.

1. A USACE biologist or a USACE designated contract biologist will be present at the Project site during all mowing, chipping, and/or sediment removal activities;

2. Mowing areas must be limited to those areas described within the Biological Opinion; and

3. The mowing contractor and all field personnel must be educated on the environmental sensitivity of the area, with specific attention to habitat for endangered species.

Q. **Steelhead**. In 2007, biologists from the CDFW observed southern pacific steelhead (steelhead) in the San Luis Rey River within the Project area. Steelhead is an endangered species pursuant to the federal Endangered Species act. When federally-endangered species are found within a Project area that is subject to USACE permits, the USACE is required to consult with federal wildlife and/or fisheries agencies and incorporate that consultation into permits issued by the USACE. The USACE has consulted with the National Marine Fisheries Service (NMFS) on the southern California steelhead NMFS has put forth a set of recommended actions to minimize potential effects to the steelhead and its habitat within the Project area. Those recommendations are contained within a letter from USACE to NMFS, Southwest Regional Office, dated February 5, 2008 which is incorporated as a condition into this Certification in Attachment 6. The Applicants shall implement and comply with the best management practices listed in

Attachment 6, or subsequent consultation updates or revisions in compliance with the Endangered Species Act, as a condition of this Certification.

R. **Petitions**. Any person aggrieved by this action of the San Diego Water Board may petition the State Water Resources Control Board (State Water Board) to review the action in accordance with the California Code of Regulations, title 23, sections 3867 and following. The State Water Board must receive the petition by 5:00 p.m., 30 days after the date of this Certification. Copies of the law and regulations applicable to filing petitions may be found on the Internet at: http://www.waterboards.ca.gov/public_notices/petitions/water_quality or will be provided upon request.

III. CONSTRUCTION BEST MANAGEMENT PRACTICES

A. **Approvals to Commence Construction**. The Applicants shall not commence Project construction until all necessary federal, State, and local approvals are obtained.

B. **Personnel Education.** Prior to the start of the Project, and any subsequent vegetation management, sediment management, habitat management, or restoration event thereafter, the Applicants must educate all personnel on the requirements in this Certification, pollution prevention measures, spill response measures, environmental sensitivity of the area, with specific attention to habitat for endangered species, and BMP implementation and maintenance measures.

C. **Spill Containment Materials.** The Applicants must, at all times, maintain appropriate types and sufficient quantities of materials on-site to contain any spill or inadvertent release of materials that may cause a condition of pollution or nuisance if the materials reach waters of the United States and/or State.

D. **General Construction Storm Water Permit.** Prior to start of Project construction, the Applicants must, as applicable, obtain coverage under, and comply with, the requirements of State Water Resources Control Board Water Quality Order No. 2009-0009-DWQ, NPDES No. CAS000002, the *General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activity*, (General Construction Storm Water Permit) and any reissuance. If Project construction activities do not require coverage under the General Construction Storm Water Permit, the Applicants must develop and implement a runoff management plan (or equivalent construction BMP plan) to prevent the discharge of sediment and other pollutants during construction activities.

E. **Waste Management.** The Applicants must properly manage, store, treat, and dispose of wastes in accordance with applicable federal, state, and local laws and regulations. Waste management shall be implemented to avoid or minimize exposure of wastes to precipitation or storm water runoff. The storage, handling, treatment, or disposal of waste shall not create conditions of pollution, contamination or nuisance as defined in Water Code section 13050. Upon Project completion, all Project generated debris, building materials, excess material, waste, and trash shall be removed from the Project site(s) for disposal at an authorized landfill or other disposal site in compliance with

federal, state and local laws and regulations.

F. **Waste Management**. Except for a discharge permitted under this Certification, the dumping, deposition, or discharge of trash, rubbish, unset cement or asphalt, concrete, grout, damaged concrete or asphalt, concrete or asphalt spoils, wash water, organic or earthen material, steel, sawdust or other construction debris waste from Project activities directly into waters of the United States and or State, or adjacent to such waters in any manner which may permit its being transported into the waters, is prohibited.

G. **Downstream Erosion.** Discharges of concentrated flow during construction or after Project completion must not cause downstream erosion or damage to properties or stream habitat.

H. **Construction Equipment**. All equipment must be washed prior to transport to the Project site and must be free of sediment, debris, and foreign matter. All equipment used in direct contact with surface water shall be steam cleaned prior to use. All equipment using gas, oil, hydraulic fluid, or other petroleum products shall be inspected for leaks prior to use and shall be monitored for leakage. Stationary equipment (e.g., motors, pumps, generator, etc.) shall be positioned over drip pans or other types of containment.

I. **Process Water.** Water containing mud, silt, or other pollutants from equipment washing or other activities, must not be discharged to waters of the United States and/or State or placed in locations that may be subjected to storm water runoff flows. Pollutants discharged to areas within a stream diversion must be removed at the end of each work day or sooner if rain is predicted.

J. **Surface Water Diversion.** All surface waters, including ponded waters, must be diverted away from areas of active grading, construction, excavation, vegetation removal, and/or any other activity which may result in a discharge to the receiving water. Diversion activities must not result in the degradation of beneficial uses or exceedance of the receiving water quality objectives. Any temporary dam or other artificial obstruction constructed must only be built from materials such as clean gravel which will cause little or no siltation. Normal flows must be restored to the affected stream immediately upon completion of work at that location.

K. **Re-vegetation and Stabilization.** All areas that have 14 or more days of inactivity must be stabilized within 14 days of the last activity. The Applicants shall implement and maintain BMPs to prevent erosion of the rough graded areas. After completion of grading, all areas must be re-vegetated with native species appropriate for the area and be compatible with the project requirements in order to aid in stabilizing the graded areas. The re-vegetation palette must not contain any plants listed on the California Invasive Plant Council Invasive Plant Inventory, which can be accessed at http://www.cal-ipc.org/ip/inventory/.

L. **Hazardous Materials.** Except as authorized by this Certification, substances hazardous to aquatic life including, but not limited to, petroleum products, unused

cement/concrete, asphalt, and coating materials, must be prevented from contaminating the soil and/or entering waters of the United States and/or State. BMPs must be implemented to prevent such discharges during each Project activity involving hazardous materials.

M. **Vegetation Removal.** Removal of vegetation must occur by hand, mechanically, or through application of United States Environmental Protection Agency (USEPA) approved herbicides deployed using applicable BMPs to minimize adverse effects to beneficial uses of waters of the United States and/or State. Discharges related to the application of aquatic pesticides within waters of the United States must be done in compliance with State Water Resources Control Board Water Quality Order No. 2004-0009-DWQ, the *Statewide General National Pollution Discharge Elimination System Permit for the Discharge of Aquatic Weed Control in Waters of the United States,* and any subsequent reissuance as applicable.

N. **Limits of Disturbance.** The Applicants shall clearly define the limits of Project disturbance to waters of the United States and/or State using highly visible markers such as flag markers, construction fencing, or silt barriers prior to commencement of Project construction activities within those areas.

O. **On-site Qualified Biologist.** The Applicants shall designate an on-site qualified biologist to monitor Project construction activities within or adjacent to waters of the United States and/or State to ensure compliance with the Certification requirements. The biologist shall notify the person in authority to stop all work on-site if a violation of this Certification occurs or has the potential to occur. Records and field notes of the biologist's activities shall be kept on-site and made available for review upon request by the San Diego Water Board.

P. **Sediment Removal.** Handling, transport, and disposal of sediment must comply with all applicable Federal, State, and local laws. Hauls routes are limited to designated access points and existing roads. Any modifications shall be submitted to the San Diego Water Board for review.

Q. **Beneficial Use Protection**. The Applicants must take all necessary measures to protect the beneficial uses of waters of the San Luis Rey River and the Pacific Ocean shoreline. This Certification requires compliance with all applicable requirements of the Basin Plan and Ocean Plan. If at any time, an unauthorized discharge to surface waters (including rivers or streams) occurs or monitoring indicates that the Project is violating, or threatens to violate, water quality objectives, the associated Project activities shall cease immediately and the San Diego Water Board shall be notified in accordance with Notification Requirement VII.A of this Certification. Associated Project activities may not resume without approval from the San Diego Water Board.

R. **Groundwater Dewatering.** If groundwater dewatering is required for the Project, the Applicants shall enroll in and comply with the requirements of San Diego Water Board Order No. R9-2015-0013, NPDES No. CAG919002, *General Waste Discharge Requirements For Groundwater Extraction Waste Discharges in the San Diego Region* or its successor permit.

S. **Storm Events.** If significant precipitation is forecast, the Applicants shall secure the Project site to ensure no materials enter into the San Luis Rey River. During periods of measurable precipitation, no construction activities may take place in the Project site except for emergency repairs and maintenance. Project construction and maintenance activities shall not take place in flowing water except under emergency conditions or to repair BMPs.

T. **Sand Composition.** The dredged material used for nearshore beach nourishment must have at least 80 percent sand and no more than 10 percent difference in sand composition from the receiving beach, and must not have a significant chemical contamination. The Project must not impact the aesthetic characteristics of the receiving beaches and/or adjacent ocean waters.

U. **Trash.** The dredged material deposited on or near the beach must be free of trash and debris.

V. **Grunion**. California grunion is a State managed species and the intertidal zone at the disposal sites are potential spawning habitat. To the greatest extent possible, the USACE must avoid shoreline fill activities during the grunion spawning season (March 15 – August 31). If shoreline disposal activities must occur during grunion spawning season, the Applicants must conduct a preconstruction survey of potential grunion spawning habitat at each proposed beach disposal site.

1. The preconstruction survey must be conducted by a biological monitor no more than one month prior to the expected start date of the shoreline dredged material disposal activities and must include photo documentation.

2. The biological monitor shall determine whether the shoreline discharge areas are unsuitable for use as spawning habitat for grunion. Unsuitable habitat includes cobble beaches, beaches that are inundated during high tides to the extent that no beach above the high tide water mark is available for grunion spawning, beaches that do not have enough sand substrate for the grunion to bury eggs, and beaches with no historic grunion runs.

If shoreline disposal activities occur during grunion spawning season between March 15 – August 31 and suitable grunion habitat is located in the proposed shoreline disposal area, the Applicants must avoid and minimize potential impacts to grunion by complying with the following conditions:

3. Shoreline dredged material disposal activities that entail sand disturbance seaward of the semilunar high tide line may be conducted on the day before the first date of a predicted run series. This day constitutes a narrow window of time during which egg nests and developing larvae are unlikely to be present in the sand; larvae from the previous run series likely would have been flushed by the previous night's high tide, and new eggs likely won't be deposited for at least 24 hours. As an example, mechanized equipment could be used on July 8, 2017, which is the day before the first date of the predicted run series that starts July 9 (the predicted four-day run

series is July 9, 10, 11, and 12 according to the DFW website, https://www.wildlife.ca.gov/fishing/ocean/grunion#28352306-2017-runs).

4. To conduct dredged material disposal activities beyond the dates in item V.3. above, a biological monitor, must survey for the presence of adult grunion during the predicted grunion runs prior to the disposal activities. Monitoring must be done on all four nights of the predicted run series, except that if grunion are observed spawning within the work area or a 10-yard buffer area between the grunion spawn site and the work area on a given night, the presence of egg nests may be assumed and surveys on subsequent nights are not required. For example, if grunion are observed in the work area or the 10-yard buffer and the work area, on night 1, then monitoring on nights 2, 3, and 4 would not be required. If grunion are not observed within the work area or the 10-yard buffer on night 1, then night 2 would be surveyed and so forth.

5. Monitoring must occur from the time of the high tide to two hours following the tide, or until the grunion stop running, whichever is later. For each night of monitoring, recorded information must include the time period monitored, grunion run time and duration, approximate grunion density within the work area and 10-yard buffer, and approximate grunion density in a broader area (i.e., within approximately 50 yards up-coast or 50 yards down-coast of the work area).

6. If grunion spawning is observed within the work area or the 10-yard buffer on any night of a four-day run series, then spawning areas must be clearly marked and avoided by heavy equipment and machinery until after the egg incubation period (i.e., until the day before the first date of the next predicted run, as described).

7. If grunion spawning is not observed within the work area or 10-yard buffer on all four nights of a predicted run series, then the absence of egg nests and incubation activity near the work area may be assumed and, if needed, project activity that entails sand disturbance may be conducted seaward of the semilunar high tide line up to and including the day before the date of the next predicted run.

8. Where the shoreline discharge area is currently unsuitable for use as spawning habitat for grunion, beach disposal may occur in the designated areas without a biological monitor.

IV. POST-CONSTRUCTION BEST MANAGEMENT PRACTICES

A. **Post-Construction Discharges.** The Applicants shall not allow post-construction discharges from the Project site to cause or contribute to on-site or off-site erosion or damage to properties or stream habitats.

B. **Debris Clearing Activities**. Mulch and/or debris from the vegetation clearing activities that accumulates in downstream areas, such as tidal areas and bridges following rain storms, shall be removed by the Applicants as soon as can be safely accomplished. The Applicants shall notify the San Diego Water Board within 24 hours, following completion of removal activities. The notification shall include information regarding the

precise locations, approximate amount of debris removed, disposal locations, and a description of any beneficial uses that were affected by the debris or debris-clearing activities.

V. PROJECT IMPACTS AND COMPENSATORY MITIGATION

A. **Project Impact Avoidance and Minimization**. The Project must avoid and minimize adverse impacts to waters of the United States and/or State to the maximum extent practicable.

B. **Project Impacts and Compensatory Mitigation.** Unavoidable Project impacts to San Luis Rey River and its unnamed tributaries within the San Luis Rey Watershed must not exceed the type and magnitude of impacts described in the table below. At a minimum, compensatory mitigation required to offset unavoidable temporary and permanent Project impacts to waters of the United States and/or State must be achieved as described in the table below:

	Impacts (acres)	Impacts (linear ft.)	Mitigation for Impacts (acres)	Mitigation Ratio (area mitigated :area impacted)	Mitigation for Impacts (linear ft.)	Mitigation Ratio (linear feet mitigated :linear feet impacted)
Permanent Impacts						
Wetland and Riparian	128[1]	35,000[1]	150.21 Enhancement[2]	1.2:1	35,000 Enhancement	1:1
Temporary Impacts[3]						
Wetland and Riparian	46	35,000	NA	NA	NA	NA

1. Impacts from ongoing vegetation management and sediment excavation are within the Active Vegetation Management area (Maintained Area). No new impacts will occur outside of the Maintained Areas.
2. Riparian enhancement mitigation located on-site. The enhancement mitigation was implemented and completed under Water Quality Certification No. 07C-019 and subsequent amendments. The enhancement mitigation is currently subject to annual monitoring requirements under Water Quality Certification No. 07C-019;
3. All areas of temporary impacts must be restored to pre-project contours and re-vegetated with native species outside of the maintained areas of the flow conveyance zone.

C. **Compensatory Mitigation Plan Implementation.** The Applicants must fully and completely implement the Restoration Program; any deviations from, or revisions to, the Restoration Program must be pre-approved by the San Diego Water Board.

D. **Performance Standards.** Compensatory mitigation required under this Certification shall be considered achieved once it has met the ecological success performance

standards contained in the Restoration Program (Section 5.2, pages 48-50) to the satisfaction of the San Diego Water Board.

E. **Compensatory Mitigation Site Design.** The compensatory mitigation site(s) shall be designed to be self-sustaining once performance standards have been achieved. This includes minimization of active engineering features (e.g., pumps) and appropriate siting to ensure that natural hydrology and landscape context support long-term sustainability in conformance with the following conditions:

1. Most of the channels through the mitigation sites shall be characterized by equilibrium conditions, with no evidence of severe aggradation or degradation;

2. As viewed along cross-sections, the channel and buffer area(s) shall have a variety of slopes, or elevations, that are characterized by different moisture gradients. Each sub-slope shall contain physical patch types or features that contribute to irregularity in height, edges, or surface and to complex topography overall; and

3. The mitigation sites shall have a well-developed plant community characterized by a high degree of horizontal and vertical interspersion among plant zones and layers.

F. **Temporary Project Impact Areas.** The Applicants must restore all areas of temporary impacts and all other areas of temporary disturbance which could result in a discharge or a threatened discharge of pollutants to waters of the United States and/or State. Restoration must include grading of disturbed areas to pre-project contours and re-vegetation with native species outside of the maintained areas of the flow conveyance zone. The Applicants must implement all necessary BMPs to control erosion and runoff from areas associated with the Project.

G. **Sediment Management Action Areas.** Excavated Sediment Management Areas not subject to natural revegetation after one year following completion of ground disturbing activities must be revegetated with a native seed mix appropriate for the areas.

H. **Long-Term Management and Maintenance.** The compensatory mitigation site(s) must be managed, protected, and maintained, in perpetuity, in conformance with the long-term management plan and the final ecological success performance standards identified in the *Adaptive Habitat Management Plan for the San Luis Rey River Flood Risk Management, August 7, 2014* (AHMP), Restoration Program, and restoration program developed for the Rincon Parcel. The aquatic habitats, riparian areas, buffers and uplands that comprise the mitigation site(s) must be protected in perpetuity from land-use and maintenance activities that may threaten water quality or beneficial uses within the mitigation area(s) in a manner consistent with the following requirements:

1. Any maintenance activities on the mitigation site(s) that do not contribute to the success of the mitigation site(s) and enhancement of beneficial uses and ecological functions and services are prohibited;

2. Maintenance activities must be limited to the removal of trash and debris, removal of exotic plant species, replacement of dead native plant species, and remedial measures deemed necessary for the success of the compensatory mitigation project;

3. The Mitigation site(s) must be maintained, in perpetuity, free of perennial exotic plant species including, but not limited to, pampas grass, giant reed, tamarisk, sweet fennel, tree tobacco, castor bean, and pepper tree. Annual exotic plant species must not occupy more than 5 percent of the mitigation site(s); and

4. If at any time a catastrophic natural event (e.g., fire, flood) causes damage(s) to the mitigation site(s) or other deficiencies in the compensatory mitigation project, the Applicants must take prompt and appropriate action to repair the damage(s) including replanting the affected area(s) and address any other deficiencies. The San Diego Water Board may require additional monitoring by the Applicants to assess how the compensatory mitigation site(s) or project is responding to a catastrophic natural event.

I. **Mitigation Site(s) Preservation Mechanism. Within 90 days from the issuance of this Certification**, the Applicants must provide the San Diego Water Board with a copy of the Restrictive Covenant recorded for the mitigation lands inside the current Federal Project. For the area known as the Rincon Mitigation site, acquired by the City for mitigation purposes, the City must provide the San Diego Water Board with a draft preservation mechanism (e.g. deed restriction, conservation easement, etc.) that will protect this mitigation area and its buffers in perpetuity within 90 days from the formal acceptance of the Rincon Site into the Federal project or within **12 months of the start of Project construction, whichever occurs first**. Within 12 months of the submittal of the draft, the City must submit proof of a completed final preservation mechanism that will protect all mitigation areas and their buffers in perpetuity. The conservation easement, deed restriction, or other legal limitation on the mitigation properties must be adequate to demonstrate that the sites will be maintained without future development or encroachment on the sites which could otherwise reduce the functions and values of the sites for the variety of beneficial uses of waters of the United States and/ or State that it supports. The legal limitation must prohibit, without exception, all residential, commercial, industrial, institutional, and transportation development, and any other infrastructure development that would not maintain or enhance the wetland and streambed functions and values of the sites. The preservation mechanism must clearly prohibit activities that would result in soil disturbance or vegetation removal, other than what is authorized in this Certification and the removal of non-native vegetation. Other infrastructure development to be prohibited includes, but is not limited to, additional utility lines, maintenance roads, and areas of maintained landscaping for recreation.

VI. MONITORING AND REPORTING REQUIREMENTS

A. **Representative Monitoring**. Samples and measurements taken for the purpose of monitoring under this Certification shall be representative of the monitored activity.

B. **U.S. EPA Test Procedures**. Monitoring must be conducted according to United States Environmental Protection Agency (USEPA) test procedures approved under Title 40,

Code of Federal Regulations (CFR), Part 136, Guidelines Establishing Test Procedures for Analysis of Pollutants Under the Clean Water Act as amended, unless other test procedures have been specified in this Certification.

C. **Certified Laboratory**. All laboratory analyses must be performed in a laboratory certified to perform such analyses under the State Water Resources Control Board's Environmental Laboratory Accreditation Program or a laboratory approved by the San Diego Water Board.

D. **Beach Compatible Material Evaluation**. Potential beach compatible material must be sampled and tested according to the document entitled "*Evaluation of Dredged Material Proposed For Discharge in Waters of the U.S. Testing Manual Inland Testing Manual; February 1998*" under the direction and approval of the USACE in consultation with the USEPA.

E. **Monitoring Reports**. Monitoring results shall be reported to the San Diego Water Board at the intervals specified in section VI of this Certification. If there is a lack of flowing water during monitoring events the Applicants shall note this condition and submit the required report. Annual reports are required under Condition VI.Q of this Certification.

F. **Monitoring and Reporting Revisions**. The San Diego Water Board may make revisions to the monitoring program at any time during the term of this Certification and may reduce or increase the number of parameters to be monitored, locations monitored, the frequency of monitoring, or the number and size of samples collected.

G. **Records of Monitoring Information.** Records of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements;
2. The individual(s) who performed the sampling or measurements;
3. The date(s) analyses were performed;
4. The individual(s) who performed the analyses;
5. The analytical techniques or methods used; and
6. The results of such analyses.

H. **Water Quality Monitoring Plan Revised**. **Prior to the start of construction**, the Applicants must revise the *Water Quality Monitoring Plan for the San Luis Rey River Flood Control Channel* (WQMP), November 7, 2008, to reflect the most current bioassessment protocols. The revised WQMP shall be consistent with the Surface Water Ambient Monitoring Program (SWAMP) most recent Standard Operating Procedures (SOP) protocols[2]. The purpose of the WQMP plan is to

[2] http://www.waterboards.ca.gov/water_issues/programs/swamp/tools.shtml#qaprp

effectively monitor water quality for as long as sediment and vegetation management is conducted by the Applicants. The WQMP must consist of benthic macroinvertebrate (BMI) analyses, water chemistry, and algal monitoring.

I. The revised WQMP water chemistry section must, at a minimum, include sampling, analysis, and monitoring of the following parameters:

1. Temperature
2. pH
3. Dissolved oxygen
4. Turbidity
5. Total suspended solids
6. Ammonia-N
7. Alkalinity
8. Total Nitrogen
9. Total Phosphorus

J. **Algal Monitoring**. The revised WQMP algal section must require monitoring to be conducted for:

1. Biomass (in chlorophyll and ash free dry mass (AFDM)) for benthic (attached) algae, phytoplankton (the ones in the water column), and macroalgae (attached and floating) and;

2. Algal cover.

This monitoring is described in the SWAMP *Standard Operating Procedures for Collecting Stream Algae Samples and Associated Physical Habitat and Chemical Data for Ambient Bioassessments in California, May 2010*[3].

K. **Benthic Macroinvertebrate Community Analysis.** The Applicants shall conduct bioassessment monitoring, as described in the revised WQMP, to assess the success of mitigation areas and the impact of construction activities, whenever applicable, using benthic macroinvertebrate community data. Bioassessment shall include: 1) the collection and reporting of benthic macroinvertebrate data; and 2) the collection and reporting of physical habitat data. Bioassessment using benthic macroinvertebrates shall be conducted in perennial wadeable streams during the index period. Perennial streams shall be defined as streams with surface water flow present during the appropriate index period[4]. Wadeable streams shall be defined as streams that can be safely waded in order to be sampled for benthic invertebrates during the appropriate index period. If the appropriate sampling period lies outside the index period, please contact the San Diego Water Board.

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[3] This document can be found at http://www.waterboards.ca.gov/water_issues/programs/swamp/docs/sop_algae.pdf.

[4] The appropriate index period can be found electronically at the following location: http://www.waterboards.ca.gov/water_issues/programs/stormwater/docs/constpermits/cgp_biomap.pdf

1. **Field Methods.** Bioassessment monitoring must be performed using the SWAMP field methods specified in *Standard Operating Procedures for the Collection of Field Data for Bioassessment of California Wadeable Streams: Benthic Macroinvertebrates, Algae, and Physical Habitat, SOP 004, May 2016*[5] (SOP, Ode 2016) or any updates of these methods. The Applicants shall conduct, concurrently with all required benthic macroinvertebrate collections, the "Full" suite of physical habitat characterization measurements as specified in the SOP.

2. **Laboratory Methods.** Benthic macroinvertebrates shall be identified using the SWAMP laboratory methods specified in *Standard Operating Procedures for Laboratory Processing and Identification of Benthic Macroinvertebrates in California*[6] (Laboratory SOP, Woodard et al. 2012) or any updates of these methods. Standard Taxonomic Effort (STE) Level II of the Southwestern Association of Freshwater Invertebrate Taxonomists (SAFIT) is required. Quality control samples are required for 10% of the samples each year and Quality Assurance samples must be analyzed by the Aquatic Bioassessment Laboratory of the CDFW.

3. **Data Analysis.** Analysis of benthic macroinvertebrate data shall be conducted using scoring tools including but not limited to *California Stream Condition Index*[7] (CSCI, Rehn et. al., 2015, SWAMP-TM-2015-0002).

4. **Data Storage.** Benthic macroinvertebrate data and physical habitat data shall be submitted to the California Environmental Data Exchange Network[8] (CEDEN).

5. **Monitoring Reports.** An evaluation, interpretation and tabulation of the benthic macroinvertebrate community analysis must be submitted prior to **March 1** with the respective Annual Project Monitoring Report.

L. **Sediment Management Turbidity Monitoring.** During sediment removal and excavation activities, the Applicants must monitor for turbidity in the San Luis Rey River. The Applicants must conduct weekly turbidity monitoring upstream and downstream from the active excavation work site. If the turbidity in the San Luis Rey River downstream of the work site is 20% or greater than the upstream location; the Applicants shall modify operations as necessary to reduce the turbidity. The Applicants must take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance including such accelerated or additional monitoring as may be necessary to determine the nature and impact of the noncompliance.

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[5] The SOP can be found electronically at the following location:
http://www.waterboards.ca.gov/water_issues/programs/swamp/bioassessment/docs/combined_sop_2016.pdf

[6] The Laboratory SOP can be found electronically at the following location:
http://www.waterboards.ca.gov/water_issues/programs/swamp/docs/bmi_lab_sop_final.pdf

[7] The *California Stream Condition Index* can be found electronically at the following location:
http://www.waterboards.ca.gov/water_issues/programs/swamp/bioassessment/docs/csci_tech_memo.pdf

[8] The California Environmental Data Exchange Network can be found electronically at the following location:
http://www.ceden.org/

M. **Receiving Water Quality Monitoring for Beach Replenishment.** The Applicants must perform weekly water quality sampling and analysis at the shoreline beach sand disposal areas in Oceanside, CA when sediment is being place on the shoreline.

1. Sampling must occur at four sampling stations at each active beach disposal site.
   a. Station A is 100 ft. north of the disposal site.
   b. Station B is 100 ft. south of the disposal site.
   c. Station C is 300 ft. south of the disposal site.
   d. Station D is the Control site 300 ft. north of the disposal site.

2. During beach replenishment activities, weekly sampling must occur at the four locations outlined in section VI.M.1 above. Sampling and analyses must, at a minimum, include: temperature, salinity, pH, turbidity, light transmittance, total coliform, fecal coliform, enterococcus (collectively referred to as TFE), and dissolved oxygen. Data must be collected at one-meter intervals from the water's surface to the seafloor. Turbidity must be reported in percent transmittance and NTUs. Samples collected for TFE, at a minimum, must be collected at Stations A and B. The results of the water quality assessment must be submitted with each Annual Monitoring Report.

3. Bacteria sampling must occur at the active beach disposal sites for TFE as described in section VI.M.1 above. Bacterial Water-Contact Standards are contained in the Ocean Plan and are hereby incorporated in this Certification as if fully set forth herein. If the mean weekly water samples are found to contain bacteria in levels that exceed Bacterial Water-Contact Standards, the Applicant must report the exceedance pursuant to Notification Requirement VIII.A. If persistent exceedances occur, the San Diego Water Board may direct the Applicants to modify or halt discharging sand onto the beach until water quality improves. When no materials are being deposited directly on the beach, no disposal bacteria monitoring is required.

   If the Applicant determines there is no evidence that disposal of dredged material at the beach nourishment sites has caused or contributed to exceedances of Bacterial Water-Contact Standards, the Applicant must provide site specific data, assumptions, and documentation to support such assertions.

N. **Visual Observations Beach Replenishment**. During sample collection conducted pursuant to this monitoring and reporting program, the following visual and other observations must also be made and recorded and submitted as part of the required reports.

1. Speed and direction of the currents:
2. Tidal stage;
3. Appearance of rubbish or refuse (including cans, bottles, paper, plastic, etc.), garbage, trash or any other solid waste;
4. Appearance of oil or other materials of petroleum origin;
5. Discoloration and extent of any visible turbidity plume;

6. Presence of nuisance odors attributable to the dredge activity or dredged material discharge to the beach disposal area; and
7. Photo documentation conducted in accordance with the State Water Resources Control Board Standard Operating Procedure 4.2.1.4[9]. The Applicant must conduct photo documentation of the Project site, and shoreline disposal areas prior to, during, and after Project construction. In addition, photo documentation must include Geographic Positioning System (GPS) coordinates for each of the photo points referenced. The report must include a compact disc that contains digital files of all the photos (jpeg file type or similar).

O. **Response Actions to Monitoring Results.** In the event that water quality monitoring or visual observations or described in Section VI.M and VI.N of this Certification indicate an exceedance of an applicable water quality standard, the Applicant shall implement the additional or enhanced operational or engineering BMPs described below:

1. Evaluate the concurrent measurements at control and monitoring stations and supporting visual evidence to determine whether the exceedance is caused by the dredging or disposal activities or by other ambient conditions in the Pacific Ocean (e.g., waves, boat wakes, barge/ship traffic, and storm inflow).

2. Immediately re-take measurements at control and monitoring stations.

3. If the exceedance is confirmed, immediately notify the contractor to immediately modify operations or implement additional BMPs to mitigate the exceedance. Operational modifications may include, but are not limited to the following modifications implemented individually or in combination:

   a. Adjust the sequence and/or speed of sand disposal operations;

   b. Limit the number of truckloads deposited on the beach per day; and/or

   c. Modify, either on a temporary or permanent basis, the methods used to disperse the deposited material.

4. Re-evaluate field measurements at all relevant stations 30 minutes later, after additional BMPs or operational modifications are implemented.

5. If the receiving water limitation exceedance continues to persist, even with additional BMPs, determine and implement more aggressive BMPs or operational modifications that resolve the exceedance or stop work to further assess the source of the exceedance, identify effective mitigation measures, and allow the water column to recover.

P. **Geographic Information System Data.** The Applicants must submit Geographic Information System (GIS) shape files of the Project impact sites within 30 days of the start of project construction and GIS shape files of the Project mitigation sites within 30

[9] Available at http://www.waterboards.ca.gov/sandiego/water_issues/programs/401_certification/docs/401c/401PhotoDocRB9V713.pdf

days of mitigation installation. All impact and mitigation site shape files must be polygons. Two GPS readings (points) must be taken on each line of the polygon and the polygon must have a minimum of 10 points. GIS metadata must also be submitted.

Q. **Annual Project Progress Reports.** The Applicants must submit annual Project progress reports describing status of BMP implementation, compensatory mitigation, and compliance with all requirements of this Certification to the San Diego Water Board prior to **March 1** of each year following the issuance of this Certification, until the Project has reached completion. The Annual Project Progress Reports must contain compensatory mitigation monitoring information sufficient to demonstrate how the compensatory mitigation project is progressing towards accomplishing its objectives and meeting its performance standards. Annual Project Progress Reports must be submitted even if Project construction has not begun. The monitoring period for each Annual Project Progress Report shall be January 1st through December 31st of each year. Annual Project Progress Reports must include, at a minimum, the following:

R. **Project Status and Compliance Reporting.** The Annual Project Progress Report must include the following Project status and compliance information:

1. The names, qualifications, and affiliations of the persons contributing to the report;

2. The status, progress, and anticipated schedule for completion of Project construction activities including the installation and operational status of best management practices project features for erosion and storm water quality treatment;

3. A description of Project construction delays encountered or anticipated that may affect the schedule for construction completion; and

4. A description of each incident of noncompliance during the annual monitoring period and its cause, the period of the noncompliance including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and the steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

S. **Annual Notification of Project Activities**. The Applicants must submit a list of anticipated vegetation management, sediment management, and/or any other Project related activities covered under this Certification in writing to the San Diego Water Board by March 1 of each year. The list should include the Project locations, anticipated start and stop dates, estimates of acres to be mowed, and/or volume of sediment to be removed for that year. If no maintenance or sediment work is proposed to occur during the year, written notification stating such shall be submitted.

T. **Compensatory Mitigation Monitoring Reporting.** Mitigation monitoring information for the Rincon parcel must be submitted as part of the Annual Project Progress Report for a period of not less than five years, sufficient to demonstrate that the compensatory mitigation project has accomplished its objectives and met ecological success performance standards contained in the Restoration Program. Following Project implementation the San Diego Water Board may reduce or waive compensatory

mitigation monitoring requirements upon a determination that performance standards have been achieved. Conversely the San Diego Water Board may extend the monitoring period beyond five years upon a determination that the performance standards have not been met or the compensatory mitigation project is not on track to meet them. The Annual Project Progress Report must include the following compensatory mitigation monitoring information:

1. Names, qualifications, and affiliations of the persons contributing to the report;

2. An evaluation, interpretation, and tabulation of the parameters being monitored, including the results of the Restoration Program monitoring program, and all quantitative and qualitative data collected in the field;

3. A description of the following mitigation site(s) characteristics:

   (a) Detritus cover;
   (b) General topographic complexity;
   (c) General upstream and downstream habitat and hydrologic connectivity; and
   (d) Source of hydrology

4. Monitoring data interpretations and conclusions as to how the compensatory mitigation project(s) is progressing towards meeting performance standards and whether the performance standards have been met;

5. A description of the progress toward implementing a plan to manage the compensatory mitigation project after performance standards have been achieved to ensure the long term sustainability of the resource in perpetuity, including a discussion of long term financing mechanisms, the party responsible for long term management, and a timetable for future steps;

6. Qualitative and quantitative comparisons of current mitigation conditions with pre-construction conditions and previous mitigation monitoring results;

7. Stream photo documentation, including all areas of permanent and temporary impact, prior to and after mitigation site construction. Photo documentation must be conducted in accordance with guidelines posted at http://www.waterboards.ca.gov/sandiego/water_issues/programs/401_certification/docs/401c/401PhotoDocRB9V713.pdf. In addition, photo documentation must include Geographic Positioning System (GPS) coordinates for each of the photo points referenced;

8. An evaluation, interpretation, and tabulation of all WQMP data, beach monitoring data, and benthic macroinvertebrate community assessment data collected throughout the term of Project construction in accordance with section VI.E ,VI.H, VI.L, VI.M, and VI.N of this Certification;

9. As-built drawings of the compensatory mitigation project site(s), no bigger than 11"X17"; and

10. A survey report documenting boundaries of the compensatory mitigation site(s).

U. **Erosion and Sediment Control Plan. Prior to the start of construction**, the Applicants must submit a copy of the Erosion and Sediment Control Plan referenced in the USACE San Luis Rey Rover Sediment Management Environmental Assessment dated August 2016. The Erosion and Sediment Control Plan shall include short and long term BMPs to minimize the erosion of sediments into the San Luis Rey River channel. The Erosion and Sediment Control Plan shall be implemented and a copy of the Plan shall be retained on-site.

V. **Storm Water Pollution Prevention Plan (SWPPP). Prior to the start of construction**, the Applicants must submit a copy of the SWPPP prepared pursuant to the General Construction Storm Water Permit.

W. **Reporting Authority.** The submittal of information required under this Certification, or in response to a suspected violation of any condition of this Certification, is required pursuant to Water Code section 13267 and 13383. Civil liability may be administratively imposed by the San Diego Water Board for failure to submit information pursuant to Water Code sections 13268 or 13385.

X. **Electronic Document Submittal.** The Applicants must submit all reports and information required under this Certification in electronic format via e-mail to SanDiego@waterboards.ca.gov. Documents over 50 megabytes will not be accepted via e-mail and must be placed on a disc and delivered to:

California Regional Water Quality Control Board
San Diego Region
Attn: 401 Certification No. R9-2015-0161:818549:amonji
2375 Northside Drive, Suite 100
San Diego, California 92108

Each electronic document must be submitted as a single file, in Portable Document Format (PDF), and converted to text searchable format using Optical Character Recognition (OCR). All electronic documents must include scanned copies of all signature pages; electronic signatures will not be accepted. Electronic documents submitted to the San Diego Water Board must include the following identification numbers in the header or subject line: Certification No. R9-2015-0161:818549:amonji.

Y. **Document Signatory Requirements**. All applications, reports, or information submitted to the San Diego Water Board must be signed as follows:

1. For a corporation, by a responsible corporate officer of at least the level of vice president.

2. For a partnership or sole proprietorship, by a general partner or proprietor, respectively.

3. For a municipality, or a state, federal, or other public agency, by either a principal executive officer or ranking elected official.

4. A duly authorized representative may sign applications, reports, or information if:

   I. The authorization is made in writing by a person described above.

   II. the authorization specifies either an individual or position having responsibility for the overall operation of the regulated activity.

   III. The written authorization is submitted to the San Diego Water Board Executive Officer.

   If such authorization is no longer accurate because a different individual or position has responsibility for the overall operation of the Project, a new authorization satisfying the above requirements must be submitted to the San Diego Water Board prior to or together with any reports, information, or applications, to be signed by an authorized representative.

Z. **Document Certification Requirements**. All applications, reports, or information submitted to the San Diego Water Board must be certified as follows:

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

VII. NOTIFICATION REQUIREMENTS

A. **Twenty Four Hour Non-Compliance Reporting.** The Applicants shall report any noncompliance which may endanger health or the environment. Any such information shall be provided orally to the San Diego Water Board within **24 hours** from the time the Applicants becomes aware of the circumstances. A written submission shall also be provided within five days of the time the Applicants becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected; the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance. The San Diego Water Board, or an authorized representative, may waive the written report on a case-by-case basis if the oral report has been received within 24 hours.

B. **Hazardous Substance Discharge**. Except as provided in Water Code section 13271(b), any person who, without regard to intent or negligence, causes or permits any

hazardous substance or sewage to be discharged in or on any waters of the State, shall as soon as (a) that person has knowledge of the discharge, (b) notification is possible, and (c) notification can be provided without substantially impeding cleanup or other emergency measures, immediately notify the County of San Diego, in accordance with California Health and Safety Code section 5411.5 and the California Office of Emergency Services of the discharge in accordance with the spill reporting provision of the State toxic disaster contingency plan adopted pursuant to Government Code Title 2, Division 1, Chapter 7, Article 3.7 (commencing with section 8574.17), and immediately notify the State Water Board or the San Diego Water Board of the discharge. This provision does not require reporting of any discharge of less than a reportable quantity as provided for under subdivisions (f) and (g) of section 13271 of the Water Code unless the Applicants is in violation of a Basin Plan prohibition.

C. **Oil or Petroleum Product Discharge.** Except as provided in Water Code section 13272(b), any person who without regard to intent or negligence, causes or permits any oil or petroleum product to be discharged in or on any waters of the State, or discharged or deposited where it is, or probably will be, discharged in or on any waters of the State, shall, as soon as (a) such person has knowledge of the discharge, (b) notification is possible, and (c) notification can be provided without substantially impeding cleanup or other emergency measures, immediately notify the California Office of Emergency Services of the discharge in accordance with the spill reporting provision of the State oil spill contingency plan adopted pursuant to Government Code Title 2, Division 1, Chapter 7, Article 3.7 (commencing with section 8574.1). This requirement does not require reporting of any discharge of less than 42 gallons unless the discharge is also required to be reported pursuant to Clean Water Act section 311, or the discharge is in violation of a Basin Plan prohibition.

D. **Anticipated Noncompliance**. The Applicants shall give advance notice to the San Diego Water Board of any planned changes in the Project or the Compensatory Mitigation project which may result in noncompliance with Certification conditions or requirements.

E. **Transfers.** This Certification is not transferable in its entirety or in part to any person or organization except after notice to the San Diego Water Board in accordance with the following terms:

1. **Transfer of Property Ownership:** The Applicants must notify the San Diego Water Board of any change in ownership of the Project area. Notification of change in ownership must include, but not be limited to, a statement that the Applicants has provided the purchaser with a copy of the Section 401 Water Quality Certification and that the purchaser understands and accepts the certification requirements and the obligation to implement them or be subject to liability for failure to do so; the seller and purchaser must sign and date the notification and provide such notification to the San Diego Water Board **within 10 days of the transfer of ownership.**

2. **Transfer of Mitigation Responsibility:** Any notification of transfer of responsibilities to satisfy the mitigation requirements set forth in this Certification must include a signed statement from an authorized representative of the new party

(transferee) demonstrating acceptance and understanding of the responsibility to comply with and fully satisfy the mitigation conditions and agreement that failure to comply with the mitigation conditions and associated requirements may subject the transferee to enforcement by the San Diego Water Board under Water Code section 13385, subdivision (a). Notification of transfer of responsibilities meeting the above conditions must be provided to the San Diego Water Board **within 10 days of the transfer date.**

3. **Transfer of Post-Construction BMP Maintenance Responsibility:** The Applicants assumes responsibility for the inspection and maintenance of all post-construction structural BMPs until such responsibility is legally transferred to another entity. At the time maintenance responsibility for post-construction BMPs is legally transferred the Applicants must submit to the San Diego Water Board a copy of such documentation and must provide the transferee with a copy of a long-term BMP maintenance plan that complies with manufacturer specifications. The Applicants must provide such notification to the San Diego Water Board within **10 days** of the transfer of BMP maintenance responsibility.

Upon properly noticed transfers of responsibility, the transferee assumes responsibility for compliance with this Certification and references in this Certification to the Applicants will be interpreted to refer to the transferee as appropriate. Transfer of responsibility does not necessarily relieve the Applicants of responsibility for compliance with this Certification in the event that a transferee fails to comply.

VIII. CALIFORNIA ENVIRONMENTAL QUALITY ACT COMPLIANCE

A. The City of Oceanside is the Lead Agency under the California Environmental Quality Act (CEQA) (Public Resources Code section 21000, et seq.) section 21067, and CEQA Guidelines (California Code of Regulations, title 14, section 15000 et seq.) section 15367, and has filed a Notice of Determination dated August 23, 2007 for the Final Environmental Impact Report (FEIR) titled *Final Integrated Post Authorization Decision Document Supplemental Impact Statement/Environmental Impact Report for the San Luis Rey River Flood Control Project*, July 2007 (State Clearing House Number 2005124001). The Lead Agency has determined the Project will have a significant effect on the environment and mitigation measures were made a condition of the Project.

B. The Applicants also finalized an Environmental Assessment/Finding of No Significant Impact (FONSI) and Negative Declaration for the *San Luis Rey Flood Control Project, Oceanside, San Diego County, California, Sediment Management and Beach Sand Placement, June 2017.*

C. The San Diego Water Board is a Responsible Agency under CEQA (Public Resources Code section 21069; CEQA Guidelines section 15381). The San Diego Water Board has considered the Lead Agency's FEIR and FONSI and finds that the Project as proposed will have a significant effect on resources within the San Diego Water Board's purview.

D. The San Diego Water Board has required mitigation measures as a condition of this Certification to avoid or reduce the environmental effects of the Project to resources within the Board's purview to a less than significant level.

E. The Lead Agency has adopted a mitigation monitoring and reporting program pursuant to Public Resources Code section 21081.6 and CEQA Guidelines section 15097 to ensure that mitigation measures and revisions to the Project identified in the FEIR are implemented. The Mitigation Monitoring and Reporting Program (MMRP) is included and incorporated by reference in Attachment 5 to this Certification. The Applicants shall implement the Lead Agency's MMRP described in the FEIR, as it pertains to resources within the San Diego Water Board's purview. The San Diego Water Board has imposed additional MMRP requirements as specified in sections V and VI of this Certification.

F. As a Responsible Agency under CEQA, the San Diego Water Board will file a Notice of Determination in accordance with CEQA Guidelines section 15096 subdivision (i).

IX. SAN DIEGO WATER BOARD CONTACT PERSON

Alan Monji, Environmental Scientist
Telephone: 619-521-3968
Email: Alan.Monji@waterboards.ca.gov

X. WATER QUALITY CERTIFICATION

I hereby certify that the proposed discharge from the **San Luis Rey River Flood Control** (Certification No. R9-2015-0161) will comply with the applicable provisions of sections 301 ("Effluent Limitations"), 302 ("Water Quality Related Effluent Limitations"), 303 ("Water Quality Standards and Implementation Plans"), 306 ("National Standards of Performance"), and 307 ("Toxic and Pretreatment Effluent Standards") of the Clean Water Act. This discharge is also regulated under State Water Board Order No. 2003-0017-DWQ, "*Statewide General Waste Discharge Requirements for Dredged or Fill Discharges that have Received State Water Quality Certification (General WDRs)*," which requires compliance with all conditions of this Water Quality Certification. Please note that enrollment under Order No. 2003-017-DWQ is conditional and, should new information come to our attention that indicates a water quality problem, the San Diego Water Board may issue individual waste discharge requirements at that time. Except insofar as may be modified by any preceding conditions, all Certification actions are contingent on (a) the discharge being limited to, and all proposed mitigation being completed in strict compliance with, the Applicants' Project description and/or the description in this Certification, and (b) compliance with all applicable requirements of the Basin Plan.

I, David W. Gibson, Executive Officer, do hereby certify the forgoing is a full, true, and correct copy of Certification No. R9-2015-0161 issued on July 20, 2017.

James G. Smith, AEO
for DAVID W. GIBSON
Executive Officer
San Diego Water Board

20 July 2017
Date

ATTACHMENT 1

DEFINITIONS

Activity - when used in reference to a permit means any action, undertaking, or project including, but not limited to, construction, operation, maintenance, repair, modification, and restoration which may result in any discharge to waters of the state.

Buffer - means an upland, wetland, and/or riparian area that protects and/or enhances aquatic resource functions associated with wetlands, rivers, streams, lakes, marine, and estuarine systems from disturbances associated with adjacent land uses.

California Rapid Assessment Method (CRAM) - is a wetland assessment method intended to provide a rapid, scientifically-defensible and repeatable assessment methodology to monitor status and trends in the conditions of wetlands for applications throughout the state. It can also be used to assess the performance of compensatory mitigation projects and restoration projects. CRAM provides an assessment of overall ecological condition in terms of four attributes: landscape context and buffer, hydrology, physical structure and biotic structure. CRAM also includes an assessment of key stressors that may be affecting wetland condition and a "field to PC" data management tool (eCRAM) to ensure consistency and quality of data produced with the method.

Compensatory Mitigation Project - means compensatory mitigation implemented by the Applicant as a requirement of this Certification (i.e., applicant -responsible mitigation), or by a mitigation bank or an in-lieu fee program.

Discharge of dredged material – means any addition of dredged material into, including redeposit of dredged material other than incidental fallback within, the waters of the United States and/or State.

Discharge of fill material – means the addition of fill material into waters of the United States and/or State.

Dredged material – means material that is excavated or dredged from waters of the United States and/or State.

Ecological Success Performance Standards – means observable or measurable physical (including hydrological), chemical, and/or biological attributes that are used to determine if a compensatory mitigation project meets its objectives.

Enhancement – means the manipulation of the physical, chemical, or biological characteristics of an aquatic resource to improve a specific aquatic resource function(s). Enhancement results in the gain of selected aquatic resource function(s), but may also lead to a decline in other aquatic resource function(s). Enhancement does not result in a gain in aquatic resource area.

Establishment – means the manipulation of the physical, chemical, or biological characteristics present to develop an aquatic resource that did not previously exist. Creation results in a gain in aquatic resource area.

Fill material – means any material used for the primary purpose of replacing an aquatic area with dry land or of changing the bottom elevation of a water body.

Isolated wetland – means a wetland with no surface water connection to other aquatic resources.

Mitigation Bank – means a site, or suite of sites, where resources (e.g., wetlands, streams, riparian areas) are restored, established, enhanced, and/or preserved for the purpose of providing mitigation for impacts authorized by this Certification.

Preservation - means the removal of a threat to, or preventing the decline of, aquatic resources by an action in or near those aquatic resources. This term includes activities commonly associated with the protection and maintenance of aquatic resources through the implementation of appropriate legal and physical mechanisms. Preservation does not result in a gain of aquatic resource area or functions.

Re-establishment - means the manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/ historic functions to a former aquatic resource. Re-establishment results in rebuilding a former aquatic resource and results in a gain in aquatic resource area and functions.

Rehabilitation - means the manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural/ historic functions to a degraded aquatic resource. Rehabilitation results in a gain in aquatic resource function, but does not result in a gain in aquatic resource area.

Restoration - means the manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former or degraded aquatic resource. For the purpose of tracking net gains in aquatic resource area, restoration is divided into two categories: re-establishment and rehabilitation.

Start of Project Construction - For the purpose of this Certification, "start of Project construction" means to engage in a program of on-site construction, including site clearing, grading, dredging, landfilling, changing equipment, substituting equipment, or even moving the location of equipment specifically designed for a stationary source in preparation for the fabrication, erection or installation of the building components of the stationary source within waters of the United States and/or State.

Uplands - means non-wetland areas that lack any field-based indicators of wetlands or other aquatic conditions. Uplands are generally well-drained and occur above (i.e., up-slope) from nearby aquatic areas. Wetlands can, however, be entirely surrounded by uplands. For example, some natural seeps and constructed stock ponds lack aboveground hydrological connection to other aquatic areas. In the watershed context, uplands comprise the landscape matrix in which aquatic areas form. They are the primary sources of sediment, surface runoff, and associated chemicals that are deposited in aquatic areas or transported through them.

Water quality objectives and other appropriate requirements of state law – means the water quality objectives and beneficial uses as specified in the appropriate water quality control plan(s); the applicable provisions of sections 301, 302, 303, 306, and 307 of the Clean Water Act; and any other appropriate requirement of state law.

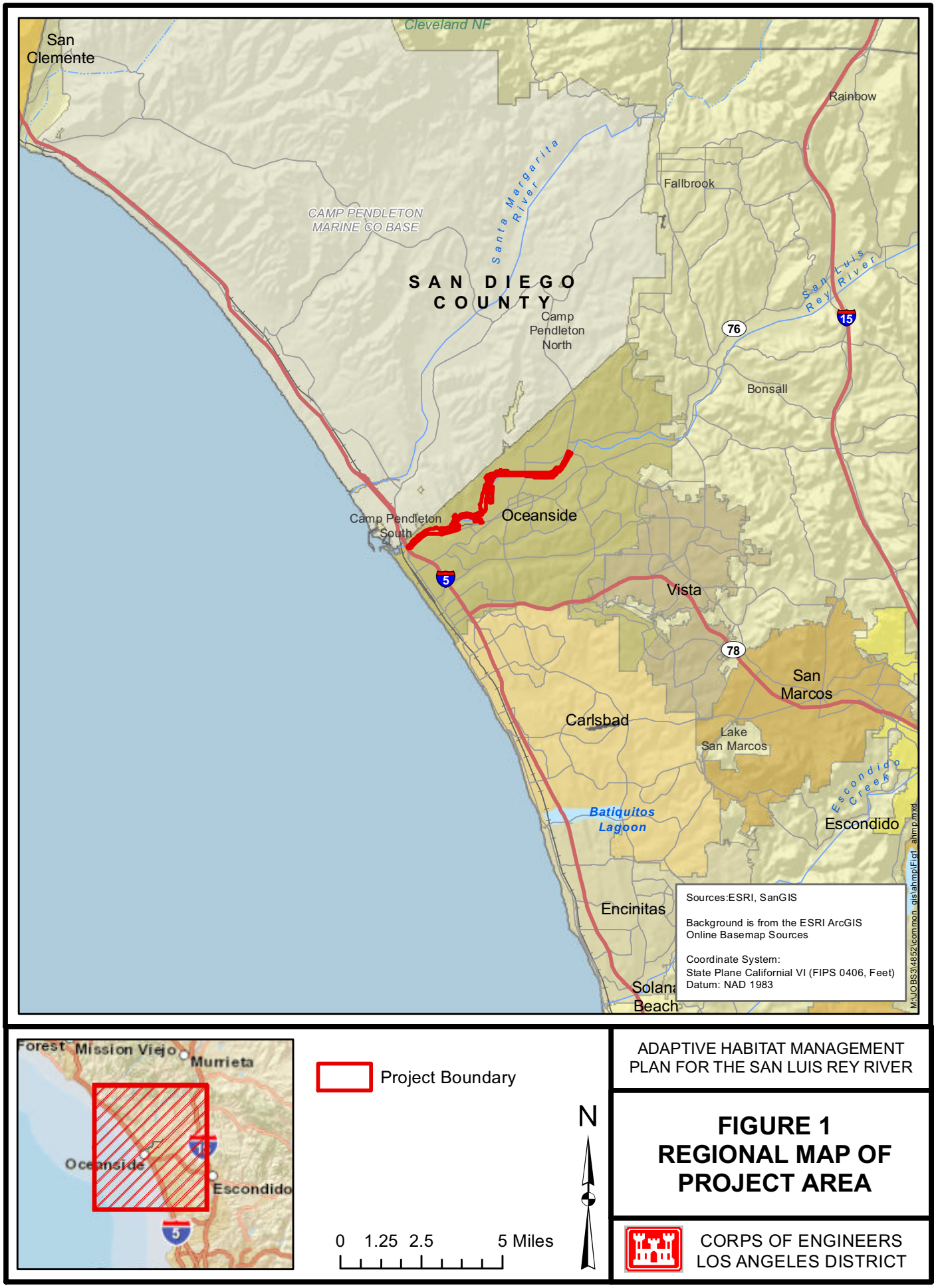
Waters of the State - means any surface water or groundwater, including saline waters, within the boundaries of the State. [Water Code section13050, subd. (e)].

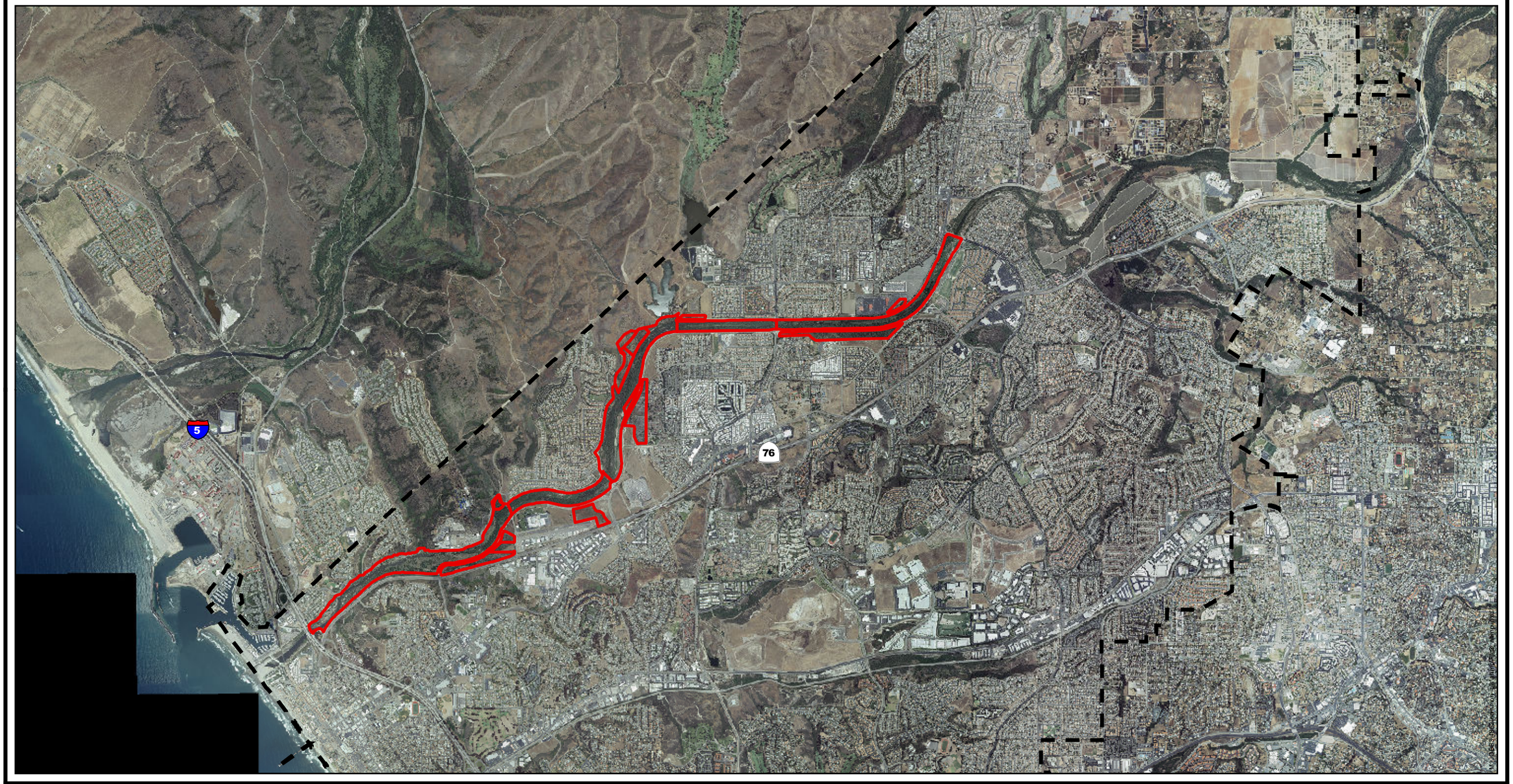
ATTACHMENT 2

LOCATION MAPS AND FIGURES

1. RECON, Adaptive Habitat Management Plan for San Luis Rey River Flood Risk Management, Figure 1, Regional Map of Project Area.

2. RECON, Adaptive Habitat Management Plan for San Luis Rey River Flood Risk Management, Figure 2, Plan Area.


San Clemente
Cleveland NF
Rainbow
Fallbrook
CAMP PENDLETON MARINE CO BASE
Santa Margarita River
SAN DIEGO COUNTY
Camp Pendleton North
San Luis Rey River
76
15
Bonsall
Camp Pendleton South
Oceanside
5
Vista
78
San Marcos
Carlsbad
Lake San Marcos
Batiquitos Lagoon
Escondido Creek
Escondido
Encinitas
Solana Beach
Sources:ESRI, SanGIS
Background is from the ESRI ArcGIS Online Basemap Sources
Coordinate System:
State Plane California VI (FIPS 0406, Feet)
Datum: NAD 1983
M:\JOBS3\4852\common_gis\ahmp\Fig1_ahmp.mxd
Forest
Mission Viejo
Murrieta
Oceanside
Escondido
5
Project Boundary
N
0 1.25 2.5 5 Miles
ADAPTIVE HABITAT MANAGEMENT PLAN FOR THE SAN LUIS REY RIVER
FIGURE 1
REGIONAL MAP OF PROJECT AREA
CORPS OF ENGINEERS
LOS ANGELES DISTRICT



Project Boundary

City of Oceanside

Sources: SanGIS, ESRI

Image source: SanGIS (flown May 2012)

Coordinate System:
State Plane Californial VI (FIPS 0406, Feet)
Datum: NAD 1983

0 0.5 1 2 Miles

N

ADAPTIVE HABITAT MANAGEMENT PLAN FOR THE SAN LUIS REY RIVER

FIGURE 2
PLAN AREA

CORPS OF ENGINEERS
LOS ANGELES DISTRICT

ATTACHMENT 3

PROJECT FIGURES

1. U.S. Army Corps of Engineers, Adaptive Habitat Management Plan for San Luis Rey River Flood Risk Management, Figures 3A-3C, Project Land Classifications.

2. U.S. Army Corps of Engineers, Restoration Plan for San Luis Rey River Flood Risk Management, Figure 4, Off Site (Rincon) Mitigation Area.

3. U.S. Army Corps of Engineers, San Luis Rey River Flood Control Project, Sediment Management, Figure 1.1-2, Project Location on USGS Map.

4. U.S. Army Corps of Engineers, San Luis Rey River Flood Control Project, Sediment Management, Figure 2.3-1, Sediment Management Action Area.

5. U.S. Army Corps of Engineers, San Luis Rey River Flood Control Project, Sediment Management and Beach Sand Placement, Figure 2.3-2, Construction Vehicle Ingress and Egress Routes.

6. U.S. Army Corps of Engineers, San Luis Rey River Flood Control Project, Sediment Management and Beach Sand Placement, Figure 2.3-3, Beach and Sand Placement Area.

7. U.S. Army Corps of Engineers, San Luis Rey River Flood Control Project, Sediment Management and Beach Sand Placement, Figure 2.3-5, Beach and Sand Placement Area and Haul Route Options.

8. U.S. Army Corps of Engineers, San Luis Rey River Flood Control Project, Sediment Management and Beach Sand Placement, Figure 2.3-6, Proposed Maintenance Road/Trail Detour.

MCB CAMP PENDLETON

REACH 1

REACH 2

REACH 3a

Lower Pond

Middle Pond

SR-76 NEW

MISSION

MESA

CANYON

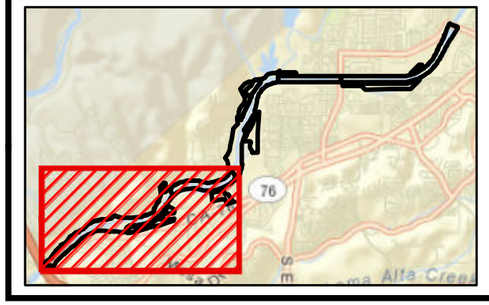
MESA

5

Sources: RECON, SanGIS

Image Source: SanGIS (flown May 2012)

Coordinate System:
State Plane Californial VI (FIPS 0406, Feet)
Datum: NAD 1983



Survey Area

Not a Part

Working Vegetation Management Plan

Active Vegetation Management

Compensation/Preservation Area

Unmaintained Vegetation

Water Detention

Water Detention/Mitigation Pond

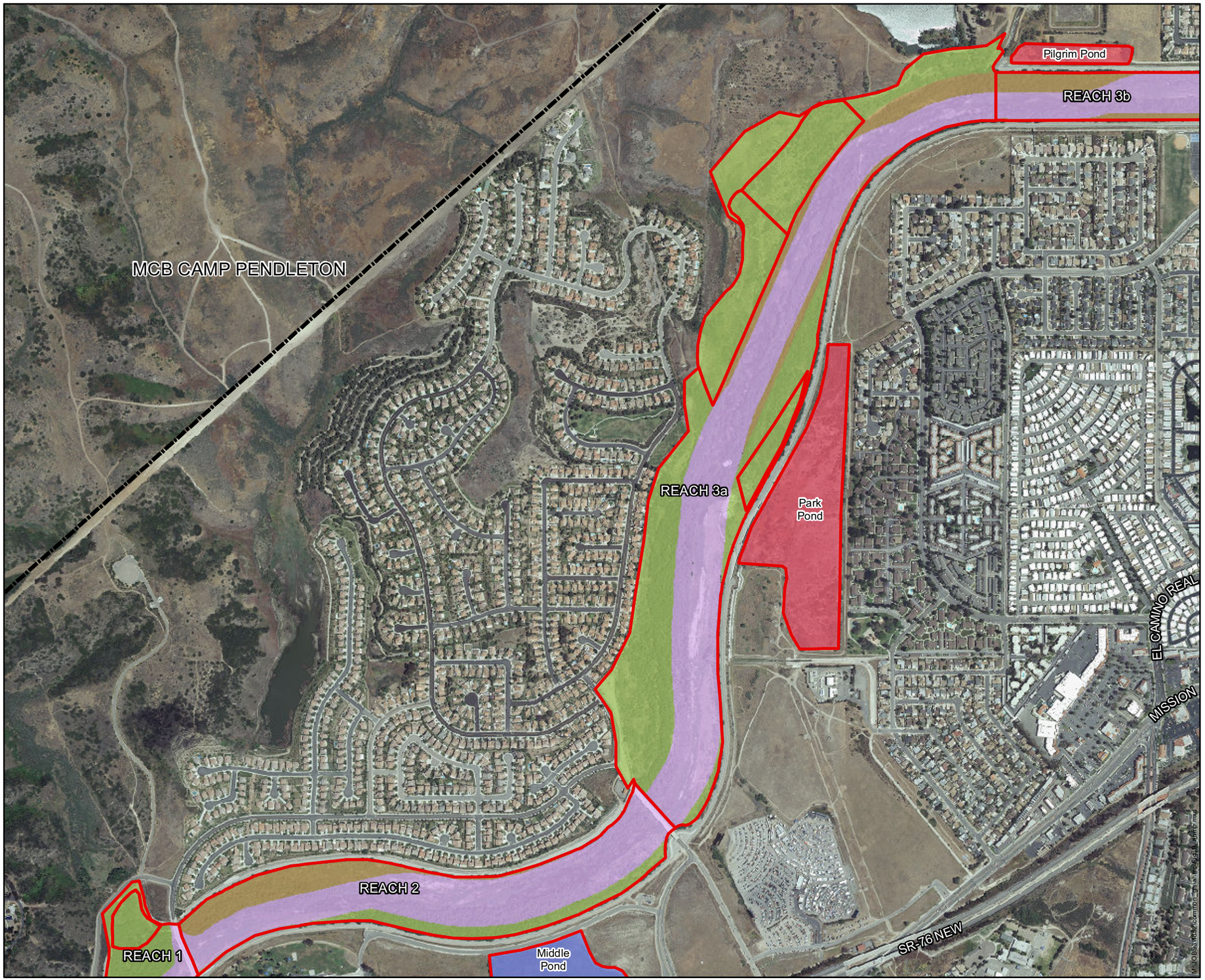
0 550 1,100 2,200 Feet

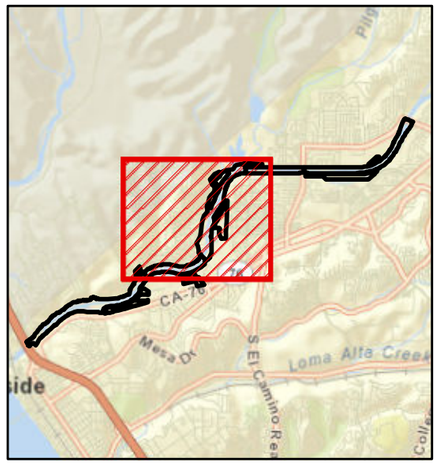
N

ADAPTIVE HABITAT MANAGEMENT PLAN FOR THE SAN LUIS REY RIVER

FIGURE 3A
PROJECT LAND CLASSIFICATIONS

CORPS OF ENGINEERS
LOS ANGELES DISTRICT





Project Boundary

Working Vegetation Management Plan

- Active Vegetation Management
- Compensation/Preservation Area
- Unmaintained Vegetation
- Water Detention
- Water Detention/Mitigation Pond

Sources: RECON, SanGIS

Image Source: SanGIS (flown May 2012)

Coordinate System:
State Plane Californial VI (FIPS 0406, Feet)
Datum: NAD 1983

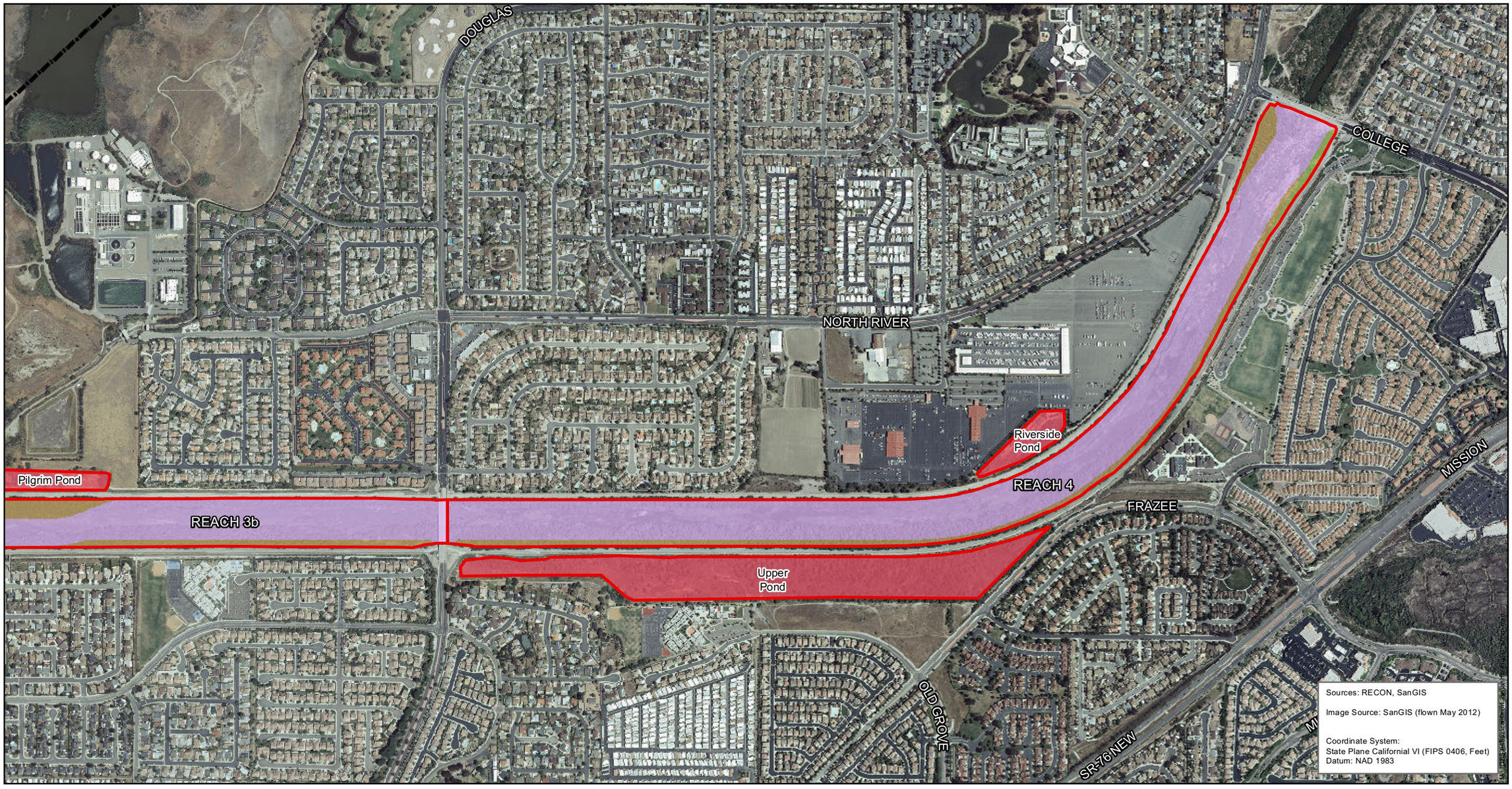
0 325 650 1,300
Feet

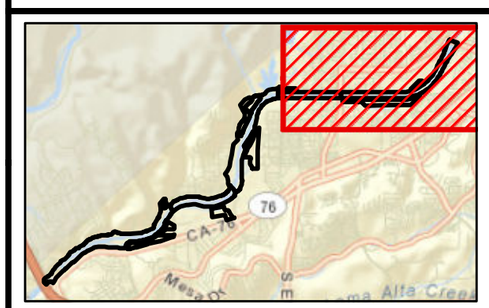
N

ADAPTIVE HABITAT MANAGEMENT PLAN FOR THE SAN LUIS REY RIVER

FIGURE 3B
PROJECT LAND CLASSIFICATIONS

CORPS OF ENGINEERS
LOS ANGELES DISTRICT





Project Boundary

Working Vegetation Management Plan

- Active Vegetation Management
- Compensation/Preservation Area
- Unmaintained Vegetation
- Water Detention/Mitigation Pond

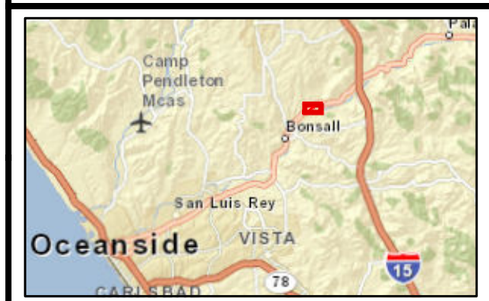
0 550 1,100 2,200 Feet

N

ADAPTIVE HABITAT MANAGEMENT PLAN FOR THE SAN LUIS REY RIVER

FIGURE 3C
PROJECT LAND CLASSIFICATIONS

CORPS OF ENGINEERS
LOS ANGELES DISTRICT



Vegetation Communities

- Arundo donax Semi-natural Stands
- Mediterranean California Naturalized Annual and Perennial Grassland Semi-natural Stands
- Populus fremontii - Salix gooddingii/Baccharis salicifolia Association
- Salix exigua Association

- Off-site Mitigation Area (Rincon Parcel)
- Arundo, Not treated
- Arundo, Treated

Sources:
Image Source: Aerials Express (flown March 2010)

Coordinate System:
State Plane California VI (FIPS 0406, Feet)
Datum: NAD 1983

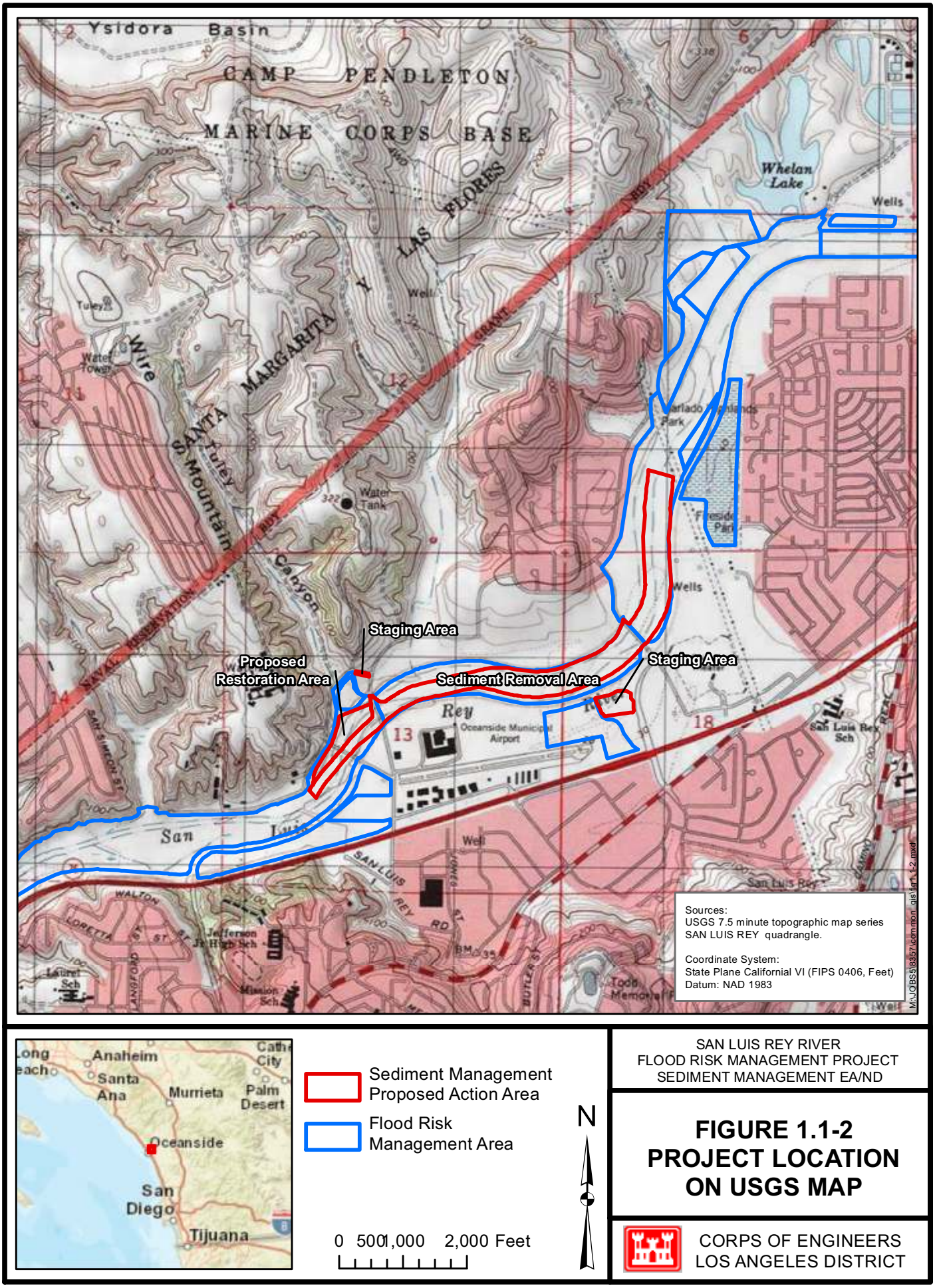
0 200 400 800 Feet

N

RESTORATION PLAN FOR THE SLRR FLOOD RISK MANAGEMENT PROJECT

FIGURE 4
OFF-SITE MITIGATION AREA

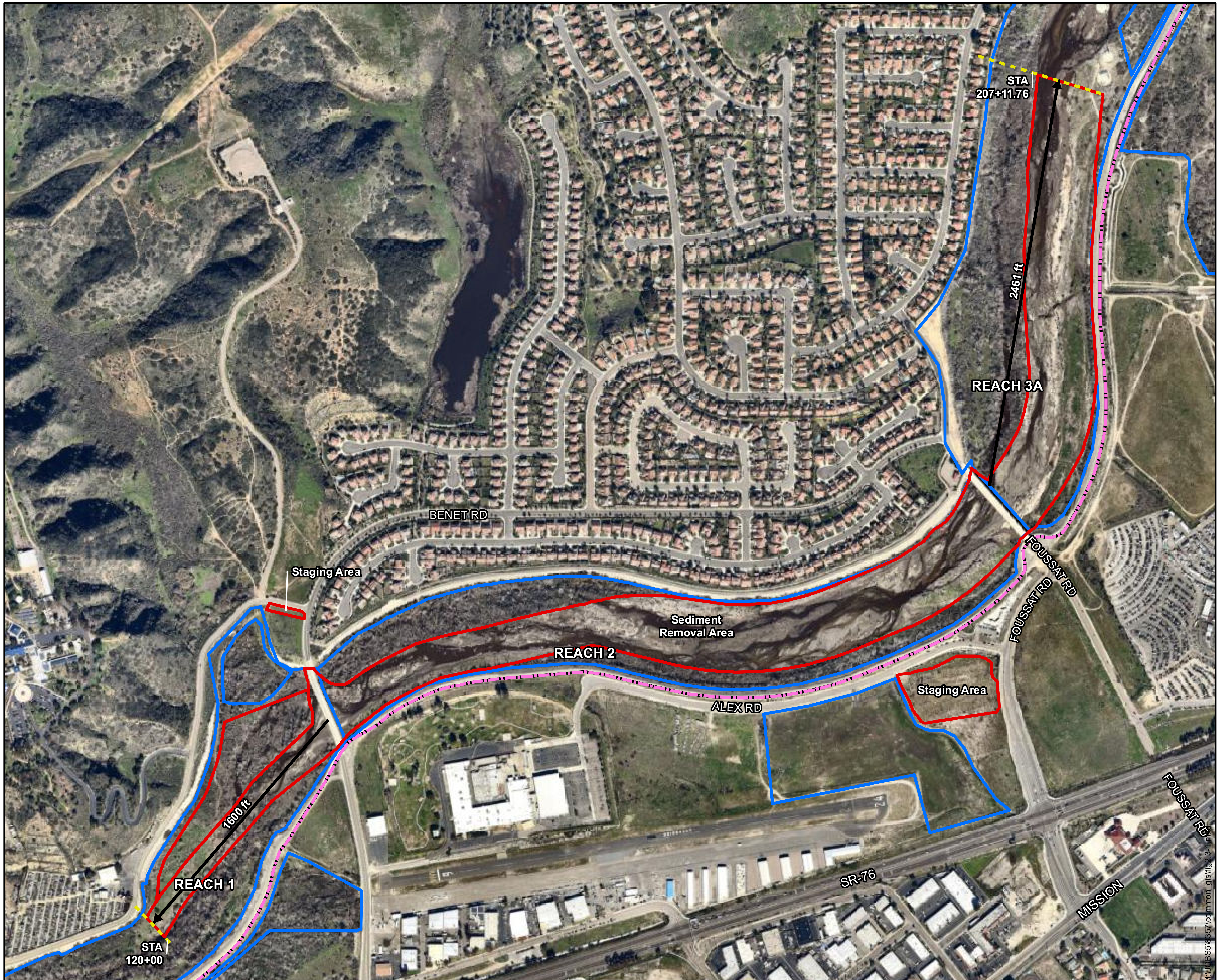
CORPS OF ENGINEERS
LOS ANGELES DISTRICT

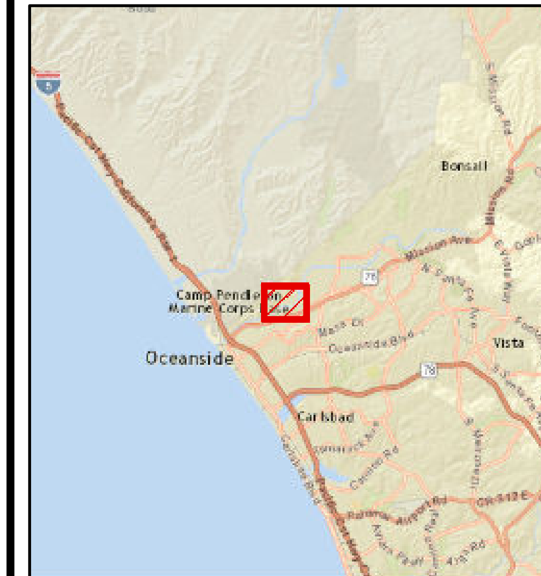


SAN LUIS REY RIVER
FLOOD RISK MANAGEMENT PROJECT
SEDIMENT MANAGEMENT EA/ND

FIGURE 1.1-2
PROJECT LOCATION ON USGS MAP

CORPS OF ENGINEERS
LOS ANGELES DISTRICT





Sediment Management Area

Flood Risk Management Area

Flood Risk Management Maintenance Road/San Luis Rey River Bicycle Trail

Sources:

Background Aerial: NearMaps flown (Jan 2017)

Coordinate System:
State Plane California VI (FIPS 406, Feet)
Datum: NAD 1983

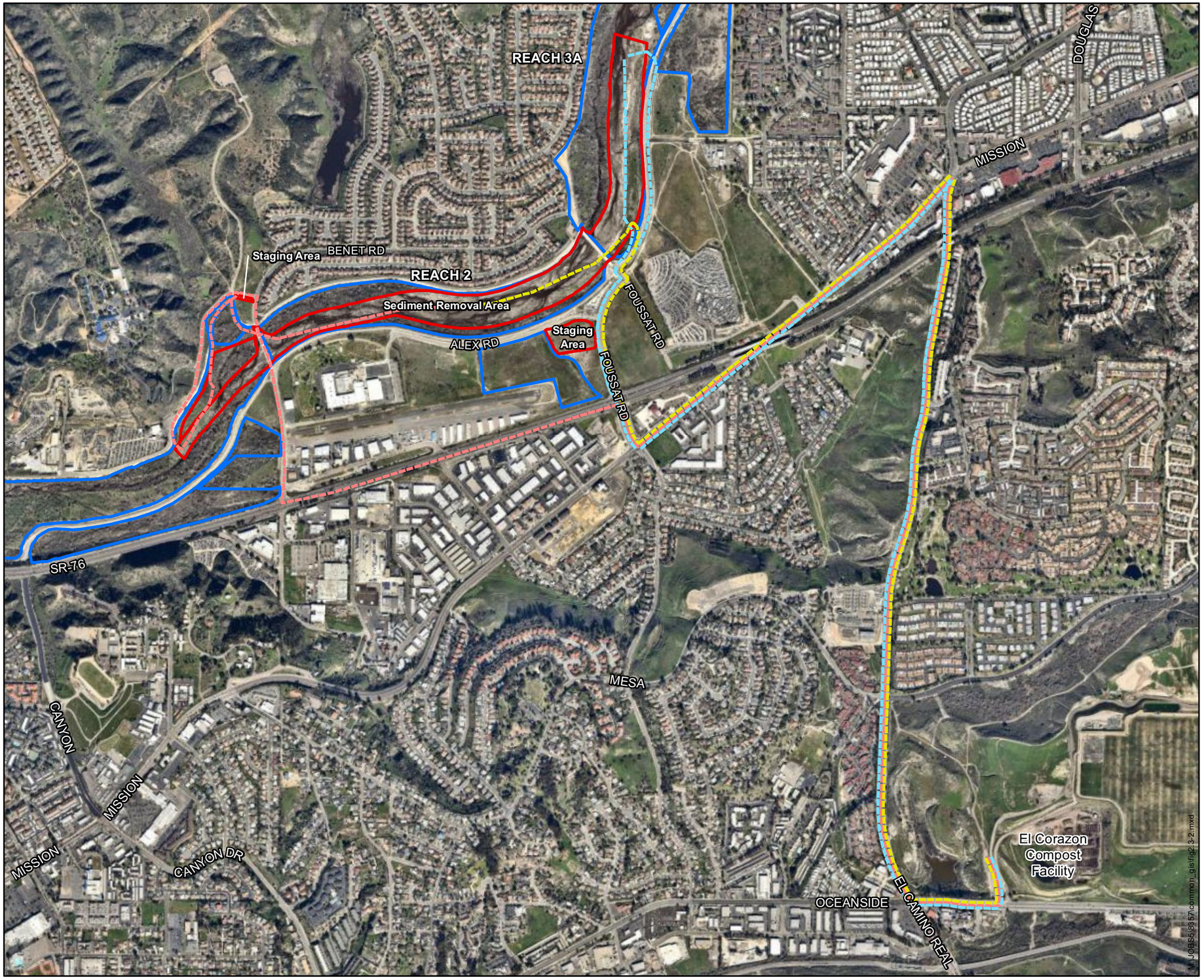
0 300 600 1,200
Feet

N

SAN LUIS REY RIVER FLOOD RISK MANAGEMENT PROJECT SEDIMENT MANAGEMENT AND BEACH SAND PLACEMENT EA/ND

FIGURE 2.3-1 SEDIMENT MANAGEMENT AREA

CORPS OF ENGINEERS
LOS ANGELES DISTRICT



Sediment Management Area

Flood Risk Management Area

Sediment Removal Routes

Reach 1/Reach 2-Lower Half

Reach 2-Upper Half

Reach 3A

Sources:

Background Aerial: NearMaps
(flown Jan 2017)

Coordinate System:
State Plane California VI (FIPS 406, Feet)
Datum: NAD 1983

0 600 1,200 2,400

Feet

N

SAN LUIS REY RIVER FLOOD RISK MANAGEMENT PROJECT SEDIMENT MANAGEMENT AND BEACH SAND PLACEMENT EA/ND

FIGURE 2.3-2
CONSTRUCTION VEHICLE INGRESS AND EGRESS ROUTES

CORPS OF ENGINEERS
LOS ANGELES DISTRICT

M:\JOBS6\8957\common_gis\fig2.3-2.mxd

Beach Sand Placement Area

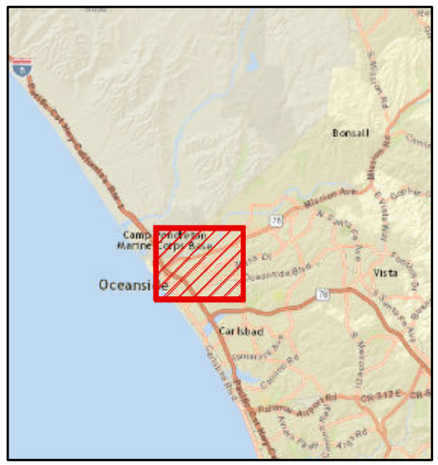
N

0 250 500 1,000 Feet

SAN LUIS REY RIVER FLOOD RISK MANAGEMENT PROJECT SEDIMENT MANAGEMENT AND BEACH SAND PLACEMENT EA/ND

FIGURE 2.3-3
BEACH SAND PLACEMENT AREA

CORPS OF ENGINEERS
LOS ANGELES DISTRICT



Sediment Management Area
Beach Sand Placement Area

Transport Routes

Preferred Option
- Delivery
- Return

Option 2
- Delivery
- Return

Staging Site Route
- Delivery
- Return

Sources:
Background Image: NearMaps (flown Jan 2017)

Coordinate System:
State Plane California VI (FIPS 406, Feet)
Datum: NAD 1983

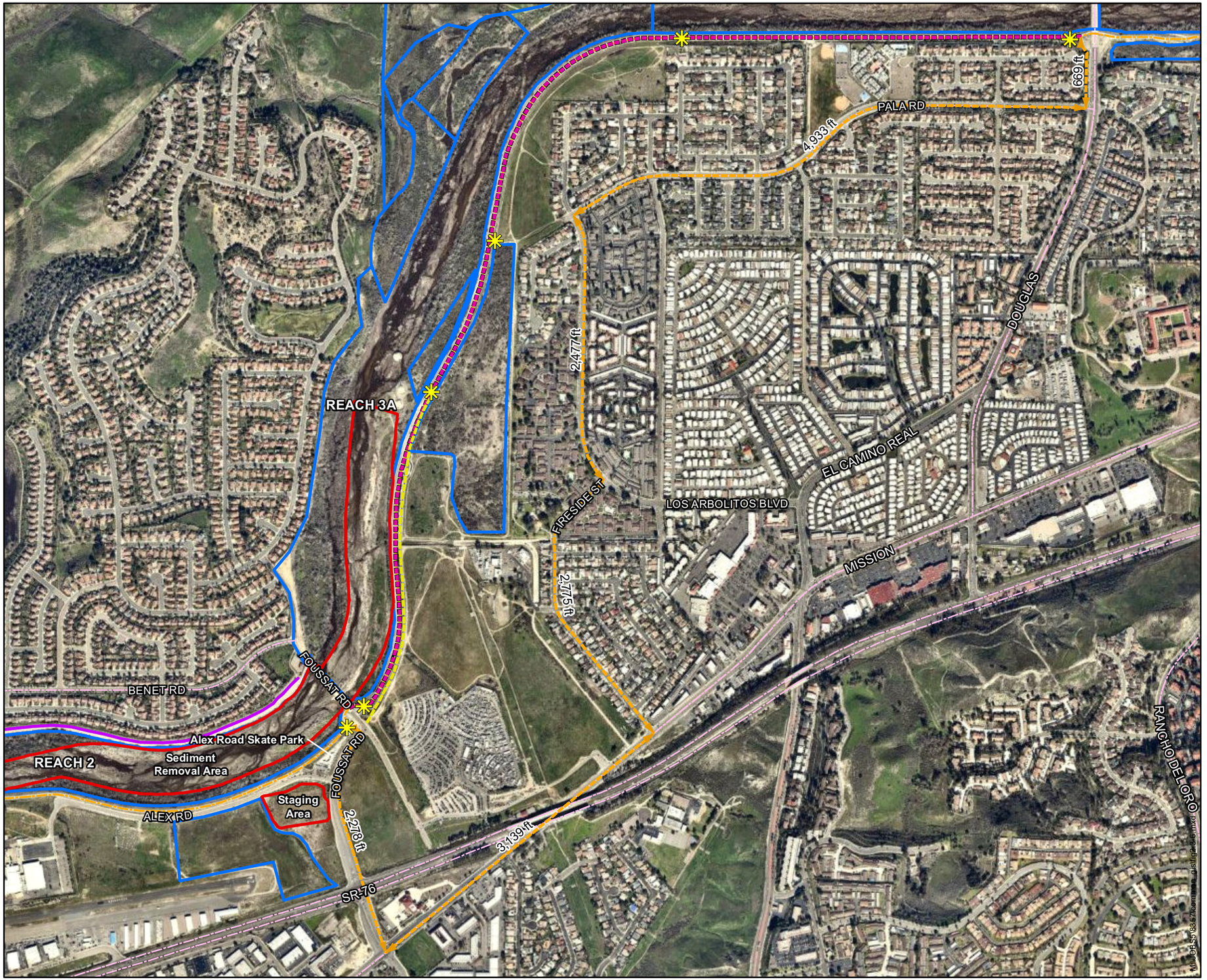
0 800 1,600 3,200
Feet

N

SAN LUIS REY RIVER FLOOD RISK MANAGEMENT PROJECT SEDIMENT MANAGEMENT AND BEACH SAND PLACEMENT EA/ND

FIGURE 2.3-5
BEACH SAND PLACEMENT AREA AND HAUL ROUTE OPTIONS

CORPS OF ENGINEERS
LOS ANGELES DISTRICT



Sediment Management Area

Flood Risk Management Area

Flood Risk Management Maintenance Road/San Luis Rey River Bicycle Trail

Class 2 Bicycle Routes

Maintenance Road

Chain-link Fence

Chain-link Path Closure

Closed Segments of San Luis Rey Bicycle Path

Proposed Bicycle Route Detour

Sources:

Background Image: NearMaps (flown Jan 2017)

Coordinate System:
State Plane California VI (FIPS 406, Feet)
Datum: NAD 1983

N

0 450 900 1,800
Feet

SAN LUIS REY RIVER FLOOD RISK MANAGEMENT PROJECT SEDIMENT MANAGEMENT AND BEACH SAND PLACEMENT EA/ND

FIGURE 2.3-6
PROPOSED MAINTENANCE ROAD/TRAIL DETOUR

CORPS OF ENGINEERS
LOS ANGELES DISTRICT

ATTACHMENT 4

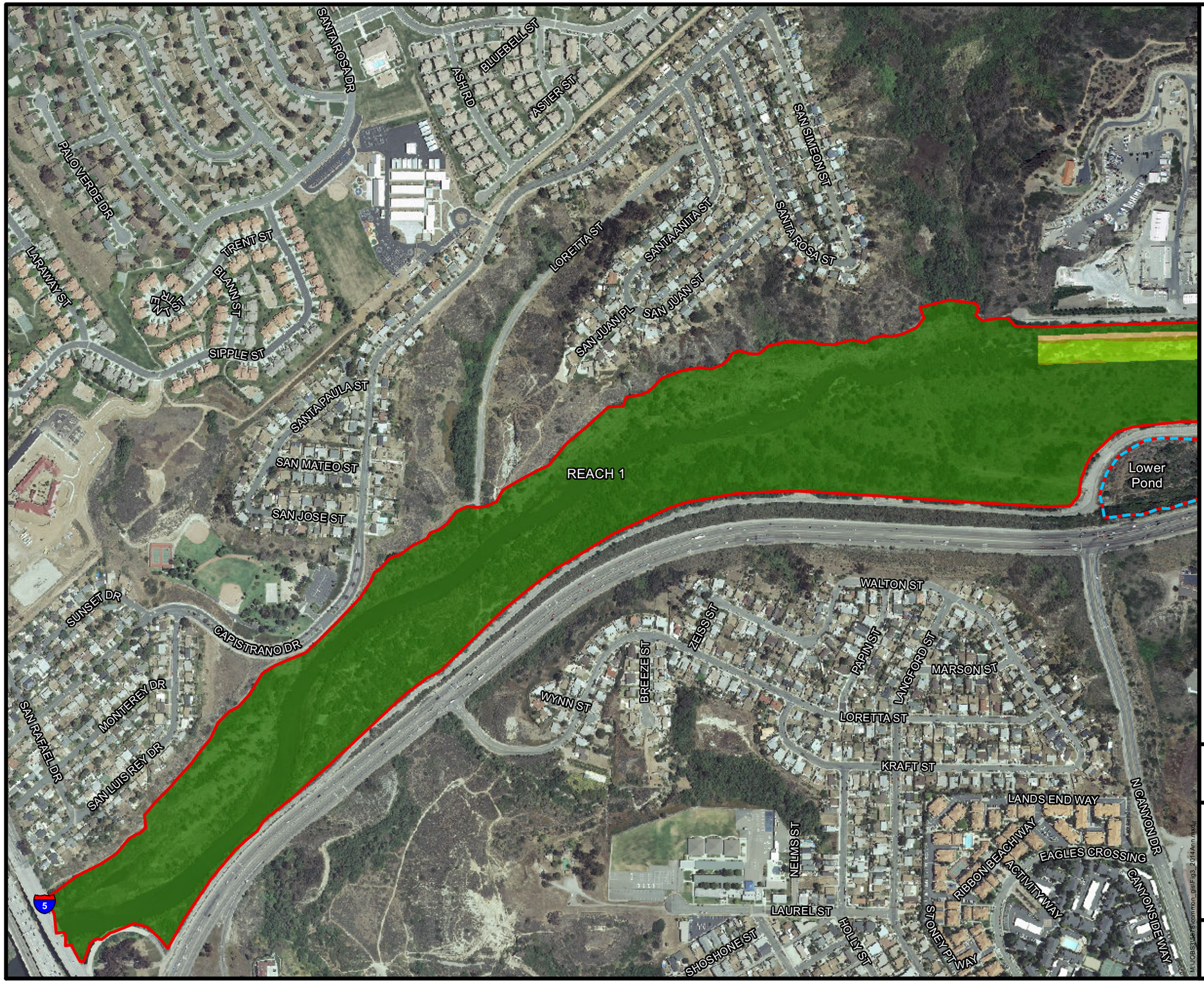
MITIGATION AND MAINTENANCE FIGURES

1. U.S. Army Corps of Engineers, San Luis Rey River Flood Control Project, Figures 3A-3F, Project Area on Aerial Photograph and Vegetation Maintained Plan.

2. U.S. Army Corps of Engineers, San Luis Rey River Flood Control Project, Figures 5A-5F, Active Restoration Areas, Relevé Sampling Locations, and Relevé Photo Point Locations.

3. U.S. Army Corps of Engineers, San Luis Rey River Flood Control Project, Figures 2A-2F, Passive and Active Restoration Activities, 2007-2014.

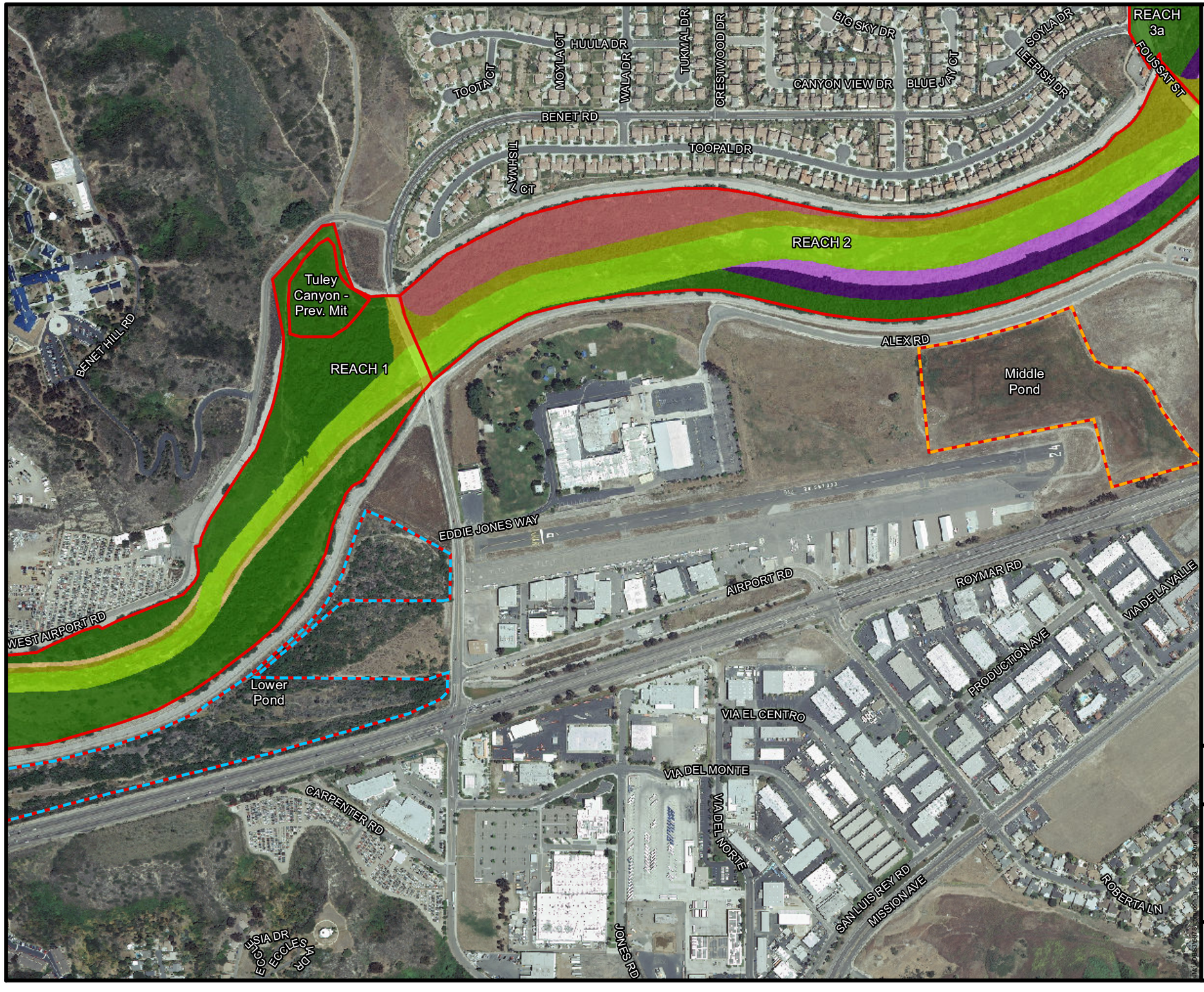
4. U.S. Army Corps of Engineers, 2014 Annual Population Monitoring Report for the San Luis Rey River Flood Risk Management Project, Figures 8A-8B, Least Bell's Vireo Survey Results in the Project Area, 2014.



2014 ANNUAL STATUS REPORT FOR THE RESTORATION PROGRAM FOR THE SLRR FLOOD RISK MANAGEMENT PROJECT

FIGURE 3-A
PROJECT AREA ON AERIAL PHOTOGRAPH AND VEGETATION MANAGEMENT PLAN

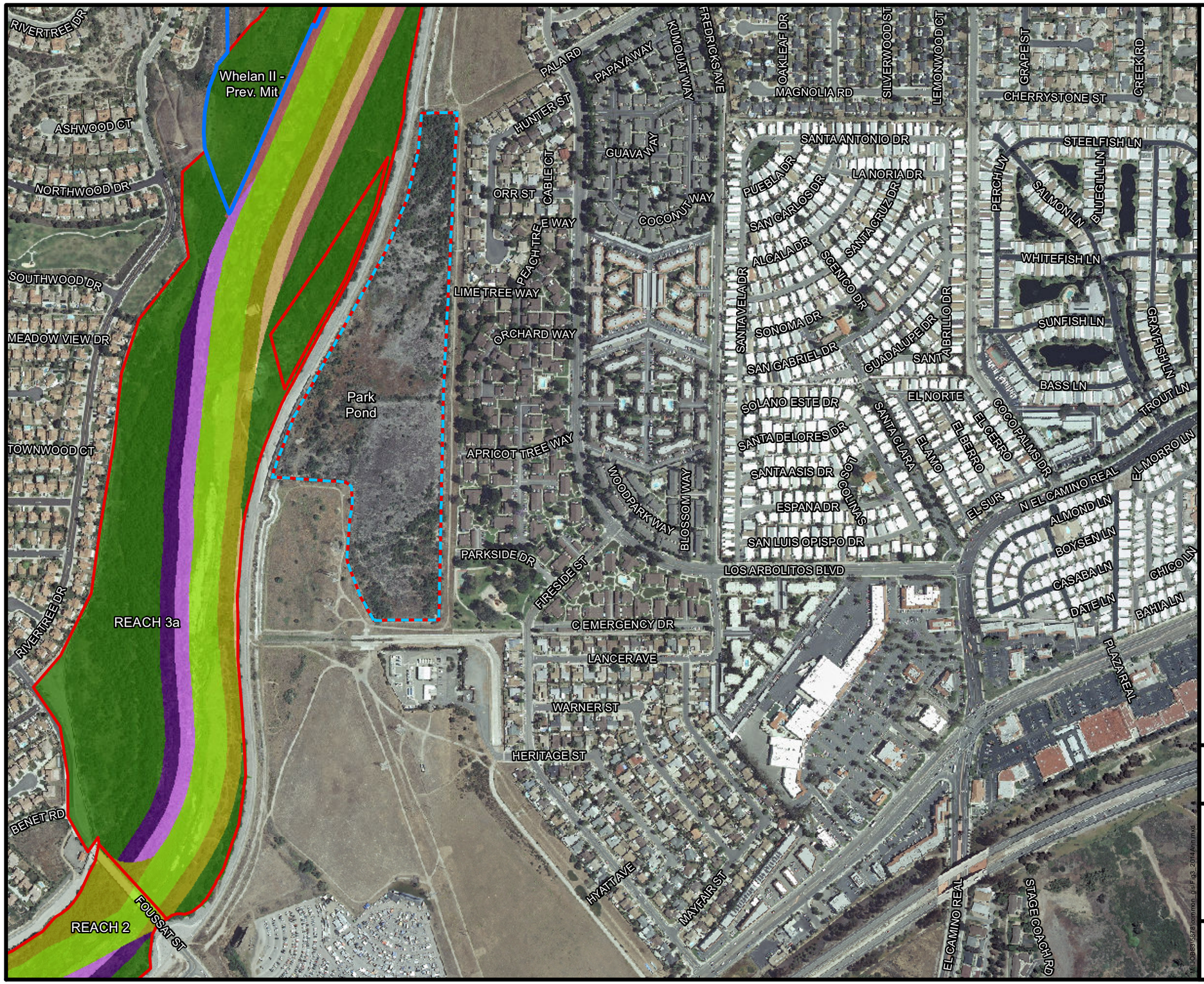
CORPS OF ENGINEERS
LOS ANGELES DISTRICT



2014 ANNUAL STATUS REPORT FOR THE RESTORATION PROGRAM FOR THE SLRR FLOOD RISK MANAGEMENT PROJECT

FIGURE 3-B
PROJECT AREA ON AERIAL PHOTOGRAPH AND VEGETATION MANAGEMENT PLAN

CORPS OF ENGINEERS
LOS ANGELES DISTRICT



Flood Risk Management Area (Project Location)

Whelan Restoration Site

Water Detention/Mitigation Pond

Vegetation Management Plan

Phase 1 Annual Mowing

Phase 2 Annual Mowing

Phase 3 Annual Mowing

1st 5-Year Rotational Mowing (Rotation 1)

2nd 5-Year Rotational Mowing (Rotation 2)

Compensation/Preservation Area

Unmaintained Vegetation

Sources: RECON
Image Source: SanGIS (flown May 2012)

Coordinate System:
State Plane California VI (FIPS 406, Feet)
Datum: NAD 1983

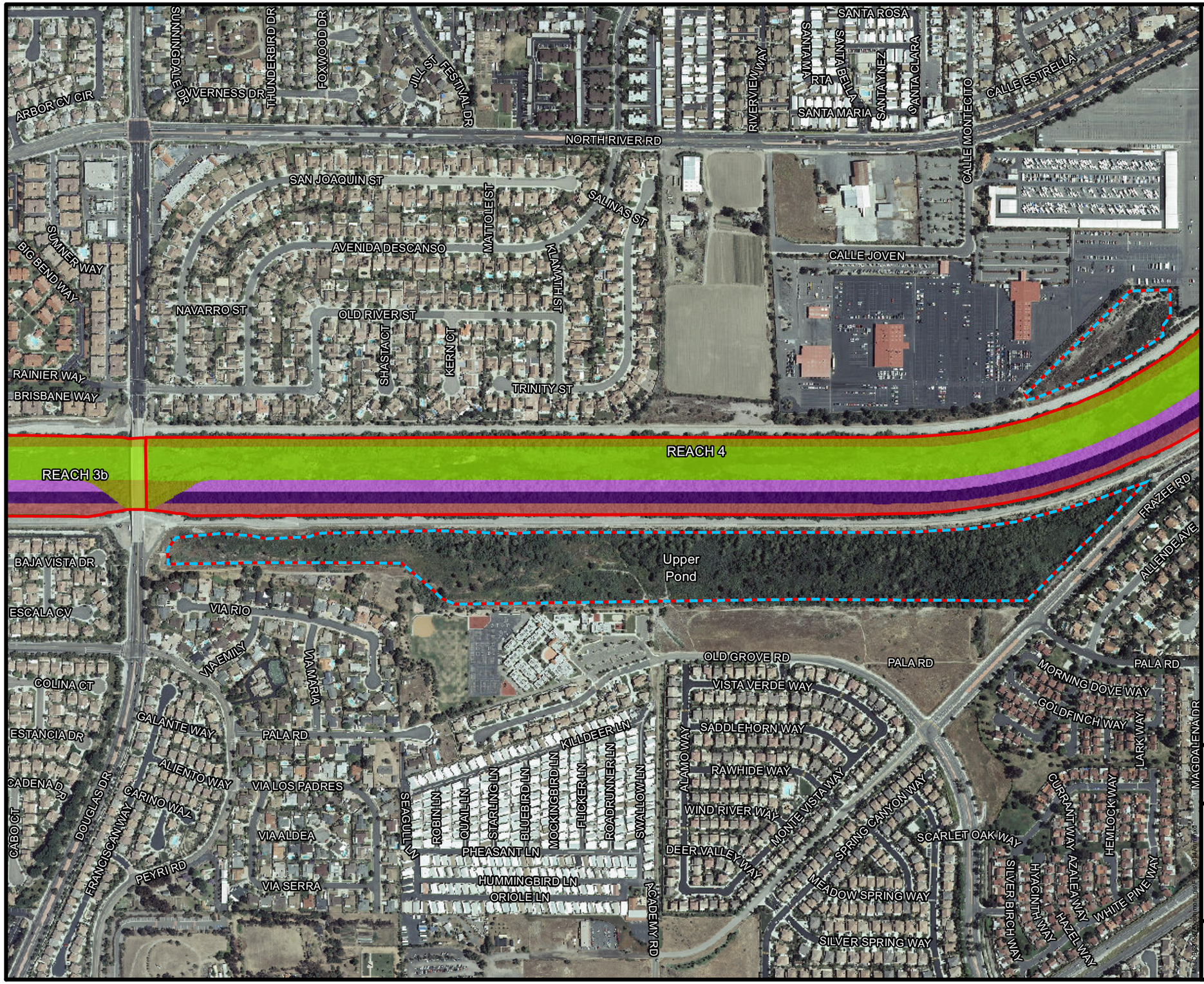
0 250 500 1,000
Feet

N

2014 ANNUAL STATUS REPORT FOR THE RESTORATION PROGRAM FOR THE SLRR FLOOD RISK MANAGEMENT PROJECT

FIGURE 3-C
PROJECT AREA ON AERIAL PHOTOGRAPH AND VEGETATION MANAGEMENT PLAN

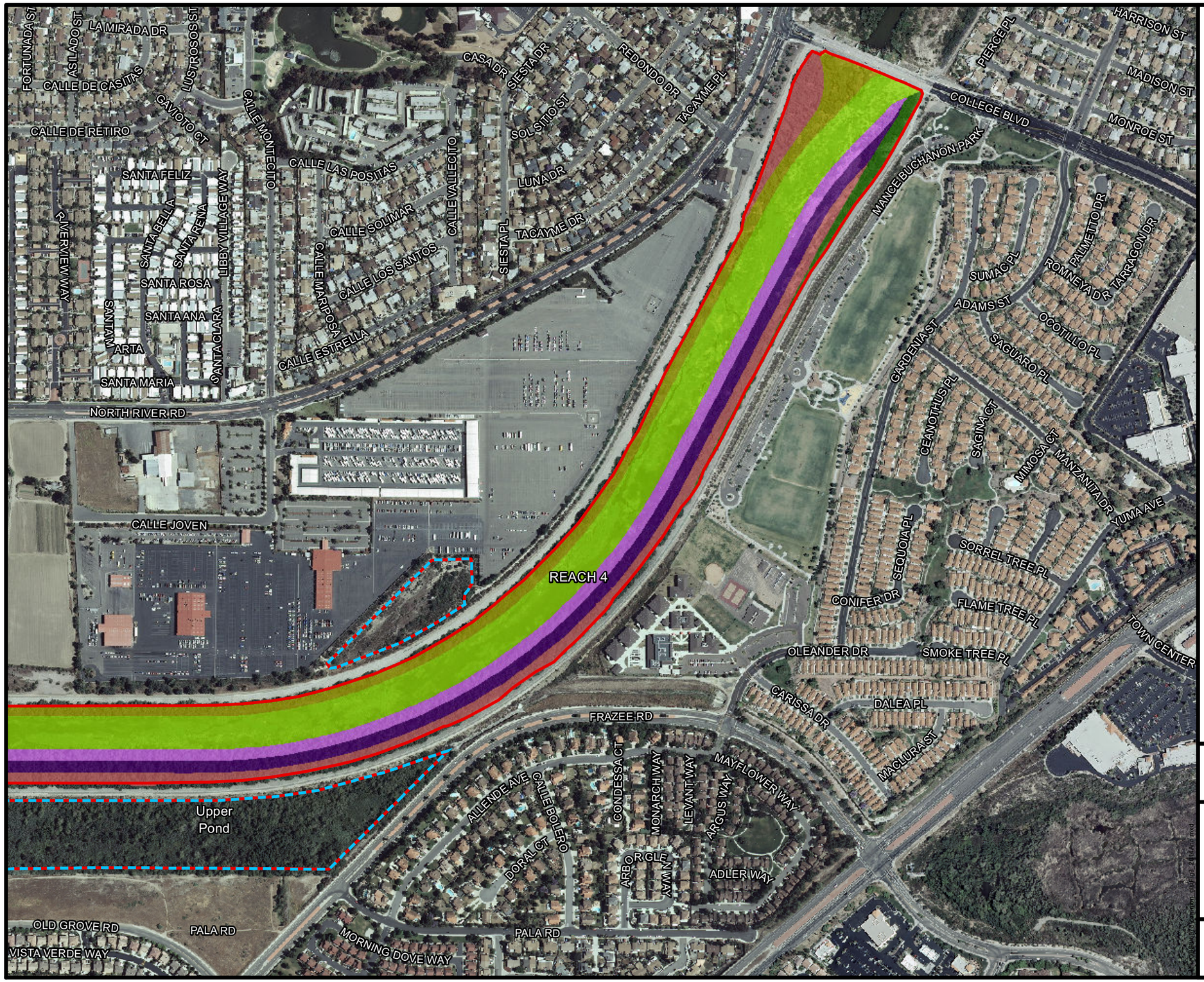
CORPS OF ENGINEERS
LOS ANGELES DISTRICT



2014 ANNUAL STATUS REPORT FOR THE RESTORATION PROGRAM FOR THE SLRR FLOOD RISK MANAGEMENT PROJECT

FIGURE 3-E
PROJECT AREA ON AERIAL PHOTOGRAPH AND VEGETATION MANAGEMENT PLAN

CORPS OF ENGINEERS
LOS ANGELES DISTRICT



Flood Risk Management Area (Project Location)

Water Detention/Mitigation Pond

Vegetation Management Plan

- Phase 1 Annual Mowing
- Phase 2 Annual Mowing
- 1st 5-Year Rotational Mowing (Rotation 1)
- 2nd 5-Year Rotational Mowing (Rotation 2)
- Compensation/Preservation Area
- Unmaintained Vegetation

Sources: RECON
Image Source: SanGIS (flown May 2012)

Coordinate System:
State Plane California VI (FIPS 406, Feet)
Datum: NAD 1983

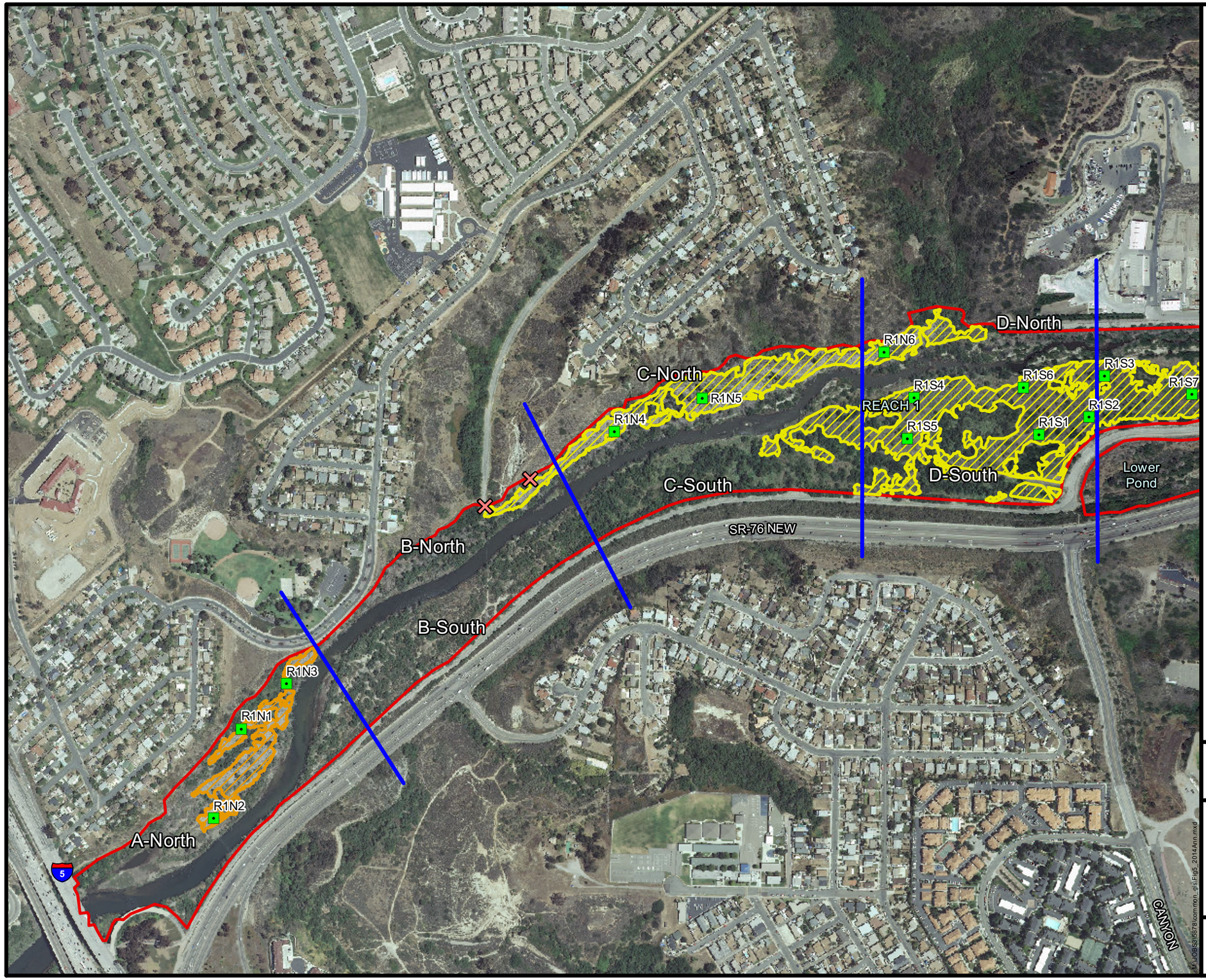
0 250 500 1,000
Feet

N

2014 ANNUAL STATUS REPORT FOR THE RESTORATION PROGRAM FOR THE SLRR FLOOD RISK MANAGEMENT PROJECT

FIGURE 3-F
PROJECT AREA ON AERIAL PHOTOGRAPH AND VEGETATION MANAGEMENT PLAN

CORPS OF ENGINEERS
LOS ANGELES DISTRICT



Flood Risk Management Area (Project Location)

Relevé and Photo Point Location

Active Restoration Areas

Container Planting

Pole Cutting and Container Planting

Reach 1 Sections

Access Road Blockage

N

Sources: RECON
Image Source: SanGIS (flown May 2012)

Coordinate System:
State Plane California VI (FIPS 406, Feet)
Datum: NAD 1983

0 250 500 1,000
Feet

2014 ANNUAL STATUS REPORT FOR THE RESTORATION PROGRAM FOR THE SLRR FLOOD RISK MANAGEMENT PROJECT

FIGURE 5-A
ACTIVE RESTORATION AREAS, RELEVÉ SAMPLING LOCATIONS, AND RELEVÉ PHOTO POINT LOCATIONS

CORPS OF ENGINEERS
LOS ANGELES DISTRICT

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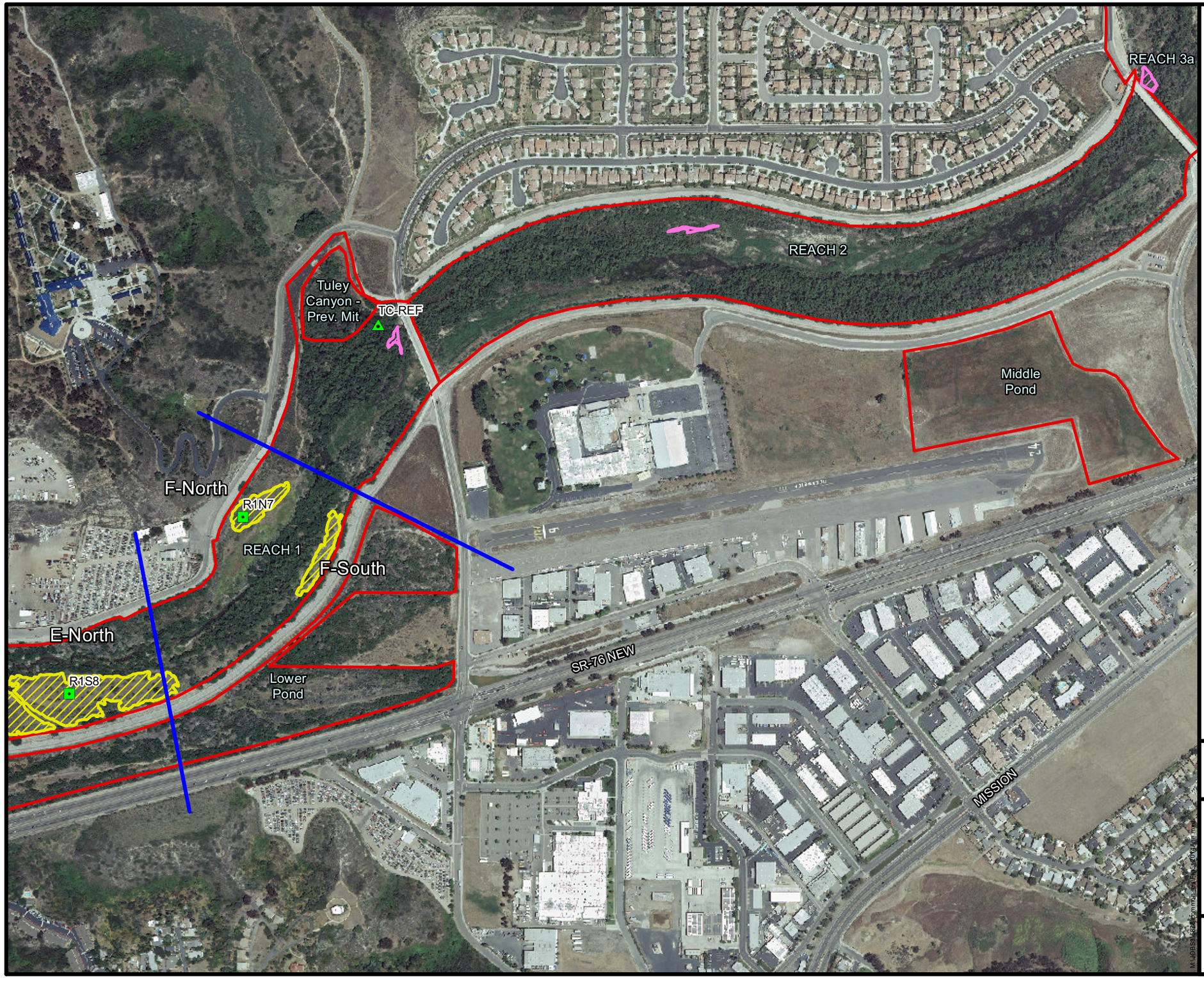


Flood Risk Management Area (Project Location)

Relevé and Photo Point Location

Reference Relevé and Photo Point Location

Active Restoration Areas

Container Planting

Pole Cutting

Reach 1 Sections

Sources: RECON
Image Source: SanGIS (flown May 2012)

Coordinate System:
State Plane California VI (FIPS 406, Feet)
Datum: NAD 1983

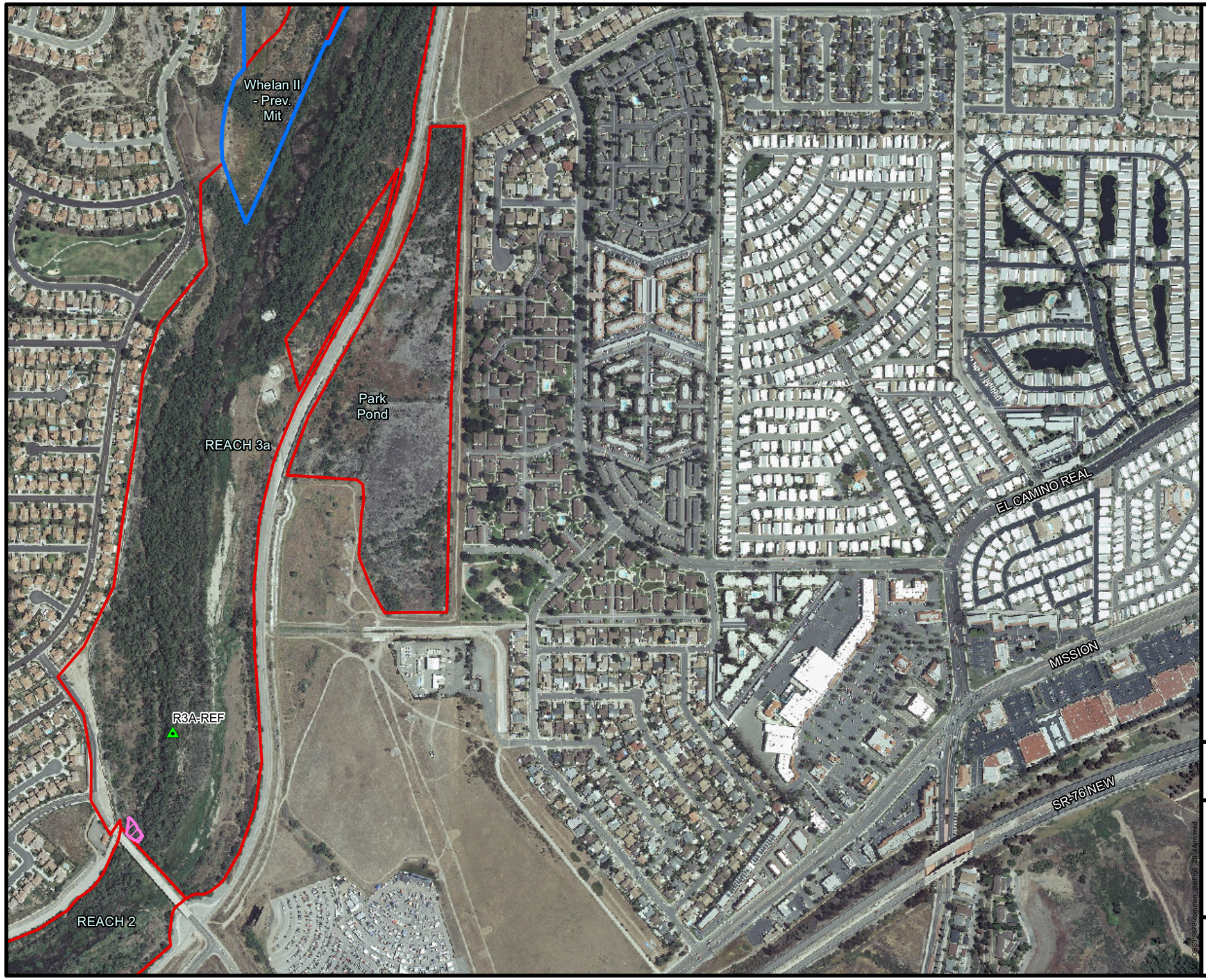
0 250 500 1,000
Feet

N

2014 ANNUAL STATUS REPORT FOR THE RESTORATION PROGRAM FOR THE SLRR FLOOD RISK MANAGEMENT PROJECT

FIGURE 5-B
ACTIVE RESTORATION AREAS, RELEVÉ SAMPLING LOCATIONS, AND RELEVÉ PHOTO POINT LOCATIONS

CORPS OF ENGINEERS
LOS ANGELES DISTRICT



Flood Risk Management Area (Project Location)

Whelan Restoration Site

Reference Relevé and Photo Point Location

Active Restoration Areas

Pole Cutting

Sources: RECON
Image Source: SanGIS (flown May 2012)

Coordinate System:
State Plane California VI (FIPS 406, Feet)
Datum: NAD 1983

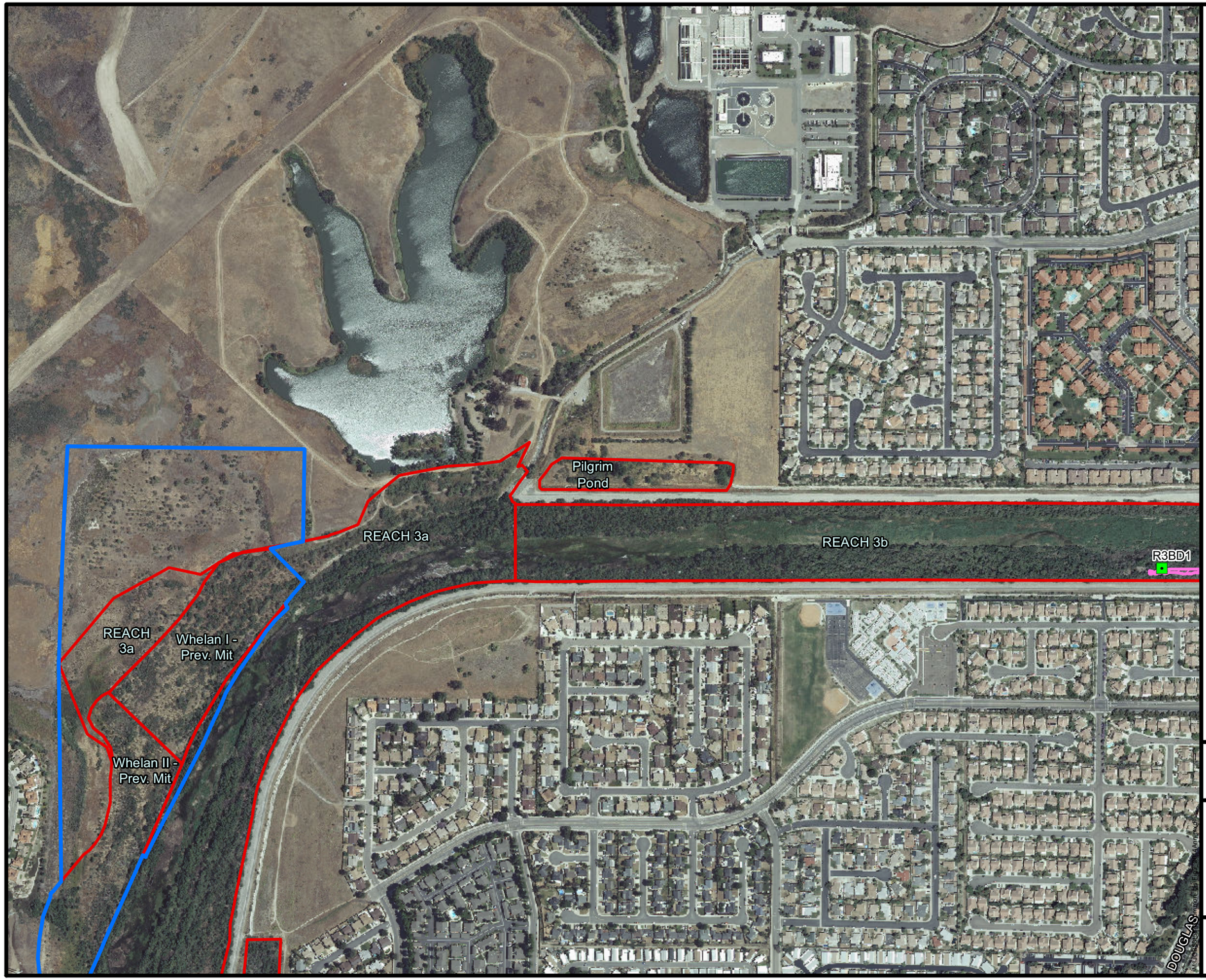
0 250 500 1,000
Feet

N

2014 ANNUAL STATUS REPORT FOR THE RESTORATION PROGRAM FOR THE SLRR FLOOD RISK MANAGEMENT PROJECT

FIGURE 5-C
ACTIVE RESTORATION AREAS, RELEVÉ SAMPLING LOCATIONS, AND RELEVÉ PHOTO POINT LOCATIONS

CORPS OF ENGINEERS
LOS ANGELES DISTRICT



Flood Risk Management Area (Project Location)

Whelan Restoration Site

Relevé and Photo Point Location

Active Restoration Areas

Pole Cutting

Sources: RECON
Image Source: SanGIS (flown May 2012)

Coordinate System:
State Plane California VI (FIPS 406, Feet)
Datum: NAD 1983

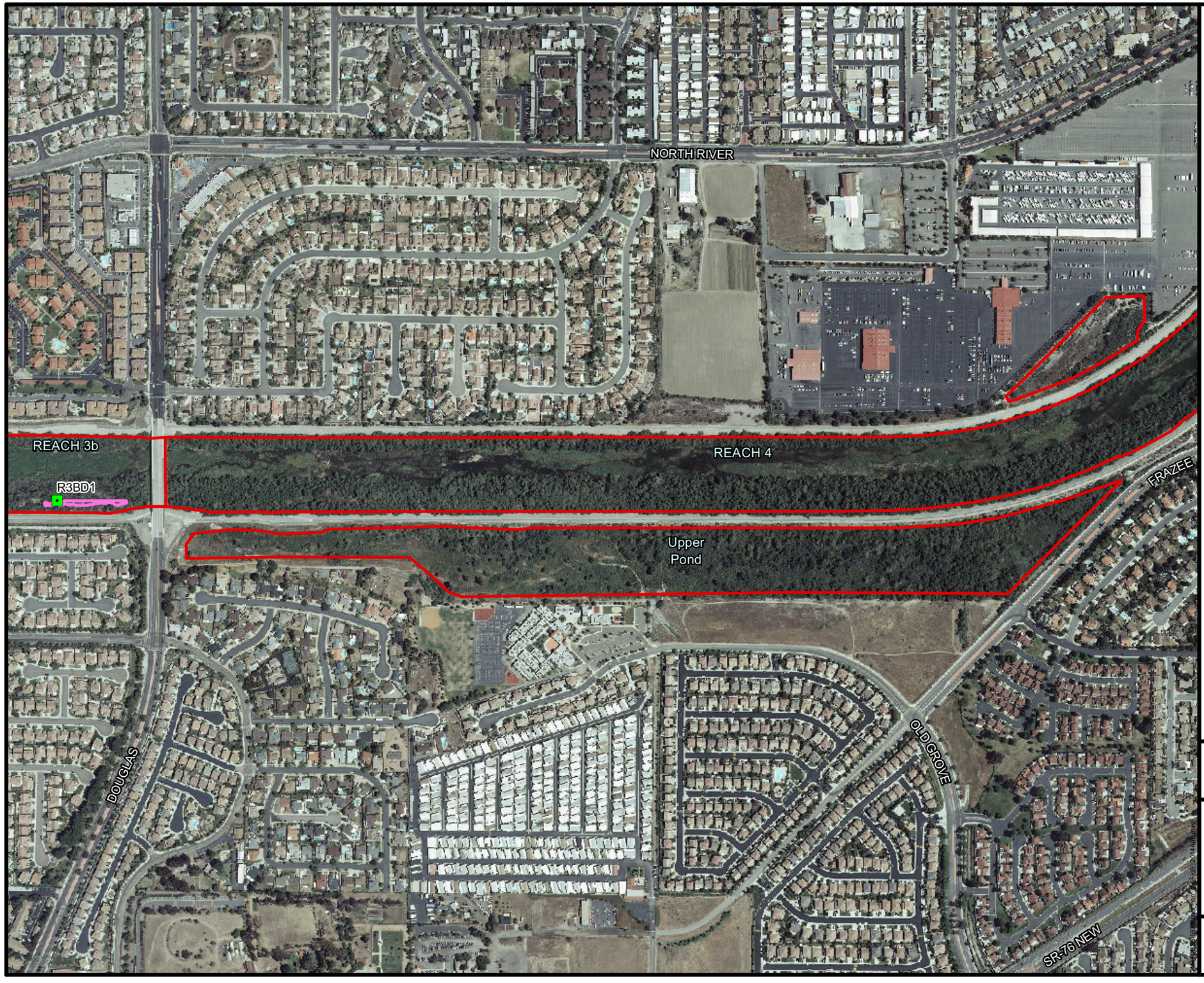
0 250 500 1,000
Feet

N

2014 ANNUAL STATUS REPORT FOR THE RESTORATION PROGRAM FOR THE SLRR FLOOD RISK MANAGEMENT PROJECT

FIGURE 5-D
ACTIVE RESTORATION AREAS, RELEVÉ SAMPLING LOCATIONS, AND RELEVÉ PHOTO POINT LOCATIONS

CORPS OF ENGINEERS
LOS ANGELES DISTRICT



Flood Risk Management Area (Project Location)

Relevé and Photo Point Location

Active Restoration Areas

Pole Cutting

Sources: RECON
Image Source: SanGIS (flown May 2012)

Coordinate System:
State Plane California VI (FIPS 406, Feet)
Datum: NAD 1983

0 250 500 1,000
Feet

N

2014 ANNUAL STATUS REPORT FOR THE RESTORATION PROGRAM FOR THE SLRR FLOOD RISK MANAGEMENT PROJECT

FIGURE 5-E
ACTIVE RESTORATION AREAS, RELEVÉ SAMPLING LOCATIONS, AND RELEVÉ PHOTO POINT LOCATIONS

CORPS OF ENGINEERS
LOS ANGELES DISTRICT

Flood Risk Management Area (Project Location)

Relevé and Photo Point Location

Reference Relevé and Photo Point Location

Active Restoration Areas

Container Planting

Sources: RECON
Image Source: SanGIS (flown May 2012)

Coordinate System:
State Plane California VI (FIPS 406, Feet)
Datum: NAD 1983

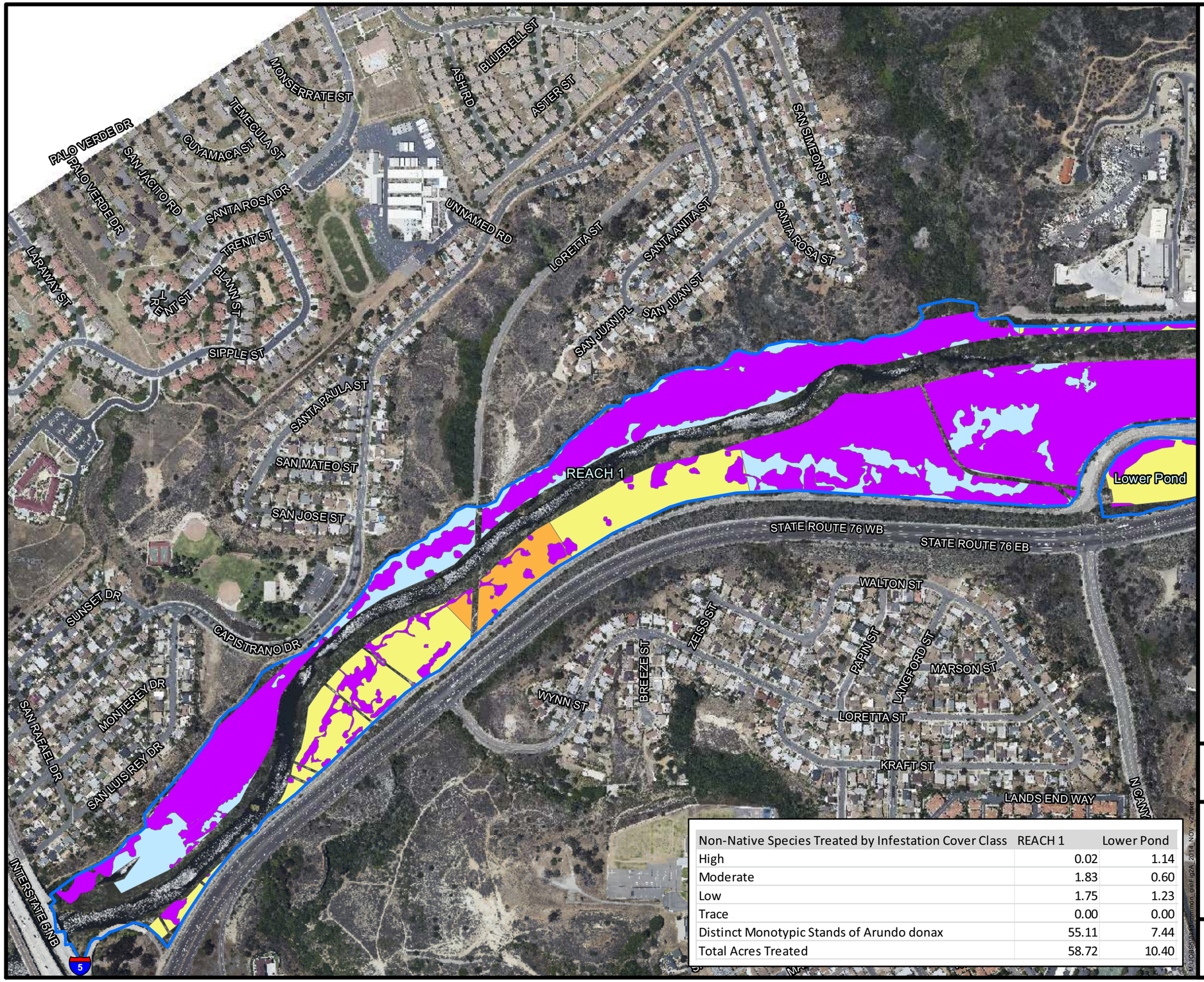
0 250 500 1,000
Feet

N

2014 ANNUAL STATUS REPORT FOR THE RESTORATION PROGRAM FOR THE SLRR FLOOD RISK MANAGEMENT PROJECT

FIGURE 5-F
ACTIVE RESTORATION AREAS, RELEVÉ SAMPLING LOCATIONS, AND RELEVÉ PHOTO POINT LOCATIONS

CORPS OF ENGINEERS
LOS ANGELES DISTRICT



Project Boundary

Cover Class of Non-Native Species Treated (2013-2014)

- Moderate
- Low
- Trace

Distinct Monotypic Stands of Arundo donax and Non-Native Exotics Treated (2007-2014)

Non-Native Species Treated by Infestation Cover Class	REACH 1	Lower Pond
High	0.02	1.14
Moderate	1.83	0.60
Low	1.75	1.23
Trace	0.00	0.00
Distinct Monotypic Stands of Arundo donax	55.11	7.44
Total Acres Treated	58.72	10.40

Sources: RECON
Image Source: Lenska, Inc (flown June 2016)

Coordinate System:
State Plane California VI (FIPS 406, Feet)
Datum: NAD 1983

0 250 500 1,000
Feet

N

SAN LUIS REY RIVER FLOOD RISK MANAGEMENT PROJECT

FIGURE 2-A
PASSIVE AND ACTIVE RESTORATION ACTIVITIES: 2007-2014

CORPS OF ENGINEERS
LOS ANGELES DISTRICT

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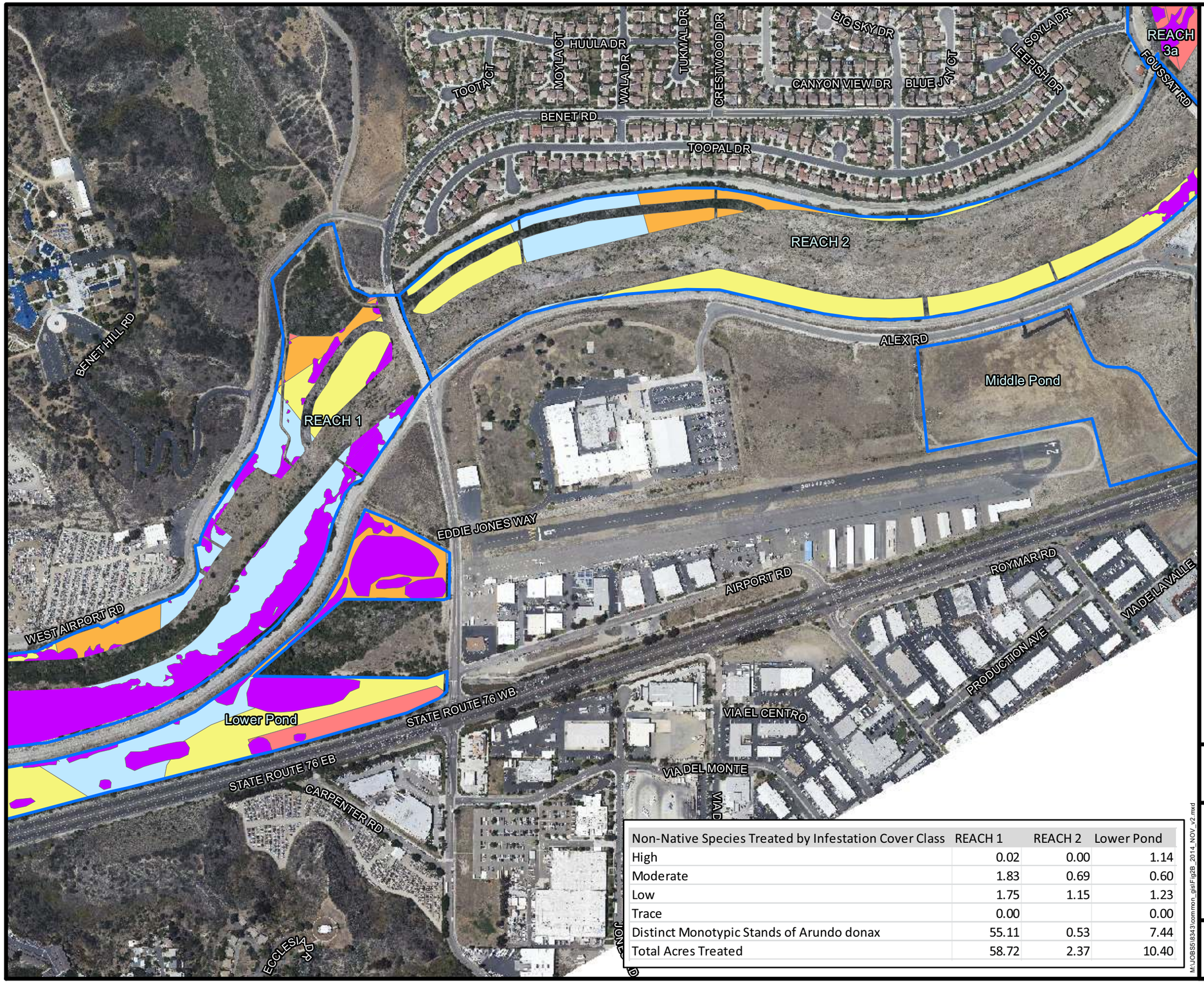

Project Boundary

Cover Class of Non-Native Species Treated (2013-2014)

- High
- Moderate
- Low
- Trace

Distinct Monotypic Stands of Arundo donax and Non-Native Exotics Treated (2007-2014)

Non-Native Species Treated by Infestation Cover Class	REACH 1	REACH 2	Lower Pond
High	0.02	0.00	1.14
Moderate	1.83	0.69	0.60
Low	1.75	1.15	1.23
Trace	0.00		0.00
Distinct Monotypic Stands of Arundo donax	55.11	0.53	7.44
Total Acres Treated	58.72	2.37	10.40

Sources: RECON
Image Source: Lenska, Inc (flown June 2016)

Coordinate System:
State Plane California VI (FIPS 406, Feet)
Datum: NAD 1983

0 250 500 1,000
Feet

N

SAN LUIS REY RIVER FLOOD
RISK MANAGEMENT PROJECT

FIGURE 2-B
PASSIVE AND ACTIVE RESTORATION ACTIVITIES: 2007-2014

CORPS OF ENGINEERS
LOS ANGELES DISTRICT

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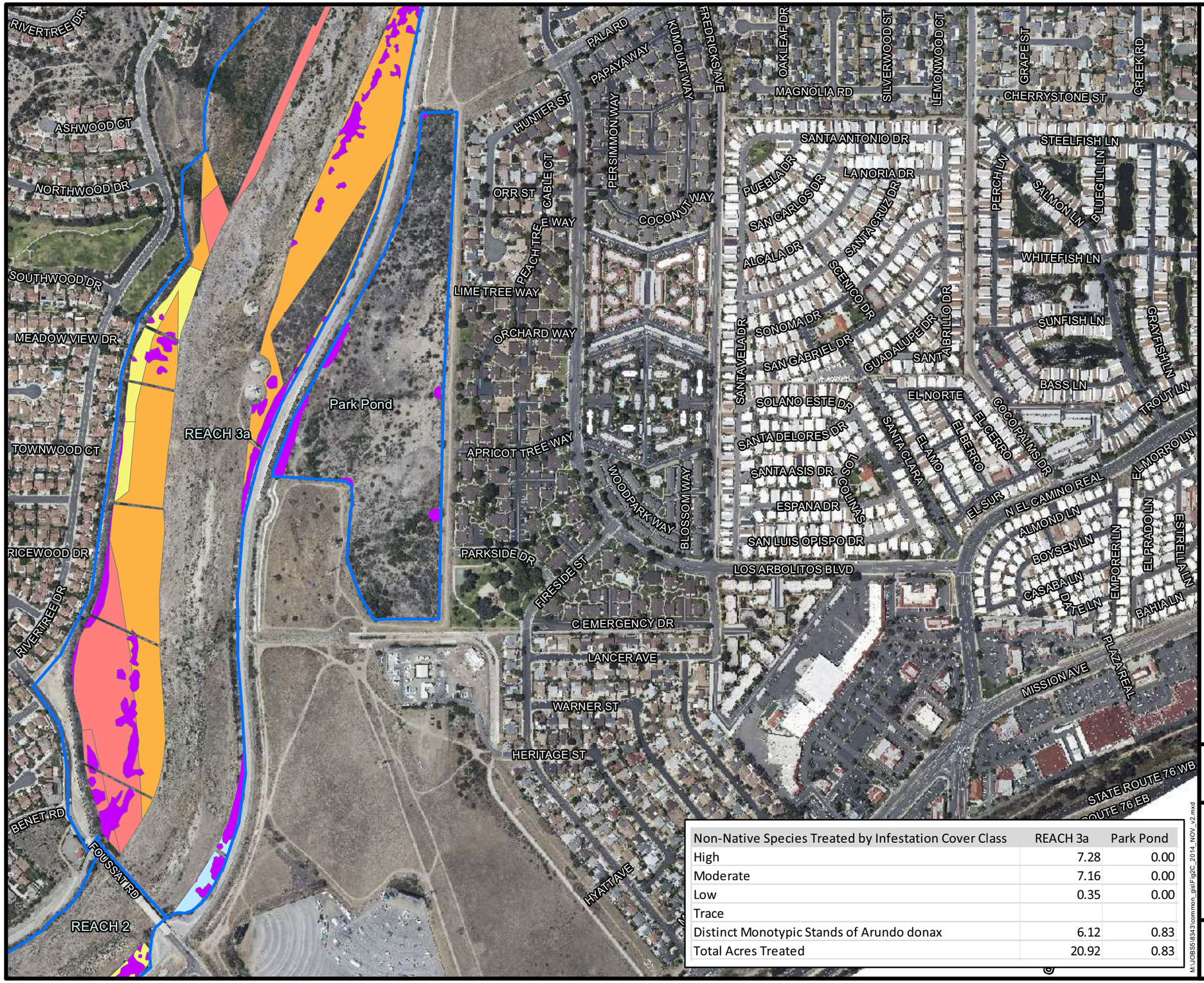
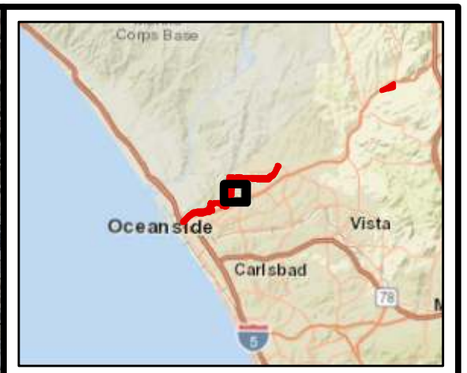


Non-Native Species Treated by Infestation Cover Class	REACH 3a	Park Pond
High	7.28	0.00
Moderate	7.16	0.00
Low	0.35	0.00
Trace		
Distinct Monotypic Stands of Arundo donax	6.12	0.83
Total Acres Treated	20.92	0.83



Project Boundary

Cover Class of Non-Native Species Treated (2013-2014)

- High
- Moderate
- Low
- Trace

Distinct Monotypic Stands of Arundo donax and Non-Native Exotics Treated (2007-2014)

Sources: RECON
Image Source: Lenska, Inc (flown June 2016)

Coordinate System:
State Plane California VI (FIPS 406, Feet)
Datum: NAD 1983

0 250 500 1,000
Feet

N

SAN LUIS REY RIVER FLOOD RISK MANAGEMENT PROJECT

FIGURE 2-C
PASSIVE AND ACTIVE RESTORATION ACTIVITIES: 2007-2014

CORPS OF ENGINEERS
LOS ANGELES DISTRICT

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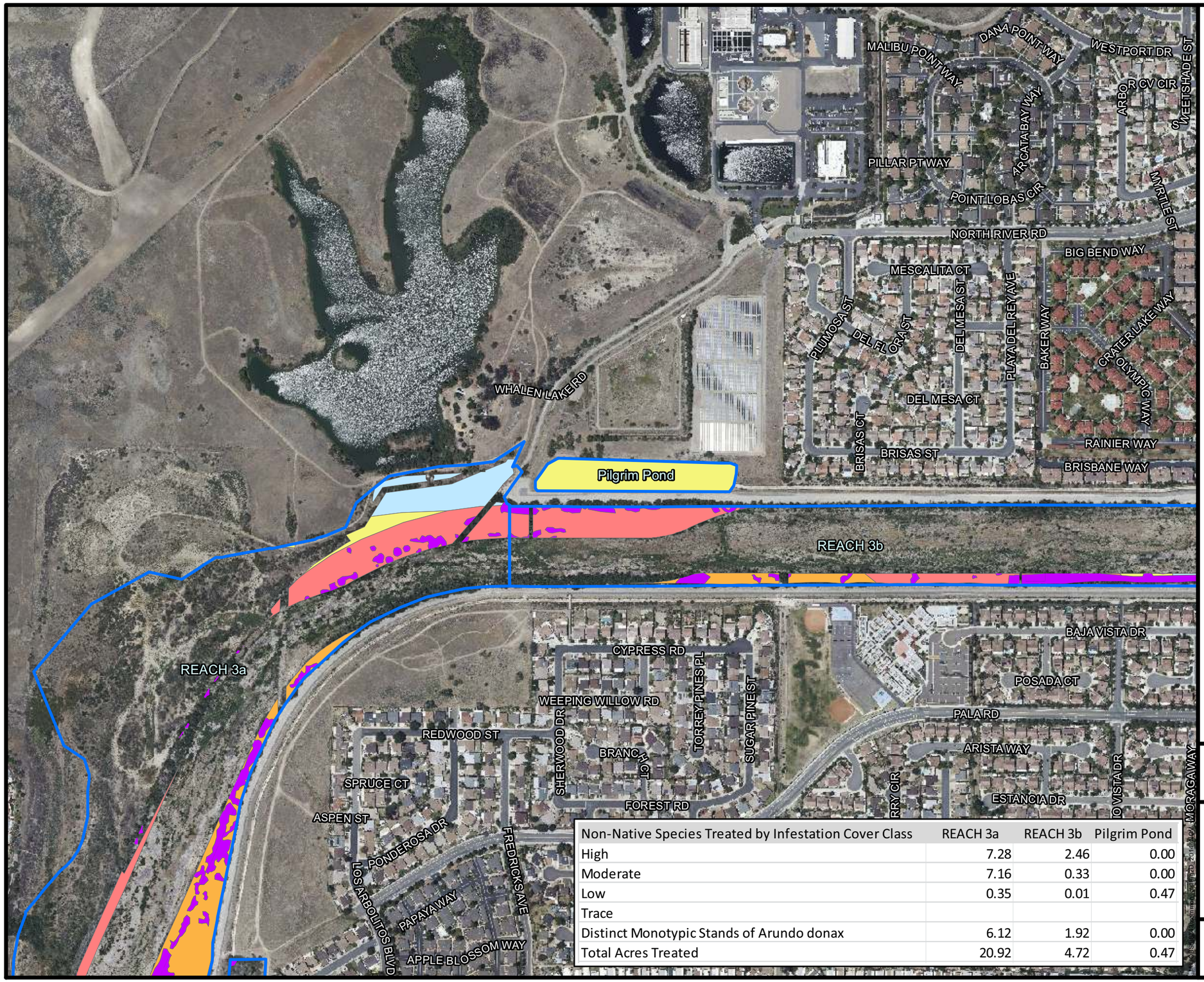


Non-Native Species Treated by Infestation Cover Class	REACH 3a	REACH 3b	Pilgrim Pond
High	7.28	2.46	0.00
Moderate	7.16	0.33	0.00
Low	0.35	0.01	0.47
Trace			
Distinct Monotypic Stands of Arundo donax	6.12	1.92	0.00
Total Acres Treated	20.92	4.72	0.47

Project Boundary

Cover Class of Non-Native Species Treated (2013-2014)

- High
- Moderate
- Low
- Trace

Distinct Monotypic Stands of Arundo donax and Non-Native Exotics Treated (2007-2014)

Sources: RECON
Image Source: Lenska, Inc (flown June 2016)

Coordinate System:
State Plane California VI (FIPS 406, Feet)
Datum: NAD 1983

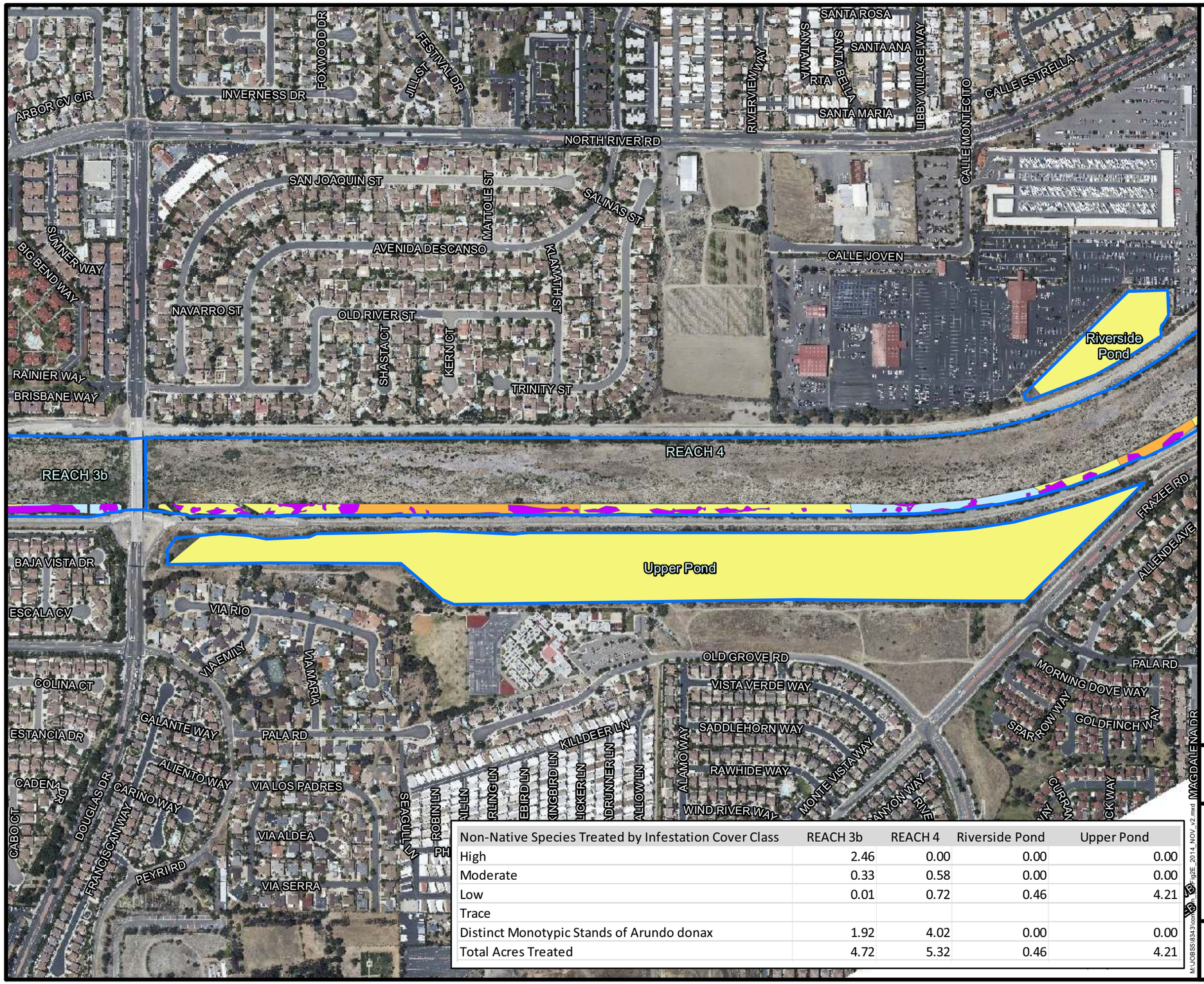
0 250 500 1,000
Feet

N

SAN LUIS REY RIVER FLOOD RISK MANAGEMENT PROJECT

FIGURE 2-D PASSIVE AND ACTIVE RESTORATION ACTIVITIES: 2007-2014

CORPS OF ENGINEERS
LOS ANGELES DISTRICT



Project Boundary

Cover Class of Non-Native Species Treated (2013-2014)

- Moderate
- Low
- Trace

Distinct Monotypic Stands of Arundo donax and Non-Native Exotics Treated (2007-2014)

Non-Native Species Treated by Infestation Cover Class	REACH 3b	REACH 4	Riverside Pond	Upper Pond
High	2.46	0.00	0.00	0.00
Moderate	0.33	0.58	0.00	0.00
Low	0.01	0.72	0.46	4.21
Trace				
Distinct Monotypic Stands of Arundo donax	1.92	4.02	0.00	0.00
Total Acres Treated	4.72	5.32	0.46	4.21

N

Sources: RECON
Image Source: Lenska, Inc (flown June 2016)

Coordinate System:
State Plane California VI (FIPS 406, Feet)
Datum: NAD 1983

0 250 500 1,000
Feet

SAN LUIS REY RIVER FLOOD RISK MANAGEMENT PROJECT

FIGURE 2-E
PASSIVE AND ACTIVE RESTORATION ACTIVITIES: 2007-2014

CORPS OF ENGINEERS
LOS ANGELES DISTRICT

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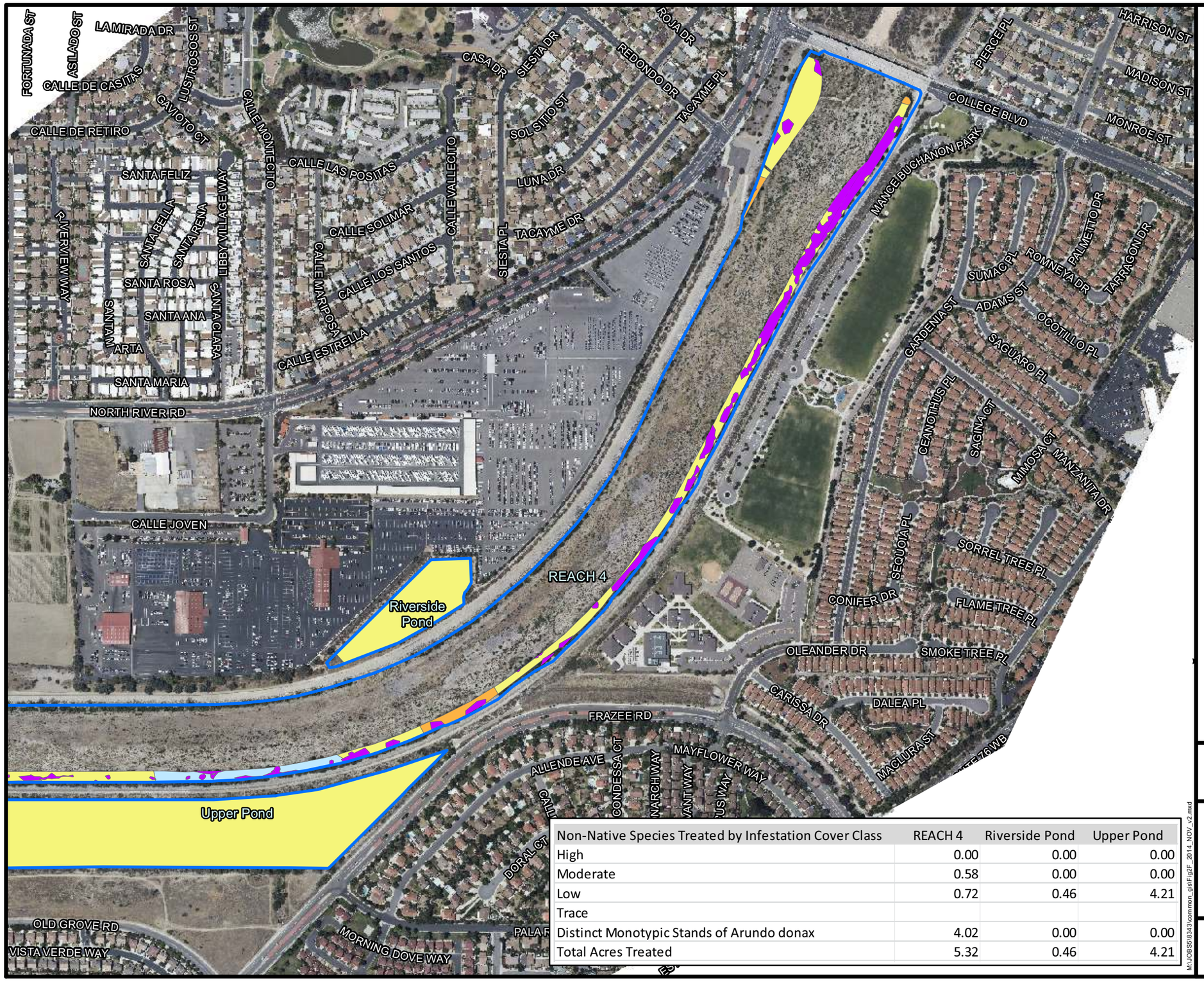

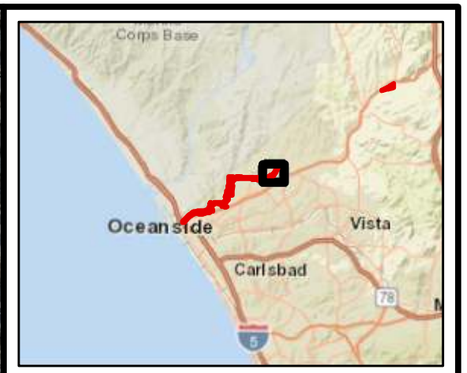

Project Boundary

Cover Class of Non-Native Species Treated (2013-2014)

- Moderate
- Low
- Trace

Distinct Monotypic Stands of Arundo donax and Non-Native Exotics Treated (2007-2014)

Non-Native Species Treated by Infestation Cover Class	REACH 4	Riverside Pond	Upper Pond
High	0.00	0.00	0.00
Moderate	0.58	0.00	0.00
Low	0.72	0.46	4.21
Trace			
Distinct Monotypic Stands of Arundo donax	4.02	0.00	0.00
Total Acres Treated	5.32	0.46	4.21

N

Sources: RECON
Image Source: Lenska, Inc (flown June 2016)

Coordinate System:
State Plane California VI (FIPS 406, Feet)
Datum: NAD 1983

0 250 500 1,000
Feet

SAN LUIS REY RIVER FLOOD RISK MANAGEMENT PROJECT

FIGURE 2-F
PASSIVE AND ACTIVE RESTORATION ACTIVITIES: 2007-2014

CORPS OF ENGINEERS
LOS ANGELES DISTRICT

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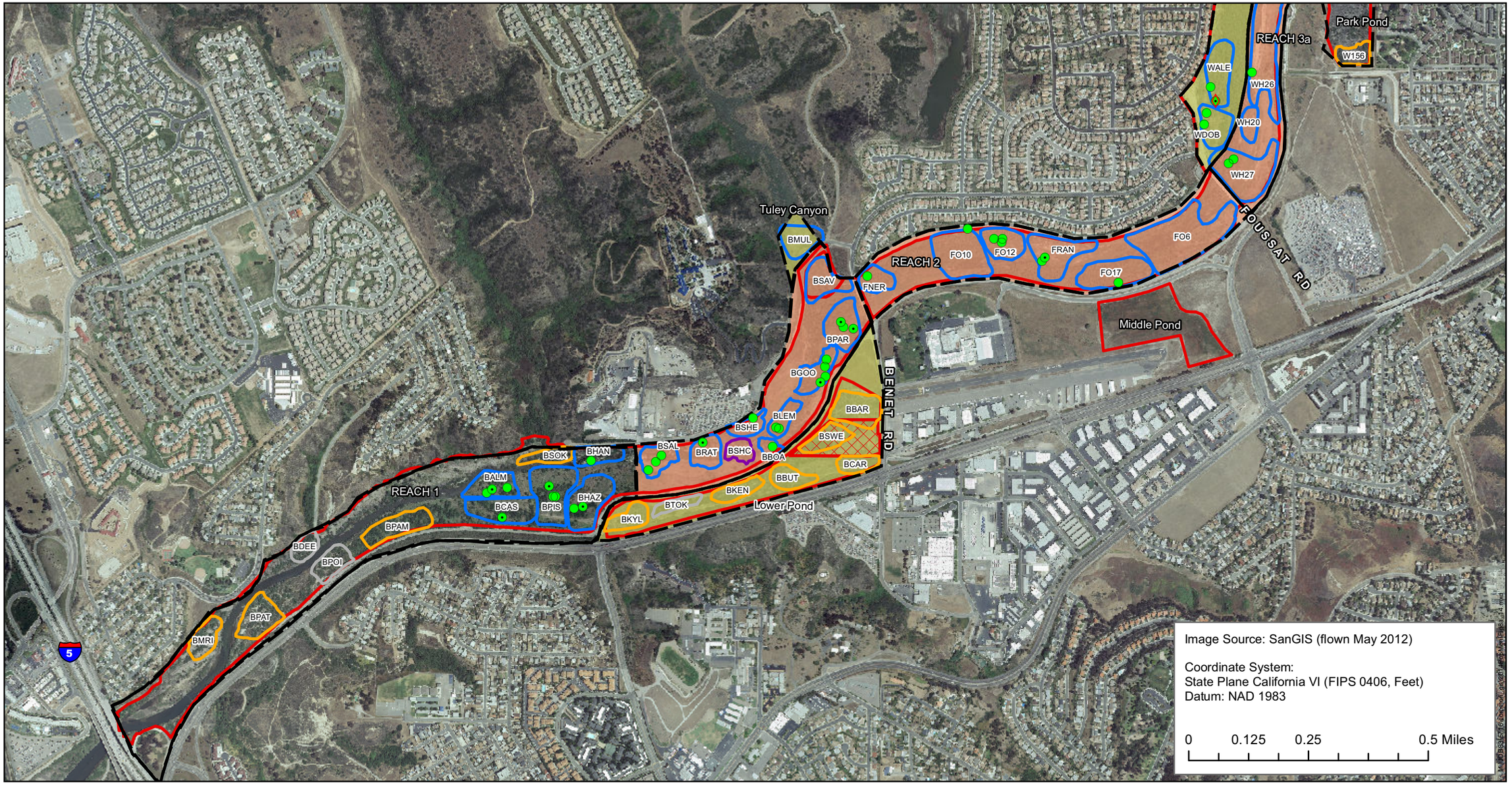


River Channel, Water Detention Ponds, Water Detention/Mitigation Ponds, and Previous Mitigation Areas

Not a Part

Population Monitoring Survey Sites

Nest Monitoring Sites

Treated Monitoring Site

Untreated Monitoring Site

Sucessful Nest

Unsucessful Nest

Parasitized Nest

LBVI Territories

LBVI Pair, Fully Monitored

LBVI Pair, Not Monitored

LBVI Single Male

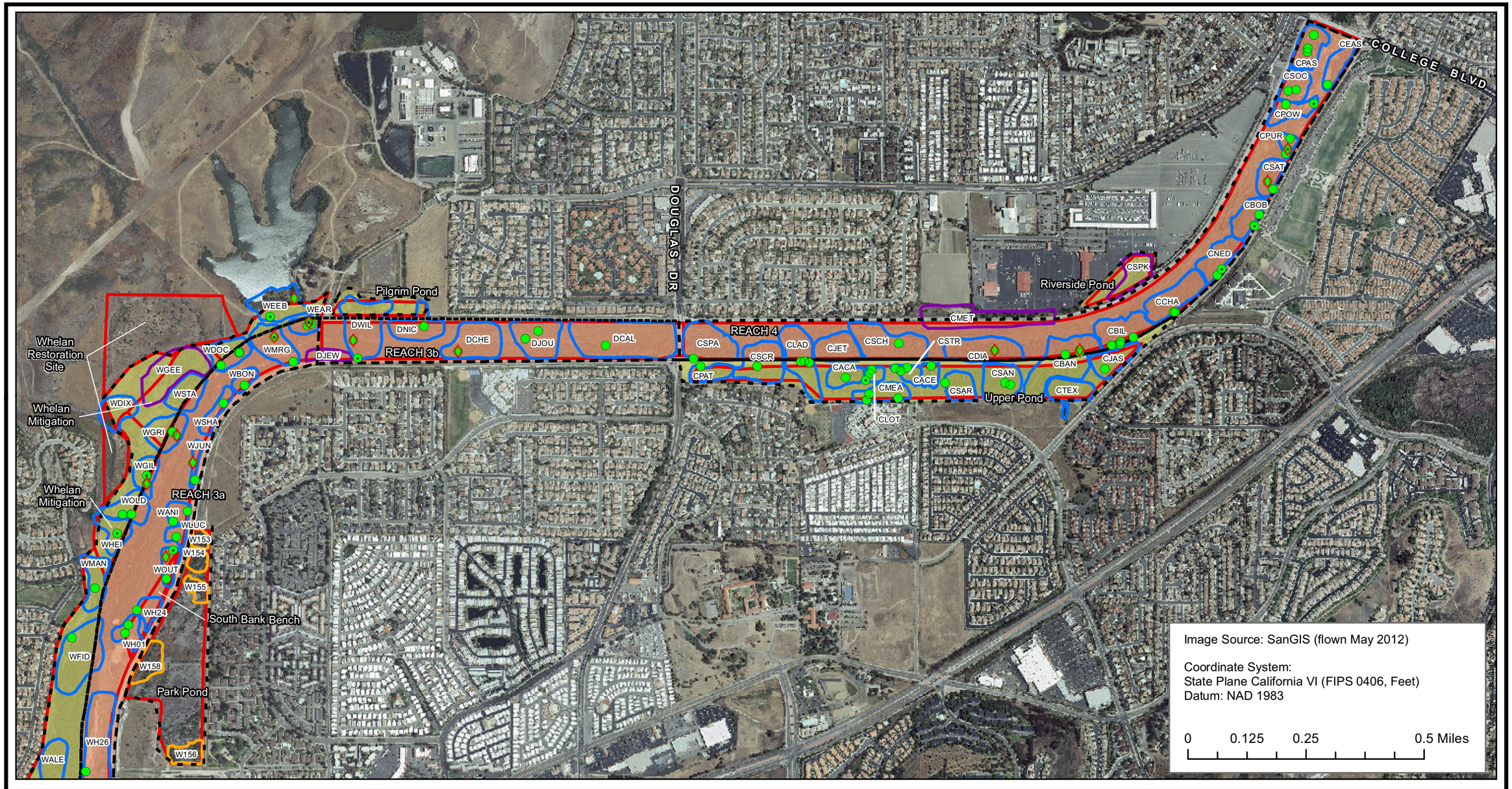
LBVI Undetermined Status

N

2014 Annual Population Monitoring Report for the San Luis Rey River Flood Risk Management Project

FIGURE 8A
LEAST BELL'S VIREO SURVEY RESULTS IN THE PROJECT AREA, 2014

CORPS OF ENGINEERS
LOS ANGELES DISTRICT



River Channel, Water Detention Ponds, Water Detention/Mitigation Ponds, and Previous Mitigation Areas

Population Monitoring Survey Sites

Nest Monitoring Sites

Channel Monitoring Sites

Off-channel Monitoring Sites

Sucessful Nest

Unsucessful Nest

Parasitized Nest

LBVI Territories

LBVI Pair, Fully Monitored

LBVI Pair, Not Monitored

LBVI Single Male

LBVI Undetermined Status

N

2014 Annual Population Monitoring Report for the San Luis Rey River Flood Risk Management Project

FIGURE 8B
LEAST BELL'S VIREO SURVEY RESULTS IN THE PROJECT AREA, 2014

CORPS OF ENGINEERS
LOS ANGELES DISTRICT

ATTACHMENT 6

CORRESPONDENCE

1. U.S. Army Corps of Engineers, Letter to National Marine Fisheries Service dated February 5, 2008.

DEPARTMENT OF THE ARMY
LOS ANGELES DISTRICT CORPS OF ENGINEERS
P.O. BOX 532711
LOS ANGELES, CALIFORNIA 90053-2325

February 5, 2008

REPLY TO
ATTENTION OF

Office of the Chief
Planning Division

Porter

2008 FEB 14 A 10:0

Mr. Rodney McInnis
Regional Administrator
Southwest Regional Office
National Marine Fisheries Service
501 West Ocean Boulevard, Suite 4200
Long Beach, California 90802-4213

Dear Mr. McInnis:

The U.S. Army, Corps of Engineers (Corps), Los Angeles District, sought concurrence from NOAA's National Marine Fisheries Service (NMFS) in a letter dated September 21, 2004 for our determination that 1) the construction and operation and maintenance (O&M) of the San Luis Rey River Flood Control Project (Project) San Diego County, California (Figure 1) would have "no effect" on the Distinct Population Segment (DPS) of the southern California steelhead (*Oncorhyncus mykiss*), a Federally-listed endangered species, and 2) formal consultation with NMFS, in accordance with Section 7 of the Endangered Species Act (ESA) of 1973, as amended, was not required for the above project. The Corps' intent was to satisfy requirements of the ESA for Section 7 consultation through the informal consultation process, as provided in 50 CFR 402.13. NMFS concurred with the Corps "no effect" determination concerning the O&M Project recommended alternative (Alternative 10) in a letter dated August 31, 2005.

NMFS has indicated that, since the August 31, 2005 letter concurring with the Corps' "no affect" determination, several occurrences have caused a change in the determination. In 2006, NMFS Steelhead Technical Recovery Team (TRT) released a technical memorandum (NOAA-TM-NMFS-SWFSC-394) which included the San Luis Rey River (SLRR) in the Santa Catalina Gulf Coast group of streams which NMFS selected for steelhead recovery planning. In the same document, NMFS' TRT catalogued potential rearing habitat within the SLRR watershed and its tributaries that was valuable for steelhead in this portion of the recovery planning area. On May 2, 2007, California Department of Fish and Game field biologists observed an adult steelhead approximately 20 inches long in a pool surrounded by riparian cover within the upper reaches of the project area (Reach 4) downstream of College Avenue. On May 8, 2007, a U.S. Geological Survey field technician performing bird surveys observed two steelhead within the same vicinity as the first sighting. These second sightings were discussed by CDFG biologists and the USGS technician in the field, and it was verified that the second

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R. J. Stewart Time: 0900

2/20/2008

steelhead sightings by the USGS field technician occurred in approximately the same location as the first steelhead sighting.

To address the recent changes in the status of the SLRR per NMFS Technical Memo 394, and the finding of steelhead in the project area, the Corps met informally with the NMFS between May 2007 and January 2008 at their NMFS' Long Beach offices, CDFG offices, and in the field at the SLRR. During these meetings, the Corps, NMFS, and CDFG have had detailed discussions regarding the project and the effects of the project on steelhead and steelhead habitat. During these discussions, the NMFS, CDFG, and Corps have cooperatively developed impact avoidance and minimization measures for steelhead and steelhead habitat to be implemented during all phases of the project. Based on these discussions, the Corps has agreed to incorporate the avoidance and minimization measures as part of the proposed action to avoid adverse effects to steelhead and steelhead habitat within the Project area. Given the new avoidance and impact minimization measures agreed to by the Corps and NMFS, the Corps has determined that the Proposed Action "may effect, but is not likely to adversely affect" steelhead or steelhead habitat. Therefore, pursuant to Section 7 of the Endangered Species Act, as amended, the Los Angeles District of the Corps hereby requests NMFS concurrence with our "not likely to adversely affect" determination for the proposed action for vegetation and sediment management in the San Luis Rey River Flood Control Project. Pursuant to 50 CFR 402.13, the Corps is providing, enclosing, or otherwise identifying the following information for NMFS as required for initiation of Section 7 consultation.

1. **Description of the action considered:** The project consists of vegetation treatment within the lower 7.2 miles of the San Luis Rey River Flood Control Channel to maintain a flood conveyance of 71,200 cubic feet per second (cfs). The Project will be accomplished in three phases, and subsequent operations and maintenance, as described in enclosed Biological Assessment and the Post Authorization Decision Document and Final EIS/EIR (Corps 2007) included here by reference. The proposed action will manage vegetation and sediment between September 15 and March 15 of each year such that the channel may pass a 71,200 cfs flow conveyance. Initial work in the action area will be accomplished in three phases over approximately eight years to minimize impacts to sensitive habitats and the endangered least Bell's vireo, southwestern willow flycatcher, and their critical habitats. If necessary, the Project may include sediment removal from portions of the channel for the purpose of flow conveyance. This will be based upon recent hydrologic analysis of the project area. Please refer to the enclosed biological assessment for detailed information on the specific areas and methods for vegetation clearing from the annually maintained areas, rotational areas, the un-maintained areas, and other areas of significance within the project site.

2. Description of the specific areas that may be affected by the action: The proposed action is approximately 7.2 miles long and includes the SLRR between the College Avenue Bridge and the ocean. Details where vegetation or sediment management may occur are included in the enclosed biological assessment and figures and the Post Authorization Decision Document and Final SEIS/EIR (Corps 2007). The vegetation management includes Annually Maintained Areas where the vegetation will be mowed annually, Rotational Areas where the vegetation will be mowed every ten years, and Un-maintained Areas (within the original flow conveyance zone) and Conservation/Preservation Areas (outside the flow conveyance zone but within the project area) that will not be subject to vegetation or sediment management, but will be managed in perpetuity to provide habitat for the least Bell's vireo, southwestern willow flycatcher, and other endangered and sensitive species. Please refer to the enclosed biological assessment for detailed information on the specific areas and methods for vegetation clearing from the Annually Maintained areas, Rotational areas, the Un-maintained areas, and other areas of significance within the project site.

3. Description of any listed species or critical habitat that may be affected by the action: The proposed project may affect, but is not likely to adversely affect, the endangered Southern California DPS of steelhead. The proposed Project action area is not designated critical habitat for steelhead at this time. Southern steelhead adults or juveniles have a low to moderate probability of being found in the Project area based on the time of year when the project implementation is planned to occur (i.e., fall and winter) (Boughton et. al. 2006), and other recent steelhead sightings in San Diego and Orange County coastal streams.

The project has impacts to the endangered least Bell's vireo, the endangered southwestern willow flycatcher, and their critical habitat, among others, as discussed in the PADD/SEIS/EIR/PAC (Corps 2007). As a consequence of the Section 7 consultation that was completed on February 14, 2006 with receipt of an amended Final Biological Opinion and a clarification letter dated May 23, 2006, the Corps identified numerous measures to be incorporated into a revised plan for phased vegetation management and periodic and localized sediment removal to minimize or avoid impacts to the habitat of the vireo and flycatcher. The Proposed Action reduces target flow conveyance in the channel to 71,200 cfs and retains additional vireo and flycatcher habitat in the channel over the previously approved plan.

4. Description of the manner in which the action may affect any listed species or critical habitat and an analysis of any cumulative impacts: Immigration of anadromous adult steelhead may occur, following significant rainfall events, beginning in January and continuing into May within the Southern California Steelhead DPS. Emigration of juvenile steelhead smolts may occur at any time, but is most likely during March through June. It is possible that both steelhead adults and juveniles could become

trapped within the action area and be forced to rear within pools or other perennial areas within the project site until connectivity is restored by increased flows. Since the project involves the maintenance of riparian vegetation as it is related to flood conveyance within the SLRR Flood Control Project channel, riparian vegetation, which provides cover, shade, and in-stream habitat for steelhead along portions of the project is the primary constituent element of steelhead habitat that will be most affected by the project.

Direct effects to steelhead

The treatment of the vegetation is in two parts: invasive exotic plant eradication and O&M mowing. Vegetation treatment through mowing, chipping and shredding will not have a direct impact on steelhead individuals with the implementation of the avoidance and minimization measures discussed below. The most crucial time period that would directly affect steelhead will be during the May through August period when the ambient water temperature could exceed the upper limits of steelhead survivability. This is also the same time period which the San Luis Rey River may not have connective flow conveyance to the ocean or to upstream areas. Minimization measures are included in the project description (PADD/SEIS/EIR/PAC; Corps 2007) to minimize the effect of invasive exotic eradication. They include such measures as keeping foliar spray from entering the water, mowing machinery that will not work in the primary thalweg and or areas immediately adjacent to the thalweg. Therefore, the process for eradication of invasive exotic plants (*Arundo*) is not expected to directly affect steelhead or their in-stream habitat.

Direct effects to steelhead habitat may also include the mowing of riparian vegetation throughout the annually mowed and rotationally mowed (every 10-year) areas of the project. The direct result is a potential reduction in mature riparian canopy cover and a potential reduction in shade throughout the project reach. As discussed in the project description, the annually maintained areas are mowed annually, and the rotational areas are mowed once every ten years. Impacts to riparian vegetation in the annually maintained areas will occur yearly but will be temporary as the riparian vegetation is expected to re-grow from the root mass for the remainder of the year. Potential impacts to riparian vegetation in the rotational areas are less frequent and temporary, as the riparian vegetation is expected to re-grow from the root mass for up to ten years. The extent of this impact will depend on the natural position of the thalweg within the channel and its extent in the annually maintained, rotational, or un-maintained areas of the channel. Depending on the natural thalweg position, shade from vegetation will be present within the un-maintained vegetation areas, and the rotational vegetation parcels in most years, as well as in the annually maintained area as a consequence of the bendable vegetation in the buffer, which may grow up to 15-ft in one season. In some reaches, shade in the form of mature trees may be not present naturally due to the geomorphology of the locale, but native wetland or riparian buffer edge composed of dense stands of

young/sapling cottonwood/ willow shrubs 10-15 feet in height or with mature tall freshwater marsh vegetation may be present.

A 10-ft buffer of bendable native and riparian and wetland vegetation not greater than 0.5 inches diameter at breast height will be left on both sides of the thalweg to avoid or reduce direct effects of the mowing on steelhead. Though this buffer may be mowed to remove larger vegetation, the machinery will not work close to the edge of the thalweg, and hand crews will remove vegetation in areas where machinery is unable to maneuver (*i.e.,* adjacent to the thalweg). The suite of measures developed for each reach, including potential realignment of the mowing, in-stream habitat enhancement, and re-location of the thalweg if necessary, to be worked out cooperatively through the adaptive habitat management plan (AHMP), are also designed to minimize effects of the project on in-stream steelhead habitat. In particular, the realignment of the mowing and the in-stream habitat enhancement (root wads, boulder clusters, etc.) will provide those functions of cover and shade that may be impacted in certain reaches by the mowing of vegetation.

Other avoidance and minimization measures for steelhead include the placement of matting at primary thalweg crossings for heavy equipment, which will minimize potential disturbance to the streambed. In addition, the Corps has agreed with NMFS on measures assuring passage opportunities under the bridges that are expected to allow any steelhead in the project area to move through the area unimpeded under passage-flow conditions.

Sediment management could have a direct affect on steelhead and the in-stream habitat depending on where in the project area it is accomplished and how much sediment must be removed. Several minimization measures already in the project description, such as performing the hydrologic analysis every five years to ascertain the channel invert, and sediment management based on specific triggers along longitudinal sections of the channel, and other measures as described in the PADD/SEIS/EIR/PAC (Corps 2007) will minimize potential impacts to in-stream habitat. Additional avoidance and minimization measures described below, including diverting the thalweg if necessary around the area subject to sediment management, will further minimize potential impacts to in-stream habitat.

Direct impacts to steelhead individuals from the vegetation and sediment management and other channel work are not expected with the implementation of the avoidance and minimization measures discussed below. With these minimization measures, steelhead streambank presence/absence surveys will be conducted by a qualified biologist before maintenance activities occur in the channel and at crossings of the thalweg. If any steelhead are found, the area will be marked and avoided and, if necessary, block -netting will be placed in the stream to keep the steelhead from moving into the areas where vegetation management activities will occur. This is expected to preclude take of steelhead, including direct harassment, harm, or mortality. Please refer to the enclosed Biological Assessment for further information

Effects to Least Bell's Vireo

One of the minimization measures developed for protection of steelhead habitat to be resolved through the AHMP, is the realignment of the annually mowed, rotational, and un-maintained areas in Reaches 3B and 4, which may directly affect least Bell's vireo nest substrate. This measure has been discussed with USFWS and CDFG and, although it is not preferred by these agencies, the measure is included in this document, and preferred by NMFS because it would keep the current natural thalweg intact on the north side of the river channel in Reaches 3b and 4.

The measure for realigning Rotation Area 1 to the north levee in Reaches 3B and 4, to be resolved in the AHMP, would keep the current natural thalweg intact on the north side of the levee, and at the same time would not affect vireo nest substrate on either side of the river channel. This measure has not been coordinated with USFWS or CDFG however; the USFWS has indicated that the Rotation Area realignment may be acceptable to their agency as it leaves approximately 60-feet of riverine habitat in the form of willow/cottonwood vegetation type in the river channel next to the levees. Please refer to the avoidance and minimization measures below and the enclosed Biological Assessment for additional information.

Indirect effects to steelhead

Indirect effects to steelhead include the potential loss of shade in the stream along the thalweg, depending on whether the thalweg occurs in the annually maintained, rotational, un-maintained or conservation/preservation areas. Other indirect effects from the project also include possible higher water temperatures within aquatic habitat (May to August) caused by the loss of shade, and the potential reduction in the amount of woody debris recruitment which could result in changes to the amount of in stream cover and pool habitat available for steelhead.

Indirect effects on steelhead and their habitat are expected to be avoided or minimized with implementation of the measures discussed below. Maintaining the best habitat possible for steelhead while at the same time minimizing the manipulation of the thalweg and the multi-agency adaptive habitat management plan development and implementation are key factors for avoiding and minimizing indirect effects to steelhead and their habitat. By avoiding the thalweg developed through the natural flow processes to the maximum extent feasible, only lesser portions of thalweg segments within the project are expected to the impacted by the proposed action. With the implementation of an adaptive habitat management plan, placement of impact minimization devices or materials at thalweg crossings, placement of block nets around avoidance of pools and aquatic habitat that may have a steelhead, steelhead streambank presence/absence surveys, a 10-foot buffer of bendable native riparian and wetland vegetation, placement of in-stream habitat enhancements *(to counter potential reduction in woody debris)*, realignment of the mowing area or the thalweg as worked out through the habitat management plan, and other avoidance and minimization measures discussed below, the Corps expects to avoid or minimize indirect effect of the projects O&M vegetation management or sediment treatments to steelhead and their in-stream habitat. Please refer to the enclosed Biological Assessment for further information.

Cumulative impacts

The Corps is not aware of any cumulative impacts from any non-Federal actions at this time. Please refer to the cumulative impacts section in the enclosed biological assessment and the PADD/SEIS/EIR/PAC (Corps 2007) for further information.

5. Relevant reports, including any environmental impact statement, environmental assessment, or biological assessment prepared: The Corps has included a biological assessment for the project which includes a detailed project description and table and figures related to the proposed action. The Corps provided NMFS with the Final Environmental Impact Statement for the Project in a letter and enclosure dated July 5, 2007.

6. Any other relevant available information on the action, the affected listed species, or critical habitat: The Corps provided NMFS with the Draft Environmental Impact Statement for the Project in a letter and enclosure dated July 5, 2007.

7. Avoidance and minimization measures: Based on the discussion above, the Corps has determined that the Proposed Action may affect, but is not likely to adversely affect, steelhead (O. mykiss) with the implementation of the following avoidance and minimization measures.

These measures were developed in coordination with NMFS and are designed to balance flow conveyance requirements for the flood control project, in stream requirements for the endangered southern California steelhead, and habitat requirements for the endangered least Bell's vireo, endangered southwestern willow flycatcher, and endangered coastal California gnatcatcher (among others) and critical habitat requirements for the vireo, flycatcher, and gnatcatcher. The vireo and flycatcher currently nest, and the gnatcatcher forages, in the channel. These measures were developed to be implemented through the Adaptive Habitat Management Plan (HMP) in coordination with Corps, City, NMFS, and other responsible agencies.

1. Buffer.

a. A corridor of native wetland and/or riparian vegetation will be left on either side of the primary thalweg in the channel.

b. During project implementation, an approximate 10-foot-wide buffer will be left in place on either side of the primary thalweg for steelhead shade requirements. However, when this vegetation is no longer bendable or flexible, or if woody vegetation (e.g., willows, cottonwoods, mulefat, etc.) becomes greater than 0.5 inches diameter at breast height (dbh), those areas of vegetation meeting this criteria within the 10-foot-wide buffer would be removed.

2. Avoidance of Steelhead.

a. A qualified biologist will perform field reconnaissance for steelhead prior to disturbance from project activities during Phases 1-3 and subsequent operations and maintenance actions associated with the proposed action. Field reconnaissance will consist of presence/absence surveys for steelhead juveniles and adults performed from the streambanks.

b. If steelheads are found in the Annually Maintained or Rotational Areas, no vegetation mowing will occur in the approximate 10-foot-wide buffer. The location coordinates shall be recorded (preferably in GPS), and the NMFS shall be notified immediately. The areas shall be flagged and avoided. Flagging will be removed at the end of the construction or maintenance activity.

c. If steelhead were found within the project area in stream segments that are not isolated pools, block-netting or other similar devices will be used 50-feet upstream and 50- feet downstream of their location to prevent steelhead from moving into the area of disturbance. No vegetation mowing will occur in the approximate 10-foot-wide-buffer and the area will be flagged and avoided. Flagging and block-netting or other devices will be removed at the end of the construction or maintenance activities.

3. Fish passage beneath bridges.

Fish passage beneath all bridges within the project area will be maintained. Rock riprap beneath Douglas Ave. and College Blvd bridges will be reconfigured to allow for steelhead passage per NMFS Fish Passage Guidelines, in coordination with NMFS hydraulic engineers.

4. Matting.

When crossing the primary thalweg with heavy equipment such as bulldozers, loaders, or truck haulers is unavoidable, a reconnaissance for presence of steelhead shall be conducted. If steelhead are found, the procedures in measure 2, above, shall apply and the crossing shall not be undertaken. When heavy equipment is utilized, matting material such as AMZ aluminum, U.S. Army PSP (Pierced Steel Planking), "Marston Matt," folded fiberglass, or Geotextile matting that disperses the weight of

5. In-stream habitat function.

General measures developed, in order of preference by NMFS, for the preservation or enhancement of in-stream habitat potentially affected by project activities, include potential realignment of the mowing plan in reaches 3B and 4, potential realignment of the rotational areas in reaches 3B and 4, in-stream habitat enhancement, and relocation of the channel thalweg in select locations in Reaches 3A, 3B, and 4. This suite of measures was developed to be implemented pursuant to the AHMP. Modifications to the alignment affecting critical habitat or vireo or flycatcher nest sites beyond those effects displayed in the SEIS/EIR would be resolved in the AHMP in consultation with the Corps, City of Oceanside, NMFS, and other responsible agencies, via field reconnaissance and in compliance with applicable laws and regulations.

a. Reach 3B-4 (Station 263+00 above Pilgrim Creek confluence to Station 385+00 College Blvd. Bridge).

For this reach, a suite of potential measures were developed, based on current stream characteristics.

1. Re-alignment of the annually maintained, rotational, and un-maintained areas would be implemented such that the widths of the un-maintained and rotational areas occur on the north side of the channel, over the existing thalweg and the annually cleared area occurs on the south side of the channel, from College Blvd Bridge to transition with the annually maintained area just upstream of Pilgrim Creek confluence. Portions of the thalwag that were not located within the Rotational or Un-maintained

areas after this realignment would be subject to in-stream habitat enhancement or relocation, if necessary, to be adjacent to the Rotational or Un-maintained area based on existing thalweg sinuosity and natural geomorphology, and be hydraulically acceptable (for the flow conveyance requirements of the flood control project) in accordance with the multi-agency adaptive HMP. NMFS understands that this measure may have some additional effect on the endangered vireo and flycatcher and their critical habitat. A meeting was held on January 17, 2008 attended by the Corps, City, NMFS and other responsible agencies. This measure was not considered favorable by the USFWS or the CDFG during the January 17, 2008 meeting.

2. Re-alignment Rotation Area 1 would be implemented such that the width of the Rotation 1 (60-ft), which is currently between Rotation 2 and the Annually Maintained area occur on the north side of the channel, over the existing thalweg, from College Blvd Bridge to transition with the annually maintained area just upstream of Pilgrim Creek confluence. From north levee to south levee, the channel in this reach would then include 60 feet of Rotation Area 1, 230 feet of Annually Maintained Area, 60 feet of Rotation 2, and 50 feet of Un-maintained Vegetation after this realignment. Portions of the thalwag that was not located within Rotational or Un-maintained areas after this realignment would be subject to in-stream habitat enhancement, if necessary, to provide appropriate shade and cover requirements for steelhead. NMFS acknowledges that this measure may have some addition effect on the endangered vireo and flycatcher and their critical habitat and would require concurrence from the CDFG, USFWS, and other responsible agencies.

3. Techniques for in-stream habitat enhancement will be implemented using criteria and standards set forth in the California Salmonid Streambed Habitat Restoration Manual (i.e., rootwads, tree boulder complexes, etc.) or other techniques as agreed upon through coordination with NMFS. The instream habitat enhancement measures may have minimal to no additional impacts to vireo or flycatcher, and ensure that in-stream cover and shelter (*i.e.*, primary constituent elements) for steelhead are maintained with minimal disturbance to the current thalweg.

4. If the above measures prove unsuccessful or are not implementable, portions of the thalwag occurring in the Annually Maintained Areas shall be moved to be adjacent to the Rotational or Un-maintained Area, based on existing thalweg, sinuousity and natural geomorphology, and will be hydraulically acceptable (for the flow conveyance requirements of the flood control channel) and in accordance with the multi-agency AHMP. Any relocation of the thalweg would be coordinated with the City, Corps, NMFS, and other responsible agencies via field reconnaissance.

b. Reach 3b to 3A Foussat Street Bridge (Station 181+00) to Pilgrim Creek (Station 256+00).

1. Techniques for in-stream habitat enhancement will be implemented using criteria and standards set forth in the California Salmonid Streambed Habitat Restoration Manual (i.e., rootwads, tree boulder complexes, etc.) or other techniques as agreed upon through coordination with NMFS. The instream habitat enhancement measures are not expected to have additional impacts to vireo or flycatcher and ensure that in-stream cover and shelter (*i.e.*, primary constituent elements) for steelhead are maintained with minimal disturbance to the current thalweg.

2. If the above measure proves unsuccessful or are not implementable, portions of the thalwag not adjacent to the Rotational or Un-maintained area shall be moved to be adjacent to the Rotational or Un-maintained Area, based on existing thalweg sinuousity, natural geomorphology, and be hydraulically acceptable (for the flow conveyance requirements of the flood control channel) and in accordance with the multi-agency AHMP. Any relocation of the thalweg would be coordinated with the City, Corps, NMFS, and other responsible agencies via field reconnaissance. Currently, the thalweg appears to be positioned within the Compensation/Preservation and Un-maintained Area.

c. Reach 3A to 1 *Interstate 5 (Station 42+00 to Station 181+00 Foussat Road Bridge)*

1. The thalweg, currently located within the Annually Maintained Area (Station to Station), will be left in a self-maintaining alignment dictated by natural fluvial geomorphic processes. The thalweg does not appear to require manipulation at this time. The position of the thalweg and its suitability as steelhead habitat will be monitored in accordance with the multi-agency adaptive habitat management plan. If adaptive management becomes necessary, techniques for in-stream habitat enhancement using criteria and standards set forth in the California Salmonid Streambed Habitat Restoration Manual (i.e., rootwads, tree boulder complexes, etc.) would be used to provide in-stream cover and shade.

6. Sediment management.

If it becomes necessary to perform sediment management, sediment management activities may directly impact in-stream habitat in the primary thalweg, the thalweg shall be diverted around the area. If necessary, the thalweg would be constructed through the impact area based upon extant thalweg sinuosity appropriate for the channel, natural geomorphology, and hydraulic acceptability in accordance with the multi-agency adaptive AHMP.

The Corps requests written concurrence or non-concurrence with our determination that the proposed project is not likely to adversely affect the endangered Southern California Steelhead DPS. After you have reviewed all of the material presented, we ask you to please contact our staff project ecologist, Mr. Thomas Keeney, at (213) 452-3875 or via electronic mail at Thomas.W.Keeney@usace.army.mil. All correspondence should be addressed to Ms. Ruth Bajza Villalobos, Chief, Planning Division, U.S. Army Corps of Engineers, Los Angeles District, Attn: Thomas W. Keeney, CESPL-PD-RQ, P.O. Box 532711, Los Angeles, California 90053-2325.

Sincerely,

Ruth Bajza Villalobos
Chief, Planning Division

Enclosures

ATTACHMENT 5

CEQA MITIGATION REQUIREMENTS

1. U.S. Army Corps of Engineers, Mitigation Monitoring and Reporting Program for the San Luis Rey River Flood Control Project, Appendix B-6, MMRP Table

Mitigation Monitoring and Reporting Program – San Luis Rey River Flood Control Project Conditions

Measure		Responsible Measure Implementation	Completion Requirement	Agency Responsible for Verification
Conservation/Minimization Measure (2006 amended Final Biological Opinion)	**Terms and Conditions** (2006 amended Final Biological Opinion)			
N/A	1. The Corps, City and Service shall meet annually to ensure that only the minimum amount of vegetation clearing necessary to achieve the appropriate level of flood protection for each construction phase and future operations and maintenance is done in the optimal configuration that minimizes potential impacts to the vireo, flycatcher, gnatcatcher and arroyo toad the maximum extent practicable. The Corps and/or City shall implement all practicable minimization measures identified by the Service, Corps and/or City.	Corps City of Oceanside	Coordination with USFWS	Corps City of Oceanside
1. Vegetation and sediment removal for project construction, operations and maintenance will avoid the flycatcher territories mapped in 2003 in reach 3a; and will include two, 60 to 75-foot-wide, strips of vegetation that will be cleared (i.e., mowing, chipping, shredding) every 10 years, with a 5-year lag between the two, to reduce the width of the annually cleared area. Prevention of disturbance and trampling of riparian vegetation outside of the work zone, all riparian habitat areas receiving action (maintenance), as well as the unmaintained cottonwood/willow/mulefat vegetation areas will be accomplished by the Geographic	2. Conservation Measure 1 shall be modified to require use of the GIS/GPS demarcating procedure for: a) Phases 1, 2, and 3 of the initial vegetation and/or sediment removal (i.e., construction); and b) any subsequent mechanized exotic plant, vegetation and/or sediment removal necessary in the future (i.e., operations and maintenance), including access routes and staging areas, to prevent additional impacts. The construction contractor will be held to terms of the contract which will specify areas to be off-limits to all personnel and equipment. The GIS/GPS demarcating procedure implemented to identify and demarcate the action areas by	Contractor	Approval of final plans/ specification and final O&M plan	Corps City of Oceanside

Measure		Responsible Measure Implementation	Completion Requirement	Agency Responsible for Verification
Conservation/Minimization Measure (2006 amended Final Biological Opinion)	**Terms and Conditions** (2006 amended Final Biological Opinion)			
Information System (GIS)/Global Positioning System (GPS) demarcating procedure described in the following: The areas to receive the action (maintenance) as well as the unmaintained areas will be hand mapped by a qualified biologist experienced with vireo, flycatcher, and riparian habitats, digitized into a GIS, GPS northings and eastings data points downloaded into a contemporary model (less than 5 years old) hand held GPS unit, developed into a shapefile, and field verified. The action (maintained) and unmaintained areas will be identified and demarcated by the use of flagging and taping in concert with the field verified GPS northings and eastings. This procedure will be under the direct supervision, at all times, by a qualified biologist experienced with vireo, flycatcher, and riparian habitats, GIS/GPS cartographic specialists, and a hydrologist familiar with the flood conveyance requirements, prior to construction for the initial clearing of vegetation. Contractors will be informed and educated of the significance of identified and demarcated areas (e.g., flagging and taping) in relation to habitat preservation by the qualified biologist. The alignment will be optimized in the field to further reduce impacts to riparian habitat. Decisions regarding adjustments to the alignment will be made by the Corps with input of the hydraulic engineer, the qualified biologist, and a GIS/GPS cartographic specialist, and will be based on field observations and the most recent survey	the use of flagging and taping in concert with the field verified GPS northings and eastings, shall be in place a half to full day in advance of the mowing, chipping, clearing, and/or sediment removal operations. Furthermore, the same GIS/GPS demarcating procedure will be implemented and used for all exotic plant eradication of patch size greater than 0.25 acres. The flagging and taping will be kept in place and in good repair until completion of work, at which time it will be removed. The Service will be notified at the earliest practicable time if impacts occurred outside of the flagged or taped limits, work shall be stopped and the Service notified immediately (USFWS Clarification of Terms and Conditions, May 23, 2006). All equipment maintenance, staging, and dispensing of fuel, oil, coolant, or any other such activities shall occur in designated areas outside of waters of the United States within the flagged, tapped and/or fenced project impact limits. These designated areas shall be located in previously compacted and disturbed areas in such a manner as to prevent any runoff from entering waters of the United States, and shall be shown on the construction plans. If dispensing of fuel, oil, or coolant is necessary within the flood control channel because of the distance necessary for equipment to reach the limited access points, these activities may occur within the channel, but outside the low-flow			

Measure		Responsible Measure Implementation	Completion Requirement	Agency Responsible for Verification
Conservation/Minimization Measure (2006 amended Final Biological Opinion)	**Terms and Conditions** (2006 amended Final Biological Opinion)			
information. Adjustments to the alignment will be documented. An element within the contract task order is the requirement to have GIS/GPS capability for identifying and demarcating the alignments. A Corps biologist(s) or its designated contract biologist will be on site to monitor the project site during the contracted vegetation mowing, chipping, and shredding. Though GPS accuracy can be affected by the inclement conditions, the use of the GIS/GPS demarcating procedure will continue on days of inclement weather."	channel or any open waters areas, using the Best Management Practices (BMP's) described below. As part of the project Plans and Specifications document, the Corps requires the construction contractor to address environmental protection and pollution control using BMPs as requirements prescribed under the Storm Water Pollution Prevention Plan (SWPPP) for potential hazardous or contaminated material. This is a mandatory requirement of the Plans and Specs and is further implemented into the contractual agreement as part of the projects' Clean Water Act Section 402 permit requirement. Areas in which work will be accomplished, containment areas will be created using, as an example, berms and heavy duty liners and spill kits within immediate proximity. BMPs include such actions as having staged on site, hazardous waste clean-up equipment and spill kits, using the appropriate size and gauge drip pans and absorbent diapers. Contractor equipment shall be checked for leaks prior to operation and repaired as necessary. "No-fueling zones" shall be designated on construction plans. The Corps and/or City shall provide for a monitoring biologist(s) approved by the Service to be onsite during: a) exotic plant removal; b) risk reduction mowing and chipping; c) Phases 1-3 of the initial vegetation and/or sediment removal (i.e., construction); and d) any subsequent			

Measure		Responsible Measure Implementation	Completion Requirement	Agency Responsible for Verification
Conservation/Minimization Measure (2006 amended Final Biological Opinion)	**Terms and Conditions** (2006 amended Final Biological Opinion)			
	vegetation and/or sediment removal necessary in the future (i.e., operations and maintenance). The biologist must be knowledgeable of vireo, flycatcher, gnatcatcher and arroyo toad biology and ecology. The Service will provide the Corps with a list of qualified biologist with Section 10(A)(1)(a) permits, so that the Corps may select and notify the Service of the selection. Any changes will be discussed between the Corps and Service. The Corps and/or City shall submit the biologist's name, address, telephone number, and work schedule on the project to the Service at least seven days prior to initiating each exotic plant, vegetation and/or sediment removal effort during project construction or operations and maintenance. The Corps will also provide the Service a list of possible biologists who the Corps expects to monitor construction activities over the next several years and provide their qualifications. Any changes will be discussed between the Corps and the Service. The biologist shall perform the following duties: a. Be onsite daily to oversee all contractors and construction personnel to ensure compliance with the project description and conservation measures as modified by the terms and conditions of this biological opinion. b. Report any violation to the Service within 24 hours of its occurrence.			

Measure		Responsible Measure Implementation	Completion Requirement	Agency Responsible for Verification
Conservation/Minimization Measure (2006 amended Final Biological Opinion)	**Terms and Conditions** (2006 amended Final Biological Opinion)			
	c. Submit monthly reports (including photographs of impact areas) to the Service during: a) exotic plant removal; b) risk reduction mowing and chipping; c) Phases 1-3 of the initial vegetation and/or sediment removal; and d) any subsequent vegetation and/or sediment removal necessary in the future. The monthly reports shall consist of a concise account documenting: a) the acreage and location of exotic plant, vegetation and/or sediment removal, either by graphic map or table or other convenient means; b) that impacts did not occur in riparian/wetland habitat to be avoided; c) general compliance with all conservation measures and terms and conditions; and d) the number and location of all incidental sightings of vireo, flycatcher, gnatcatcher or arroyo toads observed and a description of how any of these species were affected. d. Submit final reports (including photographs of impact areas) to the Service within 60 days of completion of: a) exotic plant removal; b) risk reduction mowing and chipping; c) Phases 1-3 of the initial vegetation and/or sediment removal; and c) any subsequent vegetation and/or sediment removal necessary in the future. The final reports shall document: a) the acreage and location of exotic plant, vegetation and/or sediment removal; b) that impacts did not occur in riparian/wetland habitat to be			

Measure		Responsible Measure Implementation	Completion Requirement	Agency Responsible for Verification
Conservation/Minimization Measure (2006 amended Final Biological Opinion)	**Terms and Conditions** (2006 amended Final Biological Opinion)			
	avoided; c) general compliance with all conservation measures and terms and conditions; and d) the number and location of all vireo, flycatcher, gnatcatcher or arroyo toads observed and a description of how any of these species were affected.			
2. Areas of exotic plant species removal within unmaintained areas or compensation sites will be replanted with native riparian or upland vegetation suited to the existing hydrologic conditions. Areas that are temporarily disturbed from staging or access will also have substrate conditions restored and be replanted/reseeded with native riparian vegetation suited to the existing hydrologic conditions. Best management practices to promote replanting success, as described in the Corps' June 24, 2004, updated project description, will be used. All exotic and invasive species will be intensively controlled in these areas until native vegetation is reestablished. The success criteria for this replanting will be 50 percent of planted tress and shrubs and 75 percent cover of native species at the end of 5 years. If the success criteria are not met, within the first 5 years, the portion of the planted area that failed will be replanted/reseeded. After 5 years, if the planted/seeded area is not successful, efforts to revegetate may cease.	3. Conservation Measure 2 shall be modified to require the Corps to submit draft riparian/wetland restoration plans to the Service for approval at least 30 calendar days prior to reinitiating exotic plant removal after risk reduction mowing and chipping. These plans shall address all of the restoration areas associated with the exotic plant removal described in Conservation Measure 2. The draft plan shall include the following information and conditions: a. All final specifications and topographic-based planting and irrigation plans (with 0.5-foot contours and typical cross-sections) for riparian/wetland restoration. Planting and irrigation shall not be installed until the Agencies have approved of the plans. All planting shall be installed in a way that mimics natural plant distribution, and not in rows; b. Planting palettes (plant species, size and number/acre) and seed mix (plant species and pounds/acre). Unless otherwise approved by the Agencies, only locally native species (no cultivars) obtained within the San	Contractor - Construction Corps – Restoration Plan	Approval of final plans/ specification and final O&M plan Final restoration plan	Corps, City of Oceanside Corps/USFWS

Measure		Responsible Measure Implementation	Completion Requirement	Agency Responsible for Verification
Conservation/Minimization Measure (2006 amended Final Biological Opinion)	**Terms and Conditions** (2006 amended Final Biological Opinion)			
	Luis Rey watershed as available from as close to the project area as possible shall be used. The source and proof of local nativeness of all plant material and seed not collected from the impact areas shall be provided. Specifications for any proposed use of plants and cuttings transplanted from impacted portions of the channel, including an explanation of how areas to be used as a source for plants and cuttings will be chosen, will also be given. Collection of material from the unmaintained portions of the channel shall require approval, by the Service, prior to collection; c. Submittal of as-built drawings of the riparian/wetland restoration planting, and irrigation to the Service within 120 days of completion; d. At the first and second anniversary of plant installation, all dead plants shall be replaced unless their function has been replaced by natural recruitment; e. A final implementation schedule that indicates when exotic plant removal, as well as riparian/wetland restoration planting and irrigation, shall begin and end. Restoration shall begin within 60 days of completing exotic plant removal. Any temporal loss of riparian/wetland habitat caused by delays in riparian/wetland restoration shall be offset through riparian/wetland creation at a 0.5:1 ratio for every 6 months of delay (i.e., 1:1 for			

Measure		Responsible Measure Implementation	Completion Requirement	Agency Responsible for Verification
Conservation/Minimization Measure (2006 amended Final Biological Opinion)	**Terms and Conditions** (2006 amended Final Biological Opinion)			
	12 months delay, 1.5:1 for 18 months delay, etc.); f. Five years of success criteria for riparian/wetland restoration areas including: separate percent cover criteria for herbaceous understory, shrub midstory, and tree overstory, and a total of 90-100 percent absolute cover for all 3 layers at the end of 5 years; evidence of natural recruitment of multiple native species; 0 percent coverage for giant reed (Arundo donax) and saltceder (Tamarix ramosissima), and no more than 5 percent coverage for other exotic/weed species; g. A minimum five years of maintenance and monitoring of riparian/wetland restoration, unless success criteria are met earlier and all artificial water supply has been cut off for at least two years. Maintenance and monitoring of riparian/wetland restoration shall continue until success criteria are achieved; h. A vegetation monitoring plan with a map of proposed sampling locations. Stratified-random sampling shall be used for all quantitative surveys; i. Contingency measures in the event of restoration failure; and j. Annual restoration maintenance and			

Measure		Responsible Measure Implementation	Completion Requirement	Agency Responsible for Verification
Conservation/Minimization Measure (2006 amended Final Biological Opinion)	**Terms and Conditions** (2006 amended Final Biological Opinion)			
	monitoring reports shall be submitted to the Agencies after the maintenance and monitoring period and no later than December 1 of each year.			
3. Vegetation surveys will be completed every five years following the completion of the construction phase clearing to coincide with topographical surveys. Vegetation surveys will use current aerial photography and geographically referenced ground-truthing to delineate boundaries. Vegetation mapping will be similar to that performed in 2002 and will distinguish vegetation cover types within the project area from College Boulevard to the Pacific Ocean that includes all maintained areas as well as unmaintained areas, in-channel compensation sites and the five out-of-channel detention ponds. The mapping will document changes in habitat quality within each mapping unit based on vegetation characteristics used to define good riparian habitat and vireo or flycatcher habitat (e.g., composition, cover of dominant species, density, and structural diversity), based on the 2002 vegetation mapping criteria.	4. Conservation Measure 3 shall be modified to require the Corps and/or City to submit vegetation surveys and mapping to the Service by December 1 of each year these are done.	Contractor	Approval of final plans/ specification and final O&M plan	Corps, City of Oceanside
4. To minimize habitat impacts in rotationally cleared areas of the long-term operation and maintenance plan, leaf litter or small stems will be replaced after vegetation clearing and sediment removal in these areas to aid nutrient cycling and regrowth. This will be limited to areas that are identified during vegetation	N/A	Contractor	Approval of final plans/ specification and final O&M plan	Corps, City of Oceanside

Measure		Responsible Measure Implementation	Completion Requirement	Agency Responsible for Verification
Conservation/Minimization Measure (2006 amended Final Biological Opinion)	**Terms and Conditions** (2006 amended Final Biological Opinion)			
surveys and biological monitoring prior to clearing that is not dominated by exotic plant species. Native litter and biomass will be redistributed to any areas treated for exotic plant species removal, if native litter and biomass are available at the time such application would benefit native species recruitment. The appropriate volume or density will be estimated from litter in unaffected areas, but is generally 1 to 2 inches in depth. Conversely, vegetation and debris greater than 2 inches deep will not be allowed to remain in the channel.				
5. Regular evaluations (i.e., annual maintenance inspections of flood control structural features, which will be completed by the Corps and the City) will be performed to determine if vegetation clearing or sediment removal are resulting in hydrologic alteration of surface water that, in turn, is resulting in excessive channel incision or other evidence of systemic scour or dewatering of vegetation over the length of the project. The City will also complete a careful evaluation of the occurrence and effect of scouring and/or dewatering on vegetation/habitat in the channel in the season following clearing of rotation 2 (i.e., projected to be 11 years after the initial clearing event), and every 5 years thereafter, in conjunction with the vegetation survey and topographic survey. In the event that excessive channel incision or other evidence of systemic scour of vegetation	5. Conservation Measure 5 shall be modified to require the Corps and/or City to perform monthly inspections of the flood control channel and restoration areas during construction, operations and maintenance and to submit annual reports with the results of monthly inspections to the Service by December 1. The frequency of monitoring may be modified if the Service concurs that previous monitoring indicates that monthly monitoring is unnecessary. The Corps and/or City shall consult with the Service regarding measures to be taken to address any problems identified by the inspections. Trash, other dumped debris, abandoned vehicles, equipment, homeless encampments, or other potential exotic rodent shelter shall be surveyed for and identified during monthly inspections. The Corps and/or City shall provide for the removal of trash, other	Corps, City of Oceanside	Final O&M plan	Corps, City of Oceanside

Measure		Responsible Measure Implementation	Completion Requirement	Agency Responsible for Verification
Conservation/Minimization Measure (2006 amended Final Biological Opinion)	**Terms and Conditions** (2006 amended Final Biological Opinion)			
occurs, the City will consult with the Corps to implement appropriate measures.	dumped debris, abandoned vehicles, equipment, homeless encampments, or other potential exotic rodent shelter from the flood control channel and any restoration areas.			
6. No new roads will be cleared for sediment removal. Trucks transporting sediment will be limited to existing access ramps and the maintained areas located at existing over-crossings.	6. Conservation Measure 6 shall be modified to require that no new roads, other than those identified in the Corps biological assessment (exhibit 10-5), will be constructed. Any modification will require a map be submitted to the Service for approval, prior to construction.	Contractor	Approval of final plans/ specification and final O&M plan	Corps, City of Oceanside
7. The Service will be notified 45 days in advance of scheduled sediment removal activities.	7. Conservation Measure 7 shall be modified to require that the Service shall be notified 45 days in advance of scheduled exotic plant, vegetation and/or sediment removal during the construction and operations/maintenance phases.	Corps, City of Oceanside	Final O&M plan	Corps, City of Oceanside
8. Sediment removal will follow Best Management Practices (BMPs) as prescribed under the Storm Water Pollution Prevention Plan. Consistent with Federal and State regulations, BMPs will be implemented to control the erosion of sediments into the water, prevent or contain spills from storage locations or equipment used within or adjacent to the river channel and other actions that may affect water quality. The plan will be implemented during every vegetation clearing and sediment removal event.	8. Conservation Measure 8 shall be modified to require that exotic plant, vegetation and/or sediment removal during the risk reduction mowing and chipping, and construction and operations/maintenance Phases 1-3 shall follow BMPs as prescribed under the Storm Water Pollution Prevention Plan.	Contractor	Approval of final plans/ specification and final O&M plan	Corps, City of Oceanside, RWQCB

9. The Corps will continue to implement a cowbird trapping program as follows: a. The cowbird-trapping program shall consist of continuation of the methods used previously within the flood control portion of the San Luis Rey River. The Corps will review the cowbird trapping methodologies utilized over the years within and outside the project area (e.g., Prado Basin). The Corps will develop a protocol outlining the parameters to be utilized for cowbird trapping as part of this biological opinion. The trapping protocol will be provided to the Service for review and approval and appended to the final biological opinion. If a more effective alternative cowbird control method is developed and approved by the Service, the methodology may be revisited by agreement of all affected parties (Corps, Service, City, etc...). Until the protocol is developed and approved, the Corps will continue cowbird trapping utilizing methodologies similar to previous seasons. b. The Corps and City will provide for a qualified operator to continue (without missing a season) to maintain and operate the cowbird management program in perpetuity within the flood control portion of the San Luis Rey River from April 1 - June 30 annually. It is imperative that the trapping start April 1 to avoid nest parasitism. In year 2003 where cowbird traps were initiated during the standard period, there were no parasitism events. However, in year 2002 where cowbird traps were initiated 30 days late (May 1), three	9. Conservation Measure 9 in total shall be modified to implement the cowbird trapping conditions as described in Enclosure A. Conservation Measure 9b shall be modified to require the Corps and City to provided for a qualified, permitted biologist approved by the Service to continue (without missing a season) to maintain and operate the cowbird management program in perpetuity. 10. Conservation Measure 9c shall be modified to require cowbird trapping to be implemented annually, starting in the spring of 2005, regardless of the status of the construction activities.	Contractor	Approval of final plans/ specification and final O&M plan	Corps, City of Oceanside

parasitism events were recorded. c. A cowbird trapping program may cease after discussion with the Service, if, over time, the biological monitors conducting the cowbird trapping and vireo and flycatcher monitoring find no female cowbirds are being captured in the traps, no cowbirds in the area, and no cowbird parasitism is occurring to vireo and flycatcher. However, should the above condition be met and cowbird trapping be ceased, nest monitoring must occur annually to ensure that cowbirds have not reappeared. If cowbird nest parasitism or cowbirds are found within the project area, the program must be reinstated at an appropriate level, as approved by the Service. d. Following 15 years after the flow conveyance of 71,200 cfs is achieved (to coincide with 2 complete rotations cycle clearings), the City will have the option of conducting an evaluation of cowbird nest parasitism rates. The evaluation would entail conducting vireo nest monitoring for 5 years in place of cowbird trapping. The intent of the nest monitoring is to obtain data to ascertain the cowbird nest parasitism rates within the project area and the frequency of trapping necessary (ex. every 2 years, 4 years, etc). If, at any time during this 5-year evaluation period, cowbird nest parasitism rates exceed 5% of vireo nests, 1) the cowbird trapping program may be reinitiated and vireo nest monitoring suspended, or 2) nest monitoring may continue in absence of cowbird trapping in order to complete the 5-year evaluation, with				

agreement of affected parties. At the completion of the 5-year evaluation, vireo nest monitoring would cease. Results of the evaluation would be used to refine or modify the trapping program to reflect the most efficient and economically feasible methods. If conditions are such that parasitism rates remain below 5% of nests throughout this 5-year period (in absence of trapping), cowbird trapping or vireo nest monitoring may be initiated at a lesser frequency (ex. every 2 years, 4 years, etc) with agreement of affected parties. e. Eight traps shall be placed within avoided riparian/wetland habitat throughout the project area. The use of any particular trap may cease if no female cowbirds are detected in that individual trap within an entire trapping season as long as there is no evidence of nest parasitism in the coverage area of the individual trap (approximately half the distance to the next trap(s)). However, the biological monitors conducting the cowbird trapping and vireo and flycatcher monitoring will need to assess whether this is a function of location and/or vandalism of the trap and whether relocation is the appropriate response, rather than elimination of the trap. Should numbers of cowbirds increase in the nearby traps that remain, the individual trap that was removed would need to be restarted. . f. Each trap must be checked at least once every 24 hours and all non-target birds shall be recorded and released from traps immediately upon their discovery. Any and all				

traps should be moved, temporarily shut down or more frequently visited whenever necessary to maximize trapping effort efficiency or to reduce real or potential impacts to non-target species. g. Observations of all marked or banded cowbirds will be recorded and reported to the U.S. Geological Survey Bird Banding Lab ([http://www.pwrc.usgs.gov/bbl/] or 1-800-327-BAND) as soon as possible. Once the necessary data (e.g., band number, location and sequence of color bands or other markers) are noted, marked or banded male cowbirds should be released at the point of capture. All marked or banded females and all unbanded cowbirds will be euthanized at the point of capture unless alternative measures were previously authorized by the Service. h. Harm or death of incidentally captured individual non-target birds will not exceed two percent of total captures of individual non-target birds on an annual basis. All non-target captures (number of individuals by species) must be reported to the Service monthly. All non-target mortality must be reported to the Service immediately with an assessment of the cause of mortality. Such reports will be reviewed by the Service in cooperation with the Corps, City, and cowbird trap operator(s) to determine if cowbird trap(s) should be relocated for the remainder of the season. If a mortality of any rare, listed, or otherwise sensitive species of bird occurs, the continuation of the program will cease until the cause of the mortality is identified and any				

problems with methodology are rectified. The Corps will take measures to ensure that no non-target birds die due to lack of food or water or unclean conditions. i. The Corps or the City (whoever is funding the effort at the time) will report to the Service annually by November 1 and to the least Bell's vireo/southwestern willow flycatcher/yellow-billed cuckoo working group via Biological Reporting Database software to [http://wercsd01.wr.usgs.gov]. The reports will include at least the following information: i. Copies (8.5 x 11 inches) of USGS 7.5" maps depicting the location of traps, including the quadrangle name and County. The map should be at a 1:24,000 scale. ii. The number of active days each trap was deployed. iii. The number and sex of cowbirds captured in each trap. iv. The number of banded cowbirds including USFWS band number, date, and location of capture. v. The number and species of non-target birds incidentally captured, harmed, or killed and the location of each capture.				
10. Cowbird trapping outside of the project area upstream in the San Luis Rey River in conjunction with cowbird trapping efforts	11. Conservation Measure 10 shall be modified to require the Corps and City to implement the cowbird trapping program	Contractor	Final O&M plan	City of Oceanside

conducted in the flood control channel. This would consist of an additional 10 traps (this is in addition to this project, the 6 traps near the sand mining operation two miles upstream of I-15 and the 4 traps at the upper San Luis Rey River near lake Henshaw), beginning the trapping season following the implementation of Phase 1 vegetation clearing of the long-term operation and maintenance (i.e., phased vegetation clearing and sediment removal), in perpetuity, unless conditions as described in item "c" above are met. Traps will be placed on City, County, or State-owned sites only. The Corps will construct the additional traps; however, locating the operation sites upstream of the project area will be determined by the Corps, City, and Service. The Corps will be responsible for operating the trapping program during the construction phase and the City during the operation and maintenance phase. Cowbird surveys may be done to help optimize placement but shall not be done in lieu of cowbird trapping.	outside of the project area consistent with the methods and requirements of Conservation Measure 9 except that it must start in spring 2007 following the implementation the risk reduction mowing and chipping.			
11. The Corps will continue to implement a vireo and flycatcher monitoring program as follows: a. The Corps and City will provide for a qualified biologist(s) to survey for both vireos and flycatchers within the project area. Vireo nest monitoring will occur through eight years after the project impacts occur. Vireo and flycatcher abundance and distribution monitoring will occur in perpetuity. b. Observations of all marked or banded	12. Conservation Measure 11 in total shall be modified to implement the vireo and flycatcher monitoring condition as described in Enclosure B. Enclosure B may be modified pending the outcome of Conservation Measure 11c, but will be implemented until such time that it is modified. Conservation Measure 11a shall be modified to require that the Service approve of the qualified, permitted biologist used to implement the vireo and flycatcher monitoring program, and require that nest monitoring be	Contractor	Approval of final plans/ specification and final O&M plan	Corps, City of Oceanside

birds will be recorded and reported to the U.S. Geological Survey Bird Banding Lab ([http://www.pwrc.usgs.gov/bbl/] or 1-800-327-BAND) as soon as possible. Data to be reported includes, but is not limited to, band number, location and sequence of color bands or other markers. c. The vireo and flycatcher monitoring program shall use established methods. The Corps or its designee will follow the USFWS protocol for vireo and flycatcher surveys (USFWS 2001) The Corps will review the methodologies utilized over the years within and outside of the project area (e.g., Prado Basin) including other appropriate vireo, flycatcher, and landbird population and nest monitoring methodologies. The Corps will develop a sampling protocol outlining the parameters to be utilized for population monitoring during the appropriate season as part of this biological opinion. The sampling protocol will be provided to the Service for review and approval and appended to the final biological opinion. If a more effective methodology is developed and approved by the Service, the methodology may be revisited by agreement of affected parties (Corps, Service, City, etc...). Until the protocol is developed and approved, the Corps will continue monitoring utilizing methodologies similar to previous seasons. d. In addition to protocol surveys for the vireo, additional visits will be made to each vireo pair to locate nests and record the number of eggs, nestlings, and fledglings	done annually during initial exotic plant removal, risk reduction mowing and chipping, Phases 1-3 of project construction (estimated to take approximately seven years) and eight years after project construction in completed, for a total of approximately 15 years. This monitoring shall be implemented annually, starting in the spring of 2005, regardless of the status of the construction activities. If flycatchers are found during the monitoring program, the Corps and/or City will meet with the Service prior to initiating construction and/or operations and maintenance to ensure that the flycatcher locations and an appropriate buffer are avoided to the maximum extent practicable. 13. Conservation Measure 11d shall be modified to apply to the flycatcher as well as the vireo.			

produced, and nest site characteristics. All cowbird eggs or young discovered in vireo or other host nests shall be removed. As stated above, nest monitoring will occur for 8 years after project impacts. However, vireo nest monitoring may also be reinitiated as conditioned with the cowbird trapping program (see Conservation Measure #9c). e. If found to be necessary and useful, the Corps will evaluate the methods for breeding status, delineate breeding territories, and nest monitoring data that is consistent with the journal referenced scientific literature. The Corps will use qualified, competent, and permitted biological personnel. f. The Corps or City (depending on which entity is funding the effort) will report to the Service annually by November 1 and to the least Bell=s vireo/Southwestern willow flycatcher/YBCU working group via Biological Reporting Database software to http://wercsd01.wr.usgs.gov. The information required in the reports is identified in Service survey protocol (USFWS 2001) and should meet MHCP standards once developed.	14. Conservation Measure 11e shall be modified to apply to the vireo as well as the flycatcher. 15. Term and Condition 15 on page 122 of the Amended Final Biological Opinion (2006) is struck out by the Service (USFWS Clarification of Terms and Conditions, May 23, 2006).			
12. To avoid direct vireo and flycatcher mortality, no vegetation clearing or sediment removal will be scheduled within any territory physically occupied by nesting or breeding pairs. The Corps and City will schedule all work between September 15 and March 15. If vireos or flycatchers are detected, work will halt within the subject area(s) and a qualified biologist will confirm the birds'	16. Conservation Measure 12 shall be modified to require that the Corps or City provide for a qualified, permitted biologist approved by the Service to survey, as directed by the Service, work areas to ensure that no exotic plant, vegetation or sediment removal shall impact vireo and flycatchers, regardless of the time of year (i.e., to prevent impacts to early arrivers or late departures outside the	Contractor	Approval of final plans/ specification and final O&M plan	Corps, City of Oceanside

presence/absence. Operation and maintenance activities would resume when the biologist has confirmed the birds' departure. Work would continue in other areas that are not within a territory occupied by nesting or breeding pairs.	vireo and flycatcher breeding seasons).			
13. Any activity associated with scheduled operation and maintenance within the flood conveyance zone and detention/compensation ponds will occur between September 15 and March 15. For any scheduled operation and maintenance activity within the flood control project area that may need to be scheduled from March 15 to September 15, the Corps will notify the Service 45 days in advance and will coordinate the scheduled activities with the Service. In addition, a qualified, permitted biologist must confirm that no nests or breeding pairs of vireos or flycatchers are present in the work area. In work areas adjacent to habitat that supports vireo or flycatcher breeding pairs or nests where ambient noise is greater than 57 dBA L_{eq} to 72 dBA L_{eq} (at or less than 400 feet), noise barriers will be constructed and noise levels monitored from a safe area with a known distance from the construction noise source so as to ensure that construction does not result in a 5 dBA L_{eq} increase over daily ambient conditions.	17. Conservation Measure 13 shall be modified to require: a) exotic plant removal; b) risk reduction mowing and chipping; c) Phases 1-3 of the initial vegetation and/or sediment removal (i.e., construction); and d) any subsequent vegetation and/or sediment removal necessary in the future (i.e., operations and maintenance); within the flood control channel and detention/compensation ponds to occur between September 16 and March 14 (i.e., outside the vireo and flycatcher breeding seasons). Any work necessary during the vireo and flycatcher breeding seasons will require re-initiation of consultation. The Corps and/or City shall avoid: a) exotic plant removal; b) risk reduction mowing and chipping; c) Phases 1-3 of the initial vegetation and/or sediment removal (i.e., construction); and d) any subsequent vegetation and/or sediment removal necessary in the future (i.e., operations and maintenance) in at least the last kilometer reach of the eastern end of flood control channel during the arroyo toad breeding season [i.e., March 15 to July 31 (or sooner if a qualified biologist demonstrates to the satisfaction of the Agencies that arroyo toads are not present in the project area)]. If			

	arroyo toads are found, the reach of the flood control channel in which work cannot be done during the breeding season shall be adjusted as determined by the Service. The Corps and/or City shall provide for a biologist approved by the Service to perform protocol arroyo toad surveys in the two-mile reach of the eastern end of flood control channel in the breeding season prior to initiating: a) exotic plant removal after risk reduction mowing and chipping; b) Phases 1-3 of the initial vegetation and/or sediment removal (i.e., construction); and c) any subsequent vegetation and/or sediment removal necessary in the future (i.e., operations and maintenance). If arroyo toads are found, the Corps and/or City shall contact the Service to identify measures the Corps and/or City shall implement to minimize potential take of the arroyo toad (e.g., exclusionary fencing, translocation of arroyo toads from project footprint, etc…). In addition, subsequent surveys shall need to extend further into the flood control channel as determined by the Service, based on the location of the arroyo toads found.			
14. To avoid or minimize unexpected impacts to habitat and species, a worker education program will be required for all personnel who enter the flood control channel or detention ponds that serve as compensation sites. The program will emphasize the role of these species in the ecosystem and the penalties that could arise from misconduct.	18. Conservation Measure 14 shall be modified to require that a qualified biologist experienced with vireo, flycatcher, and riparian habitats, shall train all contractors and construction personnel on the biological resources associated with this project and ensure that training is implemented by construction personnel. At a minimum, training shall include: 1) the purpose for	Corps, City of Oceanside, or Contractor	Approval of final plans/ specification and final O&M plan	Corps, City of Oceanside

	resource protection; 2) a description of the vireo, flycatcher, gnatcatcher, arroyo toad and their habitats; 3) the project description, conservation measures and terms and conditions given in this biological opinion that should be implemented during project construction, including strictly limiting activities, vehicles, equipment, and construction materials to the identified and demarcated project f footprint to avoid sensitive resource areas in the field (i.e., avoided areas delineated on maps or on the project site by clear and easily identifiable and demarcated flagging or taping); 4) environmentally responsible construction practices, including: a) keeping the project site clean of debris and enclosing food related trash in sealed containers and removing them from the site daily to avoid attracting predators of the riparian birds; and b) not bringing pets to the project site; 5) the protocol to resolve conflicts that may arise at any time during the construction process; and 6) the general provisions of the Act, the need to adhere to the provisions of the Act, the penalties associated with violating the Act.			
15. Signs and maps that identify compensation/mitigation areas (unmaintained areas, in-channel compensation sites and detention ponds) will be placed along the trails on the top of the levee as part of the long-term operation and maintenance (i.e., phased vegetation clearing and sediment removal) and not part of the one-time risk reduction mowing and chipping. Local agencies, easement owners within the project area, and adjacent	19. Conservation Measure 15 shall be modified to require the Corps and/or City to submit a report that documents all existing or planned future easements, use agreements, or permits within the flood control channel or detention basins prior to prior to initiating Phase 1 vegetation clearing (i.e., after exotic removal and the risk reduction mowing and chipping). The Corps and/or City shall notify the Service of additional easements, use	Contractor, City of Oceanside	Approval of final plans/ specification and final O&M plan	Corps, City of Oceanside

property owners will be notified of the location and use limitations for these areas. These areas will be protected within any easement, use agreement, or permit for actions within or that may affect the flood control project area. If impacts do occur from easements, use agreements, or permits, impacts will be adequately mitigated.	agreements, or permits contemplated in the future within the flood control channel or detention basins, and shall not approve of them without consulting with the Service. The Corps and/or City shall notify the Service immediately when any impacts to habitat to be avoided by construction, operations and maintenance of the flood control channel occur from any easements, use agreements, or permits. Any such impacts shall be offset at a minimum 5:1 ratio as approved by the Service.			
16. Other maintenance activities or actions and corresponding mitigation for those actions within the compensation areas will be documented. As much as possible, the compensation areas will be protected from future anthropogenic disturbances including construction, off-road vehicular use and illegal trespass.	N/A	Corps, City of Oceanside	Approval of final O&M plan	Corps, City of Oceanside
17. For re-vegetation of areas subject to the removal of *Arundo* or subject to temporary disturbance for the long-term operation and maintenance, the following re-vegetation measures will be used in the detention ponds: (1) utilize the City's groundwater map for appropriate plant species selection and maintenance including subsequent watering; (2) non-native species will be eradicated through either removal or foliar spraying as outlined in the Biological Assessment; and (3) monitor the vegetation in the ponds through the construction period, and 5 years thereafter including adjustment of supplemental watering.	N/A	Contractor	Approval of final plans/ specification and final O&M plan	Corps, City of Oceanside

18. The detention ponds that also serve as compensation sites will be allowed to support mature native vegetation suitable to the existing hydrological and ground water conditions. Each year, for 10 consecutive years after the initial construction phase clearing, a multi-agency managing team will convene to examine the progress of the compensation areas and propose management measures likely to retain or improve habitat values in the compensation areas without affecting flow conveyance and other flood control requirements. The team will consist of representatives from the City, Corps, Service, CDFG, RWQCB, other appropriate Federal, State, and local agencies, and may also include local experts. The Corps and the City will be the ultimate authority for approval of any actions.	20. Conservation Measure 18 shall be modified to require concurrence from the Service regarding any proposed measures that may impact native habitat within these areas.	Corps, City of Oceanside	Approval of final O&M plan	Corps, City of Oceanside, USFWS
19. Foraging surveys will be completed for gnatcatchers within the flood control project area in the season following the implementation of Phase 1 vegetation clearing of the long-term operation and maintenance (i.e., phased vegetation clearing and sediment removal) and for the first 7 years of project implementation. A survey report will evaluate the relationship between gnatcatcher breeding or nesting locations in upland areas adjacent to the project area with gnatcatcher habitat quality and use within the river channel.	N/A	Contractor	Approval of final plans/ specification and final O&M plan	Corps
20. The Corps will provide $2 to 5 million, as appropriated by Congress, to an entity mutually agreed upon by the Service and Corps to further the recovery of the vireo and	21. Term and Condition 21 beginning on page 124 of the Amended Final Biological Opinion (2006) is struck out by the Service (USFWS Clarification of Terms and Conditions,	USFWS, Corps	Coordination with USFWS	Corps, USFWS

flycatcher within the San Luis Rey River watershed or northern San Diego County. Of the $2 to 5 million, $20,000 will be provided upon initiating the one-time risk reduction mowing and chipping, with the remainder of the funds distributed to the identified third party entity prior to completion of Phase 1 clearing. However, since the third party entity and the process by which the funds are to be provided have not been identified and agreed upon to date, the Corps and the Service have agreed to work together towards identifying the third party entity and the process. Following the identification and agreement of the third party entity and the establishment of the process by all parties involved, the $2 to 5 million in total of recovery funds ($20,000 + remainder of the $2 to 5 million) will be provided to the third party entity prior to completion of Phase 1 clearing. The recovery funds will be used to enhance/create/acquire habitat for the vireo and flycatcher. The Service will develop the scope of work for how the recovery funds would be used and the Corps will be responsible for providing the recovery funds to the identified and agreed upon entity. If a third party entity and funding mechanism/process cannot be identified, agreed upon, and established by all parties involved, the Corps will provide the $2 to 5 million recovery funds to the Service to administer towards the recovery of the vireo and flycatcher.	May 23, 2006).			
21. Following Phase 1 clearing, a current aerial photo will be acquired to prepare a new topographic map of the project area. This	22. Term and Condition 22 on page 125 of the Amended Final Biological Opinion (2006) is struck out by the Service (USFWS	Corps	Final hydraulic analysis report	Corps

topographic map will be used for two purposes: (1) to identify the current elevation of the channel invert, to ensure the design upper bed elevation limit of the channel invert has not been breached; and, (2) to provide data that would allow the Corps to perform a new hydraulic model to determine whether or not there is a minimum of 53,000 cfs within the flow conveyance zone. The Corps, in coordination with the team, will conduct a new hydraulic model reviewing the assumptions and adjust as possible. The Corps has the final determination regarding the model and the assumptions.	Clarification of Terms and Conditions, May 23, 2006).			
	23. The Corps and City shall ensure the Service retains the right to access and inspect the project site and restoration areas for compliance with the proposed project description and conservation measures as modified in the terms and conditions of this biological opinion, with proper and timely notification to the appropriate Corps/City representatives.	Corps, City of Oceanside	Coordination with USFWS	Corps, City of Oceanside, USFWS
	24. Unless otherwise specified above, the implementation and execution of the preceding terms and conditions shall begin immediately upon the issuance of this biological opinion and shall continue, in earnest, for the life of the project (unless noted elsewhere as "in perpetuity") and until all compensation measures have been fully implemented and executed.	Corps, City of Oceanside	Coordination with USFWS	Corps, City of Oceanside, USFWS
	25. All conservation measures as modified by the term and condition shall be included as	Corps, City of Oceanside	Obtaining applicable permits	Corps, City of Oceanside

	conditions of any and all Corps permits or other authorizations pertaining to the proposed project.			
	26. As the Federal action agency, the Corps is ultimately responsible for the implementation of all preceding terms and conditions in the event of the financial or institutional incapacity of the City or their agents to perform them.	Corps	Approval of final O&M plan	Corps
	27. The City shall manage the San Luis Rey River Flood Control Project in perpetuity. This includes providing a plan and necessary funding to maintain flood control channel as suitable habitat for vireo and flycatcher. Such a program would include at least maintaining the area free of invasives, homeless encampments, off-road vehicle use, and trash. Unless these issues are addressed to the satisfaction of the Service in the Corps' final Operations and Maintenance Plan, a draft management plan shall be provided to the Service for review and comment and a final plan must be approved by the Service prior to initiation of construction impacts.	City of Oceanside	Final O&M plan	Corps, City of Oceanside

Measure **Minimization Measures for Other Environmental Resources**	**Responsible Measure Implementation**	**Completion Requirement**	**Agency Responsible for Verification**
ER-2.1. Excavated sediments shall be moved to other areas within the channel experiencing excessive erosion or scouring. However, this will only be done if it does not contribute to vegetation disturbance. In addition, the relocated sediment shall not increase the need for sediment removal in other parts of the channel, i.e., relocated sediment shall not extend above the original design bottom elevation of the channel. The location of in-channel disposal sites will be determined in the field following topographic surveys and annual site inspections completed under ER-3.2.	Contractor	Approval of final plans/ specification and final O&M plan	Corps, City of Oceanside

Measure **Minimization Measures for Other Environmental Resources**	Responsible Measure Implementation	Completion Requirement	Agency Responsible for Verification
ER-3.1. If a significant rain event occurs during vegetation clearing, activities shall cease, workers and equipment shall be removed from the areas of active stream flow, and downstream flows shall be monitored until the cessation of rain and/or flows no longer present a hazard.	Contractor	Approval of final plans/ specification and final O&M plan	Corps, City of Oceanside
ER-3.2. Regular evaluations (i.e., annual maintenance inspections of flood control structural features, which will be completed by the Corps and the City) will be performed to determine if vegetation clearing or sediment removal are resulting in hydrologic alteration of surface water that, in turn, is resulting in excessive channel incision or other evidence of systemic scour or dewatering of vegetation over the length of the project. The City will also complete a careful evaluation of the occurrence and effect of scouring and/or dewatering on vegetation/habitat in the channel in the season following clearing of rotation 2 (i.e., projected to be 11 years after the initial clearing event), and every 5 years thereafter, in conjunction with the vegetation survey and topographic survey. In the event that excessive channel incision or other evidence of systemic scour of vegetation occurs, the City will consult with the Corps to implement appropriate measures.	Corps, City of Oceanside	Final O&M plan	Corps, City of Oceanside
ER-3.3. The proposed actions must follow Best Management Practices (BMPs) as prescribed under the Stormwater Pollution Prevention Plan (SWPPP). The Corps Environmental Resources Branch (ERB) will be responsible for review and approval of the SWPPP prior to implementation of construction. ERB will also be responsible for incorporating all environmental commitments into the design plans and specifications. Consistent with Federal and State regulations, BMPs shall be implemented to control the erosion of sediments into the water, prevent or contain spills from storage locations or equipment used within or adjacent to the river channel and other actions that may affect water quality. This measure will be implemented as part of the project's CWA Section 402 permit requirements, if applicable. A CWA section 401 water quality certification would also be obtained prior to construction. Measures identified within the certification will be complied with during construction activities.	Contractor	Approval of final plans/ specification and final O&M plan	Corps, City of Oceanside, RWQCB
ER-5.1. To minimize habitat impacts, biomass will be left as mulch to aid nutrient cycling and re-growth of vegetation. The appropriate volume or density should be estimated from litter in unaffected areas, but is generally 1 to 2 inches in depth.	Contractor	Approval of final plans/ specification and final O&M plan	Corps, City of Oceanside

AQ-1.1. The selected contractor shall water the excavation site, storage piles and unpaved roads twice each day of construction; once in the morning and at the end of the construction day; this mitigation is applicable for both construction and future maintenance.	Contractor	Approval of final plans/ specification and final O&M plan	Corps, City of Oceanside
AQ-1.2. Transported material shall be covered to reduce fugitive dust.	Contractor	Approval of final plans/ specification and final O&M plan	Corps, City of Oceanside
AQ-1.3. Limit vehicle speeds to 15 mph maximum within the construction site and maintenance areas (construction and future maintenance), and cease grading and earth movement when wind speeds exceed 15 mph, or as confirmed by SBCAPCD during construction and future maintenance activities.	Contractor	Approval of final plans/ specification and final O&M plan	Corps, City of Oceanside, SBCAPCD
AQ-1.4. The selected contractor shall cover the storage piles to minimize fugitive dust.	Contractor	Approval of final plans/ specification and final O&M plan	Corps, City of Oceanside
AQ-1.5. The construction contractor shall be responsible for obtaining and complying with all applicable permits.	Contractor	Obtaining applicable permit	Corps, City of Oceanside
N-1.1. The project operator shall insure that the contractor maintains proper mufflers on all internal combustion and vehicle engines used in operation and maintenance activities to reduce noise to the maximum feasible extent.	Contractor	Approval of final plans/ specification and final O&M plan	Corps, City of Oceanside
N-1.2. The project operator shall insure that the contractor provide all businesses and residents adjacent to the study area and the haul routes with seven days advance notice of the commencement of vegetation or sediment maintenance activities in the vicinity.	Contractor	Approval of final plans/ specification and final O&M plan	Corps, City of Oceanside
N-1.3. The project operator shall insure that the Contractor establish a toll-free telephone number for dealing with public concerns/ complaints about noise and other project-related issues. The notice issued (refer to Mitigation Measure N-1.2) shall advertise the contact telephone number.	Contractor	Approval of final plans/ specification and final O&M plan	Corps, City of Oceanside
N-1.4. In Reaches 1 and 4, where residences abut the flood control project, ambient noise levels may increase by more than 15 dB over baseline conditions for more than a period of two weeks. In these areas, vegetation clearing and sediment maintenance activities shall be scheduled to proceed as quickly as possible or it shall be scheduled in phases to ensure that the duration of increased noise levels is less than two weeks.	Contractor	Approval of final plans/ specification and final O&M plan	Corps, City of Oceanside

SW-1.1. Vegetation mowing must follow Best Management Practices (BMPs) as prescribed under the SWPPP. Consistent with Federal and State regulations, BMPs shall be implemented to control the erosion of sediments into the water, prevent or contain spills from storage locations or equipment used within or adjacent to the river channel and other actions that may affect water quality. The plan will be implemented during vegetation and sediment management actions and shall be the responsibility of the Corps during the construction phase vegetation and sediment management (phased implementation of Alternative 11) and the City throughout the operation and maintenance phase of Alternative 11. The SWPPP shall cover actions undertaken during the construction phase vegetation and sediment management as well as those undertaken during operation and maintenance. This measure will be implemented as part of Alternative 11's CWA Section 402 permit requirements. The Construction Contractor would prepare the SWPPP, file a Notice of Intent with the State Water Resources Control Board with applicable fees. This Plan shall state that: Construction and maintenance fluids (oils, antifreeze, fuels) shall be stored in closed containers (no open buckets or pans) and disposed of promptly and properly away from the channel to prevent contamination of the site. Refueling of the mowers can be accomplished inside the channel at least 50 feet away from flowing water and with the use of liners. The refueling truck must, at all times, stay on top of the existing levee (not within the channel invert). BMP's will be used. BMPs include such actions as having staged on site, hazardous waste clean-up equipment and spill kits, using the appropriate size and gauge drip pans and absorbent diapers. Spill kits shall be in close proximity to the fuel truck and mowers in case of fuel or other fluid spills. Contractor equipment shall be checked for leaks prior to operation and repaired as necessary. "No-fueling zones" shall be designated on construction plans. Fluids released because of spills, equipment failure (broken hose, punctured tank) or refueling should be immediately controlled, contained, and cleaned-up as per Federal and State regulations. All contaminated materials should be disposed of promptly and properly to prevent contamination of the site. To reduce the potential for spills into the channel during refueling, refueling of portable equipment shall occur on shore. Where that is not possible, barriers shall be placed around the site where the fuel nozzle enters the fuel tank. The barriers shall be such that spills shall be contained and easily cleaned up. Someone shall be present to monitor refueling activities to ensure that spillage from overfilling, nozzle removal, or other action does not occur.	Contractor	Approval of final plans/ specification and final O&M plan	Corps, City of Oceanside, RWQCB

SW-1 2. Actions such as equipment maintenance should not take place within the channel, detention ponds or in areas that directly drain to these locations. The staging area at Benet and River Roads, or any other off-channel staging area that is needed, shall be located as much as possible in areas constructed for this purpose, e.g., paved and bermed lots.	Contractor	Approval of final plans/ specification and final O&M plan	Corps, City of Oceanside
SW-1.3. The impact of vegetation debris potentially depositing downstream could be minimized or avoided by the collection of such debris by the City of Oceanside, the local sponsor, during routine debris collection near the bridges, outlet gates, near the mouth of the river, and on the beaches after significant flow events.	Contractor, City of Oceanside	Approval of final plans/ specification and final O&M plan	Corps, City of Oceanside
B-1. When performing giant reed eradication, the herbicide treatment process will avoid spraying chemicals into the water.	Contractor, City of Oceanside	Approval of final plans/ specification and final O&M plan	Corps, City of Oceanside
B-1a. During the implementation of the giant reed (A. donax) eradication methods (see Section 4.15.4.5 and 4.15.4.6 for discussion and methods), only one herbicide is currently labeled for wetlands use by the EPA; Rodeo®, a trade name formulation of glyphosate, produced by Monsanto Corporation. Glyphosate is a broad-spectrum herbicide which can be used on A. donax, Tamarix ramosissima (salt cedar), and most other monocots and dicots. It has proven very effective against A. donax (Finn and Minnesang 1990; Jackson 1994; USDA Forest Service 1993). Other herbicides might also be used as labels and conditions allow. Monocot-specific chemicals, such as Fusilade-DX® (fluazapop-butyl) and Post® (Sethoxidan), might be particularly useful for treating A. donax in stands with a substantial component of native dicots; however, neither is currently labeled for wetlands use. During the use of the herbicide, spraying will be accomplished in a manner that the spray will not enter into open water adjacent to the San Luis Rey River.	Contractor, City of Oceanside	Approval of final plans/ specification and final O&M plan	Corps, City of Oceanside
B-2a. An herbaceous corridor of flexible, bendable habitat will be left on either side of the open water course.	Contractor, City of Oceanside	Approval of final plans/ specification and final O&M plan	Corps, City of Oceanside
B-2b. During project implementation, an approximate "buffer" of 10 to 15 feet, (width coordinated with CDFG), will be left in place for steelhead shade requirements. However, when this vegetation is no longer bendable or flexible or if woody vegetation (e.g., willows, cottonwoods, mulefat) becomes greater than 0.5-inches dbh, those areas within the 10 to 15 foot swath would be mowed and chipped and allowed to restart their growth process. It is anticipated that mowing of this area will need to occur during project implementation as much of the vegetation extant within the channel exceeds the 0.5 inch dbh limit for the annually maintained area.	Contractor, City of Oceanside	Approval of final plans/ specification and final O&M plan	Corps, City of Oceanside

B-2c. Freshwater marsh vegetation would be avoided to the extent practicable.	Contractor, City of Oceanside	Approval of final plans/ specification and final O&M plan	Corps, City of Oceanside
B-2d. No trees will remain within the 230-foot annually maintained vegetation management area. Vegetation management is formulated to have up to 10-year old trees (willows and cottonwoods) in the two rotationally managed corridors (Rotations 1 and 2); trees will be allowed to grow unabated within the unmaintained corridor and in the compensation/preservation areas.	Contractor, City of Oceanside	Approval of final plans/ specification and final O&M plan	Corps, City of Oceanside
B-3a. While steelhead typically migrate upstream between September to March and the Proposed Action is scheduled to occur between September and March each year, the inclusion of a 10 to 15-ft herbaceous corridor within maintained areas (subject to vegetation and sediment management) would not result in affects to steelhead migration.	Contractor, City of Oceanside	Approval of final plans/ specification and final O&M plan	Corps, City of Oceanside
B-3b. The vegetation management of mowing and chipping is scheduled to take place during the fall and early winter seasons when the river is experiencing both high and low flow events, in order to avoid least Bell's vireo and southwestern willow flycatcher nesting seasons. During the migration period, the river will flow high when there are storm events and then once the water has passed the area, the river will return to its "normal" water flow conveyance and will run low. Once the river returns to a low flow, vegetation management actions would continue.	Contractor, City of Oceanside	Approval of final plans/ specification and final O&M plan	Corps, City of Oceanside
B-3c. Where necessary, equipment will need to cross the open water and braided areas in several areas to get to the other side of the channel. Qualified and experience biologists will reconnoiter for steelhead immediately prior to the equipment crossing.	Contractor, City of Oceanside	Approval of final plans/ specification and final O&M plan	Corps, City of Oceanside
B-4. A presence/absent protocol survey for O. mykiss steelhead would proceed prior to any vegetation management (mowing) for implementation of Phase 2, Phase 3, and the annual maintenance (early September). The current CDFG O. mykiss survey (2006) within the project area would suffice for the survey prior to Phase 1 implementation of vegetation management. Reconnoiter of the action area would consist of present/absent of juveniles which may be using the area for rearing.	Corps , City of Oceanside	Approval of final plans/ specification and final O&M plan	Corps, City of Oceanside

PS-2.1. The City of Oceanside shall provide appropriate notice via signs, newspapers, and direct communication to pedestrian's potential users of the channel and adjacent areas one week prior to and during vegetation clearing and sediment removal activities. The City shall restrict public access to active work zones.	City of Oceanside	Coordination with City of Oceanside, final O&M plan	Corps, City of Oceanside
PS-2.2. The O&M Plan shall identify a communication protocol and criteria for determining work schedules based on daily meteorological conditions.	Corps	Approval of final O&M plan	Corps
PS-2.3. The contractor shall employ appropriate signaling and signage to accommodate potential interruptions or detours in existing traffic flows. These measures must be defined in the Traffic Control Plan (see Section 5.9.5).	Contractor	Approval of final plans/ specification and final O&M plan	Corps, City of Oceanside
PS-2.4. Prior to the implementation of Alternative 11, the City of Oceanside shall notify relevant fire, police and other emergency service agencies of the proposed work, areas of potential congestion, and traffic management methods to be used to ensure access at all times.	City of Oceanside	Coordination with City of Oceanside, final O&M plan	Corps, City of Oceanside
LUR-2.1. Maintenance activities likely to create noise and dust shall be restricted to the hours of 8 a.m. to 5 p.m. daily, and shall be preceded by notification of nearby residences. The notifications shall describe the character of the activities and their duration. This mitigation measure is designed to enable local residents to modify their activities to reduce potential impacts.	Contractor	Approval of final plans/ specification and final O&M plan	Corps, City of Oceanside
REC-3.1. In the event of any temporary levee access or other trail closure appropriate signs will be posted to ensure safe access and, or, bypass of the levee reaches affected.	Contractor	Approval of final plans/ specification and final O&M plan	Corps, City of Oceanside
T-3.1. Haul routes shall be designed to minimize distances to the work site and avoid heavily congested areas or large residential communities. Multiple haul routes will be used to reach the beach area through the City and alternate scheduling of hauling times and frequencies will be incorporated into the Traffic Control Plan (see Mitigation Measure T-3.2). All existing access ramps into the channel shall potentially be used to reduce traffic loads along the haul routes.	Contractor	Approval of final plans/ specification and final O&M plan	Corps, City of Oceanside
T-3.2. The contractor will submit a Traffic Control Plan to the City of Oceanside's Public Works Department for review and approval that demonstrates practices and safety precautions designed to minimize temporary traffic impacts.	Contractor	Approval of final plans/ specification and final O&M plan	Corps, City of Oceanside

T-3.3. All work and staging areas will be clearly marked and appropriately guarded to ensure public safety.	Contractor	Approval of final plans/ specification and final O&M plan	Corps, City of Oceanside
T-3.4. If lane closures are needed, only one lane of traffic will be closed at a time, and nearby roads will not be closed simultaneously.	Contractor	Approval of final plans/ specification and final O&M plan	Corps, City of Oceanside
T-4.1. If damage to roads and sidewalks occurs, the contractor shall coordinate repairs with the affected public agencies to ensure that any impacts to area roads are adequately repaired. Roads and sidewalks disturbed by construction activities or construction vehicles shall be properly restored to ensure long-term protection of road and sidewalk surfaces. Out-of-channel staging areas shall be cleaned up.	Contractor	Approval of final plans/ specification and final O&M plan	Corps, City of Oceanside
PSU-1.1. Prior to the implementation of Alternative 11, the City will notify relevant fire, police and other emergency service agencies of the proposed work, areas of potential congestion, and traffic management methods to be used to ensure access at all times.	City of Oceanside	Coordination with City of Oceanside, final O&M plan	Corps, City of Oceanside
A-1.1. Following the deposit of sediments removed from the channel, the project operator shall: (1) separate or remove any rubbish or debris in the channel prior to hauling sediments (this remaining portion will be disposed in a solid waste landfill with vegetation debris); and (2) grade these deposits to return the beach to its original profile and form.	Contractor	Approval of final plans/ specification and final O&M plan	Corps, City of Oceanside

ATTACHMENT 7

MEMORANDUM OF RECORD

1. U.S. Army Corps of Engineers, Memorandum for the Record, dated January 21, 2002.

DEPARTMENT OF THE ARMY
LOS ANGELES DISTRICT, CORPS OF ENGINEERS
P.O BOX 532711
LOS ANGELES, CALIFORNIA 90053-2325

REPLY TO

2008 FEB 15 A 8:39

401 Cert - M Porter

07C-019

CESPL-RG-SD/CESPL-PD-RN

21 January 2002
(Revised Feb. 2008)

MEMORANDUM FOR THE RECORD

SUBJECT: Regulatory Jurisdictional Determination (JD) and Impacts/Mitigation Analysis of Waters of the United States/Wetlands within the San Luis Rey River (SLRR) Corps Federal Project Area and Impacts from the Corps Operations and Maintenance (O&M) Permit Activities as regulated under Section 404 of the Clean Water Act (CWA) and the SLRR Federal authorization (Public Law 89-298, Stat. 1073).

1. PURPOSE: To document the delineation of the existing waters of the United States (including jurisdictional wetlands) and the impacts/mitigation to these waters from the Corps Federal Project and the Corps SLRR O&M permit. The delineation was done in conjunction with the Hydro-geomorphic Functional Assessment (HGM) report prepared by EARSI, PCR, and Aspen Environmental, consultants for the Corps Planning Division in 2002 with final review by Dr. Mark Sudol in 2002. This document makes reference to the Corps Draft Environmental Statement as a part of the document. Overall, Regulatory supports the Corps position of a sufficiently wide maintained or mowed strip in the channel with a resulting higher flood capacity and sediment transport capability that may affect sediment removal and the massive functional loss of sediment removal activities but must maintain a high value riparian wetlands and low flow wetlands area throughout the project reach in conjunction with high value vireo/flycatcher habitat. Please note that this analysis was revised in February 2008 due to new alternatives formulated, changes in the 1987 wetlands delineation manual (2007 Arid Supplement), the proposed Mitigation Rule of 2007 and RGL 01-1, and changes in the definition of discharge in fill under Section 404 of the Clean Water Act (33 CFR 323.2).

2. a. SUMMARY: The Corps Regulatory Branch has prepared a delineation of existing waters of the United States (includes jurisdictional wetlands) within the Federal Project and the approximate impacts/mitigation of the Corps Federal Project O&M plan to the Federal Project area within the San Luis Rey River. This delineation is a landscape review of jurisdictional wetland/waters of the U.S. conditions and review of impacts and mitigation both proposed. Due to cost limitations and constraints on the project manager's time the delineation did not follow the routine or comprehensive determinations per the 1987 Corps of Engineers Wetlands Delineation Manual. Instead the Regulatory Branch Chief Mark Sudol and the Corps project manager Robert Smith utilized the HGM report transects and other hydrologic data (photos of floods, HEC-RAS, etc.) as the required data sheets to roughly delineate the approximate boundaries of the jurisdictional wetlands and waters of the United States. The Corps regulatory position regarding

this delineation is that the majority of the areas within the SLRR Federal Project area are legally classified as jurisdictional waters of the U.S. that function as either highly valuable jurisdictional wetlands areas or equally high value willow riparian vegetated waters of the U.S. or as high value riparian buffer areas to adjacent wetlands. Thereby the Corps boundaries of waters of the U.S. and the CDFG Streambed Alteration Agreement (SAA) are close to agreement in some areas insofar as jurisdictional boundaries.

The exact boundaries of the jurisdictional wetlands are very close to the boundaries of waters of the U.S. since the entire channel area has saturated soils for greater than 2 weeks and has numerous hydrologic and hydric soils indicators such as trash rack and obligate plant species throughout the project area. From Douglas Drive to the Pacific Ocean there is a high groundwater table that saturates the channel and thereby creates a line where jurisdictional wetland hydrology is assured. Regulatory did include the SLRR basins within the mitigation summary as well as certain bench areas within the levees that function as high value wetlands/waters/buffers. Regulatory has been involved with the O&M permit with the Corps Planning Division during the entire Federal project process and has been working with them, the agencies, and the City to develop an O&M alternative that would avoid and minimize impacts. Currently Regulatory is satisfied that the impacts of mowing are not adverse but that sediment removal activities could be a major functional loss to the wetlands and riparian areas of the SLRR. The Corps selected a mowed sediment removal alignment that avoided, to the extent practicable, occupied listed species habitat and high value wetlands to reduce sediment removal activities. The impacts of sediment removal could be extensively degrading to the wetlands base of the San Luis Rey River with major functional losses to wetlands. However, specific criteria or triggers for sediment removal have been developed and defined in the Hydraulic Report (Appendix C of the PADD/SEIS/EIR). The need for sediment management will be determined based on those areas where the average bed elevation, as determined over a 100-foot interval, exceeds the upper bed limit by more than 0.5 feet. Under these specifications, it is likely that sediment management would be required only relatively infrequently on average over the life of the project, and only along specific segments or reaches of the project length rather than along the entire length.

Overall the Corps has created, restored, and enhanced, since construction of the project in 1994, 520 acres of high value wetlands/waters/buffers within the SLRR project area that when combined with the additional 46 acres of offsite mitigation proposed per the CESA permit yields almost 566 acres of wetlands/waters/buffer mitigation areas. Given the proposed O&M impacts of 174 acres, there is a net gain of high value riparian wetland/waters/buffer areas. Therefore there is no net loss of wetlands/waters/buffers acreage or adverse loss of wetland functions but a net gain. Also the Corps has adopted a mowing strategy that will minimize impacts to: 1) listed species, 2) high value riparian and low growth wetlands, 3) sediment removal activities, and 4) potential for catastrophic flood damages and resultant catastrophic water quality impacts.

The total original project construction impacts, to include operation and maintenance, were 161 acres of waters/wetlands that existed at the time, which the Corps was required to mitigate per the USFWS 1987 Biological Opinion (BO). The original authorized O&M plan would have maintained an area of approximately 259 acres within the flow conveyance zone that would allow vegetation 0-5 years of age. However, the original authorized O&M plan was not implemented due to Endangered Species Act issues. Because the original authorized O&M plan was not implemented, vegetation that was managed by the Corps outside the flow conveyance zone matured and subsequently established in the 400-foot wide flow conveyance zone, which resulted in an additional temporal gain in riparian/wetland habitat above what existed prior to construction. To avoid and minimize impacts to the listed species and their habitat, the O&M plan was revised to accommodate additional riparian/wetland habitat within the flow conveyance zone. This modified O&M plan (Alternative 11), which occurs within a smaller overall footprint than the original O&M plan, would result in 174 acres of impacts to existing vegetation within the flow conveyance zone. These acres occur within areas that were previously addressed as project impacts.

b. METHODOLOGY: The Draft Environmental Impact Statement (DEIS) outlines vegetation types that are freshwater/alkali marsh, open water, sand bar, Giant Reed/Arundo, and willow riparian that all function both as jurisdictional wetlands and/or high value waters of the U.S. The DEIS and the Biological Assessment were used for this JD but did not provide a sound methodology for delineating and assessing impacts to waters of the U.S. The formulation of actual field data sheets would require more funds to comprehensively delineate a more precise boundary of the jurisdictional wetland areas and Regulatory has used a more aerial landscape approach to draw in rough boundaries of the jurisdictional wetlands areas based on the HGM report aerials and transects.

c. DELINEATION: The Corps has completed a final HGM analysis of the jurisdictional wetlands and the field work for the delineation was done simultaneously with the HGM field work by several regulators in conjunction with Dr. Mark Sudol (now HQ Regulatory chief), Aspen Environmental, Environmental & Regulatory Specialists, PCR consultants, and several graduate students from UCLA in December, 2000. The data was collected at 21 transects that were also used for the HGM analysis which were then correlated with Stations of the Corps Federal Project. The Corps utilized a CD ROM disk that compiled the HGM data along with the transect data. No data sheets were recorded as the HGM data sheets sufficed to document presence of hydric soils, hydrophytic vegetation, and hydrology indicators. The Corps has compiled the amount of jurisdictional waters for each ecological reach and has compiled subsections of each reach by Station.

The delineation that follows is a station by station analysis of each of the ecological reaches in the HGM report. The actual impacts analysis is based on the alternatives analysis in the DEIS. The channel project has a 400 ft width that was used as the delineation/impact area from College Blvd. to the Pacific Ocean and the area for the jurisdictional determination. Jurisdictional wetlands require three parameters to be met that include the presence of hydrophytic vegetation, hydric soils, and hydrology.

In regards to hydrophytic vegetation the dominant vegetation species include willows, mulefat, typha, cattails, tules, and various herbaceous plants and sedges that are all hydrophytic wetland vegetation. The majority of the areas within the Federal project are overgrown with these species. The Corps impacts analysis does subtract out areas such as sandbars devoid of hydrophytic vegetation, invasive plants, open water, and avoided freshwater marsh in the low flow. The hydric soils determination was based on a review of the soils present in the SLRR channel shown in the DEIS under Table 3-1 and the HGM transects which documented areas that had debris rack and obligate wetland plant species. Furthermore the Corps determined that the majority of the SLRR channel has been saturated for 2 weeks after several storm events and had some hydric soil indicaters like mottles and gleyed soils. The majority of the soils did show signs of saturation throughout the project area and were actually saturated from Douglas Rd. to Benet Rd. with groundwater near the surface and a small perennial low-flow open water channel.

The Corps also documented hydrology indicators such as debris rack, scour marks and other Ordinary High Water Mark/hydrology indicators from College Blvd. to the downstream end of the project area and these are shown in the backup data to the HGM report. Also the Corps had direct photographic evidence and aerials to substantiate the flows went from levee to levee under ordinary storm conditions. High groundwater and saturated soils at the surface below Douglas Drive to the downstream end of the project were documented on every site visit. Also firsthand witnessing of storm events has correlated with the hydrology indicators. Additionally, testimony from Corps construction inspectors and the City have supported the fact the SLRR channel system is a leveed channel system that completely saturates during most large storm seasons throughout the majority of the channel. Overall the Corps has determined that the majority of the SLRR channel is jurisdictional wetlands or waters of the U.S. but the table below does exclude certain areas where only waters of the U.S. were present without jurisdictional wetlands.

It should be recognized that the San Luis Rey River Federal project area is a highly dynamic and changing project area. The channel bed may be substantially incising in some areas and aggregating in other areas and the sedimentation rates may change as upstream changes and build-out occur which could reduce sedimentation and increase incision. Once the Corps establishes a low flow mowed maintained strip in the channel then the channel geomorphology, hydrology, soils, and vegetation may also change and the area where we found jurisdictional wetlands vegetation may change. Also if the City begins to recharge the adjacent SLRR basins then

2/25/2008

the groundwater level may rise and the amount of gleyed and saturated soils will increase. The current hydric soils are young hydric soils with newly gleyed-soil areas below Douglas Drive to the Pacific Ocean. Regulatory will be monitoring the channel both during and after the final Corps sediment removal and mowing have been completed under the Corps Federal construction project and may adjust the jurisdictional wetlands boundaries if substantial changes occur. The 15 ft. access strip to be maintained on the channel side of each levee may be established as an O&M zone if the entire channel endures an extreme event that scours the entire channel from levee to levee. Overall Regulatory shall ensure that impacts to the functions of high value jurisdictional wetlands and riparian areas in the SLRR project area are avoided to the extent practicable with benign sediment removal activities. A reassessment of jurisdictional wetlands areas in conjunction with endangered species surveys may be an annual requirement or at least after large storm events have altered the channel. Regulatory shall incorporate needed monitoring and constraints on sediment removal activities with the agencies and the City in accordance with the adaptive habitat management plan to fully maximize the wildlife, flood control, groundwater recharge, and water quality wetland functions of the San Luis Rey River.

d. IMPACTS ANALYSIS: Regarding the impacts analysis to the wetlands areas the majority of the impacts are due to mowing that is a regulated as a discharge of fill under Section 404 of the Clean Water Act insofar as where mowing creates a discharge of wood chips. Thereby Regulatory did not classify mowing as an impact where a discharge of fill did not occur. Mowing of some areas like mulefat scrub and unvegetated sandbar did not raise the bottom elevation of the substrate and was not considered a discharge of fill. Mowing of riparian and Arundo areas would create a discharge of wood chips and would raise the substrate bottom and would constitute a discharge of fill. Sediment removal as an impact that would occur in maintained areas due to deposition and scour activities would require re-contouring, mechanized land-clearing, and stockpiling in jurisdictional areas that would be regulated under Section 404 of the Clean Water Act. These areas of potential sediment removal /recon touring/infilling activities is unknown but could range from the entire maintain or mowed area after an extreme storm event to just small activities after smaller storm events. The acreage of the maintained or mowed area is tabulated in the DEIS, however, under the criteria for sediment removal, it is likely that sediment management would be required only relatively infrequently on average over the life of the project, only along specific segments or reaches of the project length rather than along the entire length, and will be subject to future storm events. Regulatory has sought throughout the process to minimize the massive functional losses of sediment manipulation activities by the use of mowing; this is substantiated throughout the HGM analysis done in 2001 by Dr. Sudol. Preserving the root mass of wetlands plants by mowing instead of complete clearing will in the long run show great functional gains to the SLRR system.

Specific impacts of the proposed O&M project (174 acres) are totaled in Table 1 (by reach). Please note that the impacts to wetlands shown in the Section 404(b)(1) alternatives was

233 acres but subsequent to the Section 404(b)(1) alternatives analysis Regulatory has reduced the impacts even more due to the subtraction of the following impacts areas from the wetlands base: 1) open water, 2) freshwater marsh avoidance in the low flow channel, and 3) sandbar areas. Subtracting out these areas yields 202 acres of impacts to wetlands. Additionally the Corps has determined that the mowing of 28 acres of thinly dispersed mulefat scrub in sandbar areas does not constitute a discharge of wood chips and does not substantially raise the bottom elevation of the substrate and thereby does not constitute a discharge of fill per 33 CFR 323.2. Subtracting out the 28 acres of mowed thinly dispersed mulefat scrub from the wetland impacts leaves 174 acres of impacts to jurisdictional wetlands/waters/buffer areas. Also note that the potential adverse water quality impacts (eutrophication and structural impacts to plants) of mowing of the SLRR and the discharge of wood chips and mulch into the SLRR is mitigated by the City's agreement to remove woody debris near the bridges, outlet gates, near mouth of river, and on Oceanside beaches and the proposed restoration and preservation of riparian mitigation areas throughout the Federal Project.

3. MITIGATION ANALYSIS: Overall the Corps has created, restored, and enhanced, since construction of the project in 1994, over 520 acres of existing high value wetlands/waters/riparian buffers within the SLRR project area that when combined with the additional 46 acres of offsite mitigation proposed per the CESA permit yields almost 566 acres of wetlands/waters/buffer mitigation areas that are existing and proposed. Table 2 offers a breakdown of the mitigation. The Corps has created Compensation Areas per the 1987 USFWS BO that will meet the mitigation requirements of the California Department of Fish and Game Streambed Alteration Agreement and that also can be used to mitigate for future O&M impacts to wetlands/waters of the U.S. as follows: 1) Wetlands/waters/buffer mitigation areas created outside the 400 ft wide O&M area and Wetlands shown as being restored/preserved as Unmaintained areas within the 400 ft wide O&M area and, 2) Mitigation areas within adjacent ponds. Furthermore the CESA permit has required that the Corps/City provide another 46 acres of offsite mitigation that shall be wetlands/waters/buffer areas for listed species mitigation. Also the Corps wishes to acknowledge that 46 acres of rotational riparian wetland areas to be mowed every ten years should be acknowledged as a temporal gain in wetlands with temporal growth in between 10 year mowing cycles that shall be used to sustain listed species with variable maturity habitat.

Consequently, the Corps has mitigated both the impacts of O&M and construction with almost 566 acres of mitigation (does not include 46 acres of rotational temporal gains for mowed strips every 10 years). The new Mitigation Rule proposed in December 2007 and Regulatory Guidance Letter No. 01-1 allows for the Corps to use wetlands, riparian waters, and upland riparian buffer areas as mitigation for achieving functional gains in the aquatic ecosystem; the SLLR project makes use of all three of these mitigation components and therefore does not represent a net loss of wetlands, achieves a net gain of wetlands/waters of the U.S/buffer areas, and substantially restores and creates additional wetlands within the SLRR.

4. This jurisdictional determination and impacts analysis was prepared by Robert Revo Smith Jr., P.E., Regulatory Branch and was reviewed by Dr. Mark Sudol, the Regulatory Branch Chief at the time of the original JD. Also the revised analysis was reviewed by Planning Division in February 2008 for accuracy with the DEIS.

2/29/2008

Table 1 - Jurisdictional Determination of Waters of the U.S./Jurisdictional wetlands for the Federal San Luis Rey O&M Permit with an Analysis of Impacts due to Sediment Removal Activities (shown as an acreage range per station by station reach)

Station	Waters of the US (acres)	Wetlands (acres)	Impacts to Waters of US Alt. 2 (acres)	Impacts to Waters of US Alt. 10 (acres)	Impacts to Waters of US Alt. 11 (acres)
College					
374+00	13	11.8	1-11.8	1-8.85	1-8.85
361+00	11.9	11.9	1-11.9	1-8.93	1-8.93
351+20	9	9	1-9	1-6.75	1-6.75
332+50	17.2	17.2	1-17.2	1-12.9	1-12.9
324+50	7.35	7.35	1-7.35	1-5.52	1-5.52
301+00	21.58	20.58	1-20.58	1-15.43	1-15.43
Douglas	6.12	6.12	1-6.12	1-4.59	1-4.59
284+50	8.57	8.57	1-8.57	1-6.42	1-6.42
274+80	8.9	8.9	1-8.9	1-6.68	1-6.68
266+50	7.62	7.62	1-7.62	1-5.71	1-5.71
254+80	10.74	10.74	1-10.74	1-8.05	1-8.05
247+60	6.61	6.61	1-6.61	1-4.96	1-4.96
236+80	9.91	9.91	1-9.91	1-7.43	1-7.43
223+80	14.92	13.29	1-13.29	1-9.96	1-9.96
200+00	36.42	22.26	1-22.26	1-16.7	1-16.7
189+80	18.74	16	1-16	1-12	1-12
Fousatt	14.6	14.6	1-14.6	1-10.95	1-10.95
177+80	3.8	3.8	1-3.8	1-2.85	1-2.85
165+20	14.47	14.47	1-14.47	1-10.85	1-10.85
154+00	12.8	10.96	1-10.96	1-8.22	1-8.22
148+60	6.2	6.2	1-6.2	1-4.65	1-4.65
Benet	13.78	13.78	1-13.78	1-10.33	1-10.33
112+00	26.4	26.4	1-26.4	1-19.8	1-19.8
98+00	21.44	21.44	1-21.44	1-16.08	1-16.08
Totals	317.07	265	1-265acres (waters of US)	1- 174acres (waters of US)	1-174 acres (waters of US)

Table 2 – Regulatory Mitigation Analysis of the SLRR (Acres)

Mitigation Type/Description	Wetlands/Riparian Buffer Areas	Waters of the US (Waters)
Original Riparian Areas within 400 ft O&M area (temporal gain since 1994 to 2008)	225	8
Proposed Unmaintained Area within 400 ft. wide O&M area and Mitigation Areas adj to 400 ft. wide O&M area	185	
Detention Ponds	110	
Offsite Mitigation Area for CESA permit	46	
Totals	566	8
GrandTotal Wetlands/Waters/Buffers	574	