

INDIVIDUAL BIOLOGICAL ASSESSMENT REPORT

Site Name/Facility:	Auburn Creek Channel
Master Program Map No.:	70 and 76
Date:	March 7, 2018
Biologist Name/Cell Phone No.:	Amy Mattson / 619-980-6597
	Jasmine Bakker / 619-708-5990

Instructions: This form must be completed for each storm water facility identified in the Annual Maintenance Needs Assessment report and prior to commencing any maintenance activity on the facility. The Existing Conditions information shall be collected prior to preparation of the Individual Maintenance Plan (IMP) to assist in developing the IMP. The remaining sections shall be completed after the IMP has been prepared. Attach additional sheets as needed.

EXISTING CONDITIONS

The City of San Diego (City) has developed the Master Storm Water System Maintenance Program (Master Maintenance Program [MMP]; City 2011a) to govern channel operation and maintenance activities in an efficient, economic, environmentally, and aesthetically acceptable manner to provide flood control for the protection of life and property. This document provides a summary of the Individual Biological Assessment (IBA) for proposed maintenance activities within the Auburn Creek Channel (Maps 70 and 76). The IBA is prepared to comply with the MMP's Programmatic Environmental Impact Report (PEIR; City 2011b). Map numbers correspond to those contained in the MMP.

The IBA procedures under the MMP provide the guidelines for a site-specific inspection of the proposed maintenance activity site including access routes (i.e., loading areas), and temporary spoils storage and staging areas. A qualified biologist determines whether or not sensitive biological resources could be affected by the proposed maintenance and potential ways to avoid impacts in accordance with the measures identified in the Mitigation, Monitoring and Reporting Program (MMRP; Attachment 1) of the PEIR and the MMP protocols. This IBA provides a summary of the biological resources associated with the storm water facility, quantification of impacts to sensitive biological resources, and the nature of mitigation measures required to mitigate for those impacts, if any found.

Survey Methods and Date(s)

Prior to performing field surveys, HELIX Environmental Planning, Inc. (HELIX) conducted a review of existing project documentation and permits as part of this IBA. Document review included the MMP, PEIR (City 2011b), and Appendices.

Potential occurrence of special-status species within the project site was determined by a habitat suitability assessment, a review of records from the California Natural Diversity Database (CNDDB), species occurrence data from the U.S. Fish and Wildlife Service (USFWS) Carlsbad Office's Listing of Multiple Species Database, and the California Native Plant Society rare plant online inventory. A half-mile radius was used to specifically assess the potential for sensitive species for the Auburn Creek Channel maintenance areas.

Upon completion of the original research, HELIX conducted a biological survey and site assessment, including a California Rapid Assessment Method (CRAM) of wetland conditions, in a portion of the Auburn Creek Channel located between the Maps 70 and 76 maintenance areas on February 6, 2017. Vegetation communities were mapped in accordance with the City's Biology Guidelines (City 2012) and following classifications described by Holland (1986). Data collected during surveys included comprehensive species lists, habitat suitability assessments for sensitive species, and data for completion of a CRAM following the methods outlined in the User's Manual: *California Rapid Assessment Method for Wetlands and Riparian Areas v. 6.1* (California Wetlands Monitoring Workgroup [CWMW] 2013) and other training materials located on the CRAM website (www.cramwetlands.org). Vegetation communities and sensitive species were mapped on a 100-scale (1 inch = 100 feet) map with a 2014 aerial photograph base map. Representative photographs were taken during the survey and are provided in this report. Plants were identified according to The Jepson Manual: Vascular Plants of California (Baldwin et al. 2012).

Project Location and Description

The purpose of the project is to maintain the existing storm water facilities by restoring the original design capacity to provide public safety and protection of property. The City is proposing to maintain the Auburn Creek channel through the removal of trash, debris, vegetation, and accumulated sediment.

To facilitate the Individual Hydrology and Hydraulic Assessment (IHHA) prepared for the maintenance (Rick Engineering 2017a), the Auburn Creek channel was subdivided into five separate “reaches”. This IBA evaluates portions of two reaches (Reaches 1 and 5), including staging and access areas, where maintenance is currently proposed by the City. Reach 1 occurs in Map 76, and Reach 5 is in Map 70.

The Auburn Creek channel is located in the Fairmount Park and Ridgeview-Webster Communities, south of Home Avenue and between Spillman Drive and 46th Street (Figure 1). The channel runs through an urban area and crosses under Interstate 805 (Figures 2 and 3). The channel is located in un-sectioned lands in Township 17 South, Range 2 West on the National City U.S. Geological Survey (USGS) 7.5-minute quadrangle map (Figure 2).

The channel, staging area, and a portion of the access area in Map 70 are zoned IL-3-1 (Light Industry). The remainder of the access area in Map 70 is zoned RM-1-1 (Residential – multiple units) or OR-1-1 (Open Space-Residential), at the southwestern edge of the maintenance area. The eastern end of the channel in Map 76 is zoned RS-1-7 (Residential – multiple units) and the middle portion is zoned RS-1-1 (Residential – multiple units). The remaining western end of the channel, staging, and access areas are zoned MCCPD-MR-3000 (Mid-city Communities Planned District: MR-3000). According to the Federal Emergency Management Agency, the staging area and the majority of the channel in Map 70 is within the 100-year floodplain. The northwestern portion of the channel occurs within the 500-year floodplain, and the remainder is in the 100-year floodway. The access area for Map 70 occurs within the 100-year floodplain and the 100-year floodway. The channel, access area, and staging area in Map 76 are within the 500-year floodplain.

The channel is within the Pueblo San Diego Watershed, Pueblo San Diego Hydrologic Unit, and San Diego Mesa Hydrologic Area. The site is not located within the City’s Multiple Species Conservation Program’s (MSCP) Multi-Habitat Planning Area (MHPA); however, the MHPA is located 95 feet southeast of Map 70 (Figure 4). The maintenance areas are located outside of the Coastal Zone.

A more detailed discussion of the channel segments is provided below.

Auburn Creek, Map 70 (Reach 5)

The Auburn Creek channel within Map 70 is located south of Home Avenue, east of Interstate 805, and west of 46th Street in the Ridgeview-Webster community. The channel runs between a commercial development to the north and undeveloped land and residential development to the south. It is channelized with a trapezoidal, earthen-bottom and concrete-lined banks. Map 70 has dimensions of 12 feet wide at the bottom, 30 feet wide at the top, and 5 feet deep. The channel bottom is largely unvegetated, made up of accumulated sediment, and is bounded by ornamental vegetation. This segment had been vegetated with patches of riparian scrub and giant reed (*Arundo donax*) prior to emergency maintenance in 2016. Reach 5 receives storm flow from an underground portion of the channel to the east, and flows into Reach 4 (west of Fairmount Avenue). The length of Reach 5 is approximately 274 feet.

Auburn Creek, Map 76 (Reach 1)

The Auburn Creek channel within Map 76 is located south of Home Avenue, occurring for approximately 160 feet north and east of Spillman Drive. The channel lies to the south of commercial and residential development. It is channelized with a trapezoidal, earthen bottom. One of the banks is concrete-lined. Map 76 has dimensions of 15 feet wide at the bottom, 35 feet wide at the top, and 6 feet deep. The channel bottom is largely unvegetated and made up of accumulated sediment. The northern bank contains primarily invasive wetland vegetation, while the southern bank has upland vegetation. Reach 1 receives storm flow from Reach 2 to the east, and flows through a culvert under Spillman Drive, whereupon it continues to flow beneath residential development.

Biological Resources: **Stream Type:** Perennial ☐ Intermittent ☐ Ephemeral ☒

Stream type designations are based on USGS topographical map stream designations and field visit review of the channels. Auburn Creek is shown on the USGS National City quadrangle map. Both channels are presumed to have seasonal sources of water from urban runoff.

Vegetation:

For purposes of this IBA, only vegetation or land covers within the proposed maintenance areas, including associated work areas (i.e., access and staging areas), are described below. The vegetation category “disturbed wetland (arundo-dominated)” (class 65100 in Oberbauer’s 2008 revision of Holland [1986]) was mapped within this maintenance area to distinguish stands of an invasive species, giant reed (*Arundo donax*). One of the purposes of this vegetation category is to identify invasive wetland vegetation that is exempt from mitigation requirements under condition 9e of the Master Coastal Development Permit (CDP), which is applied to all storm water facility maintenance per requirement 15 of Site Development Permit (SDP) 1134892 related to the MMP.

A total of six vegetation communities/land cover types were identified during the initial biological survey and site assessment on February 6, 2017: natural flood channel/streambed, disturbed wetland (arundo-dominated), disturbed chaparral, ornamental, disturbed land, and developed land (the sides of the concrete channel, parking lot, and roads) (Table 1; Figures 5a and 5b). See PEIR Appendix D.1 (Biological Resources Report) for general descriptions of vegetation communities/land cover types (City 2011b). A list of plant species observed during the February 6, 2017 survey is provided as Attachment 2.

Table 1
EXISTING VEGETATION COMMUNITIES (acre[s])¹

Map/Reach ²	Channel Type	WETLANDS ³			NFC ³	TOTAL
		AR				
Auburn Creek Map 70 (Reach 5)	Earthen-bottom	0			0.11	0.11
Auburn Creek Map 76 (Reach 1)	Earthen-bottom	<0.01			0.06	0.06
Wetlands Total		<0.01				0.17
Map/Reach ²	UPLANDS ³				TOTAL	
	Tier IIIA	Tier IV				
	CHAP	ORN	DL	DEV		
Auburn Creek Map 70 (Reach 5)		0	0.08	0	0.24	0.32
Auburn Creek Map 76 (Reach 1)		0.01	0.01	0.04	0	0.06
Uplands Total		0.01	0.09	0.04	0.24	0.38
GRAND TOTAL						0.55

¹Acreages are rounded to the nearest 0.01 acre

²Map Numbers from the City’s MMP (2011a)

³Habitat acronyms: AR=disturbed wetland (arundo-dominated), CHAP=disturbed chaparral, DEV=developed land, DL=disturbed land, NFC=natural flood channel/streambed, ORN=ornamental

Emergency maintenance in 2016 removed vegetation and sediment within Reach 5 of Map 70. Vegetation communities and land cover types identified within the 2016 emergency maintenance area during the November 11, 2015 biological survey consisted of 0.06 acre of riparian scrub (disturbed mule fat scrub and southern willow scrub), 0.01 acre of disturbed wetland (Arundo-dominated), 0.04 acre of natural flood channel, and 0.003 acre of disturbed land. As a condition of approval of the emergency maintenance, the City agreed to compensate for the loss of wetlands. Once this obligation is fulfilled, subsequent mitigation would not be required.

Auburn Creek, Map 70 (Reach 5)

Reach 5 has earthen-bottom and primarily concrete-lined banks, with a small section of one bank being partly earthen with rip-rap. The maintenance boundary is 0.24-acre composed of natural flood channel/streambed, ornamental, and developed. The staging and access areas, totaling 0.19 acre, are located just outside of Reach 5 and consist of a 0.15-acre access area between Home Avenue and the channel, and a 0.04-acre staging area in the uplands surrounding the

channel. This work area occurs within a developed area. Existing vegetation communities/land cover types within Reach 5 are described below.

Natural Flood Channel/Streambed (0.11 acre)

Unvegetated portions of the earthen-bottomed channel are mapped as natural flood channel/streambed. Occasional plants are present in these areas; however, these areas are largely devoid of vegetation.

Ornamental (0.08 acre)

Ornamental/non-native vegetation grows along the margins of the maintenance area in Reach 5. This vegetation community is made up of predominantly non-native species, including horticultural plants, castor bean (*Ricinus communis*) and acacia (*Acacia* sp.).

Developed Land (0.24 acre)

Developed land includes the concrete-lined bank(s) of Reach 5 (0.05 acre), the access area between Home Avenue and the maintenance area (0.15 acre), and a staging area north of Auburn Creek (0.04 acre). Scattered individuals of upland weeds are present but the developed land is largely unvegetated.

Auburn Creek, Map 76 (Reach 1)

Reach 1 has an earthen-bottom and one concrete-lined bank. Most of the 0.07-acre maintenance area is unvegetated, but the work area overlaps disturbed chaparral and ornamental vegetation along the southern bank. The staging and access areas are located just outside of Reach 1, and consist of a 0.01-acre access area at Spillman Drive and a 0.03-acre staging area adjacent to the maintenance area. These areas are primarily disturbed lands, with a small patch of disturbed wetland (arundo-dominated).

Natural Flood Channel/Streambed (0.06 acre)

Unvegetated portions of the earthen-bottomed channel are mapped as natural flood channel/streambed. Occasional plants are present in these areas; however, these areas are largely devoid of vegetation.

Disturbed Wetland (Arundo-Dominated) (< 0.01 acre staging area)

This vegetation community occurs in one patch within the staging area and is dominated by giant reed. Castor bean was also observed within this area.

Chaparral - Disturbed (0.01 acre)

This vegetation community occurs along the southern boundary of the maintenance area and is characterized by large, isolated laurel sumac (*Malosma laurina*) shrubs and low growing hottentot-fig (*Carpobrotus edulis*). Other shrubs present were toyon (*Heteromeles arbutifolia*), broom baccharis (*Baccharis sarothroides*), blue elderberry (*Sambucus nigra* ssp. *caerulea*), Indian fig (*Opuntia ficus-indica*), lemonadeberry (*Rhus integrifolia*), and fuschia-flowered gooseberry (*Ribes speciosum*).

Ornamental (0.01 acre)

Ornamental/non-native vegetation grows in a small patch along the southern bank of Auburn Creek, in Reach 1. This vegetation community is composed of predominantly non-native species, including horticultural shrubs and trees, hottentot-fig, fennel (*Foeniculum vulgare*), cheeseweed (*Malva parviflora*), smilo grass (*Stipa miliacea*), nasturtium (*Tropaeolum majus*), Russian thistle (*Salsola tragus*), poison oak (*Toxicodendron diversilobum*), and buckwheat (*Eriogonum fasciculatum*).

Disturbed Lands (0.04 acre)

Disturbed land makes up most of the staging area and the entire access area. This vegetation community is composed primarily of non-native species, including hottentot-fig, garland daisy (*Glebionis coronaria*), green-stem filaree (*Erodium moschatum*), and cheeseweed.

Wildlife Value:

Several of the vegetation communities within the maintenance area provide habitat for wildlife, including potential nesting and foraging for songbirds and small mammals. A list of the seven wildlife species detected during the biological surveys and site assessment is provided as Attachment 3.

Agency Jurisdiction:

In addition to the general biological survey and site assessment, HELIX also conducted a site-specific preliminary jurisdictional delineation on February 6, 2017 (Attachment 4). The preliminary jurisdictional delineation was conducted visually (no soil pit was dug) to identify and map potential jurisdictional waters and wetlands, including waters of the U.S. (WUS) subject to the regulatory jurisdiction of the U.S. Army Corps of Engineers (USACE) pursuant to Section 404 of the federal Clean Water Act (CWA) and Regional Water Quality Control Board (RWQCB) pursuant to Section 401 of the federal CWA; waters of the State subject to the exclusive regulatory jurisdiction of the RWQCB pursuant to the Porter-Cologne Water Quality Control Act; streambed and riparian habitat subject to the regulatory jurisdiction of the California Department of Fish and Wildlife (CDFW) pursuant to Sections 1600 et seq. of the California Fish and Game Code; and wetlands pursuant to the City's Environmentally Sensitive Lands (ESL) regulations.

USACE

The USACE wetland boundaries were preliminary, determined based on vegetation and hydrology indicators established for wetland delineations as described within the Wetlands Delineation Manual (Environmental Laboratory 1987) and Arid West Regional Supplement (USACE 2008). Hydric soils were not verified through the excavation of soil pits, although soil mapping units were assessed for hydric soil status. Areas were determined to be non-wetland WUS if there was evidence of regular surface flow (e.g., ordinary high water mark [OHWM], bed and bank) but the vegetation criterion was not met. The limits of the non-wetland WUS were mapped according to the OHWM noted during the delineation.

Per section 404 (f)(1)(b) of the CWA, the maintenance of serviceable structures is exempt from USACE regulation. Based on previous USACE determinations, this exemption covers concrete-lined facilities. Maintenance proposed for the Auburn Creek Channel Map 70 and 76 would not fall under the exemption for serviceable structures because the maintenance will occur in earthen-bottom WUS located within the path of a historical natural drainage feature, and portions of this channel retain the characteristics of the natural drainage feature despite the banks having been stabilized with concrete. However, the proposed maintenance can be covered under a USACE Nationwide Permit (NWP) as long as certain thresholds are not exceeded. Depending on the NWP, activities proposed under the NWP may or may not require notification to the USACE in the form of a Pre-Construction Notification (PCN).

RWQCB

Jurisdictional estimates for the RWQCB were based on the USACE boundaries. As the proposed project would require a Section 404 Permit in the form of a NWP, a Water Quality Certification by the RWQCB under Section 401 of the CWA is also required.

CDFW

The CDFW jurisdictional boundaries (i.e., Waters of the State) were determined based on the presence of riparian vegetation or regular surface flow within streambed and bank features. CDFW jurisdiction is taken to the top of bank or outermost limit of the riparian canopy, whichever is greater. A Notification of Lake or Streambed Alteration to CDFW would be required for maintenance resulting in the alteration or modification of a streambed, substantial diversion or obstruction of natural flows, or destruction of riparian habitat. CDFW may choose to take action on the Notification and issue a Streambed Alteration Agreement. If they do not take action on the Notification, they will issue an Operation of Law or No Streambed Alteration Required letter.

CITY

City wetland boundaries were based on the definition of wetlands pursuant to the City's ESL regulations of the Municipal Code (San Diego Municipal Code Section 143.0101 *et seq.*), and include areas characterized by any of the following conditions: (1) All areas persistently or periodically containing naturally occurring wetland vegetation communities characteristically dominated by hydrophytic vegetation, including but not limited to salt marsh, brackish

marsh, freshwater marsh, riparian forest, oak riparian forest, riparian woodlands, riparian scrub, and vernal pools; (2) Areas that have hydric soils or wetland hydrology and lack naturally occurring wetland vegetation communities because human activities have removed the historic wetland vegetation or catastrophic or recurring natural events or processes have acted to preclude the establishment of wetland vegetation as in the case of salt pannes and mudflats; (3) Areas lacking wetland vegetation communities, hydric soils, and wetland hydrology due to non-permitted filling of previously existing wetlands; and (4) Areas mapped as wetlands on Map C-713 as shown in Chapter 13, Article 2, Division 6 (Sensitive Coastal Overlay Zone).

The existing jurisdictional areas for the various agencies are illustrated in Tables 2 and 3 below.

Table 2
EXISTING USACE AND RWQCB JURISDICTIONAL AREAS (WUS) (acre[s])¹

MAP (REACH) ²	CHANNEL TYPE	NON-WETLAND WUS	TOTAL USACE AND RWQCB
Auburn Creek, Map 70 (Reach 5)	Earthen	0.11	0.11
Auburn Creek, Map 76 (Reach 1)	Earthen	0.06	0.06
TOTAL		0.17	0.17

¹Acreages are rounded to the nearest 0.01 acre

²Map Numbers from the City's MMP (2011a)

Table 3
EXISTING CDFW AND CITY JURISDICTIONAL AREAS (acre[s])¹

Map (Reach) ²	Channel Type	WETLAND ³	NON-WETLANDS ³	TOTAL	
		AR	STREAMBED/ NFC	CDFW	CITY
Auburn Creek, Map 70 (Reach 5)	Earthen	0	0.16 ⁴ / 0.11	0.16⁴	0.11
Auburn Creek, Map 76 (Reach 1)	Earthen	< 0.01	0.06 / 0.06	0.06	0.06
TOTAL		< 0.01	0.22⁴ / 0.17	0.22⁴	0.17

¹Acreages are rounded to the nearest 0.01 acre

²Map Numbers from the City's MMP (2011a)

³Habitat acronyms: AR= Disturbed wetland (arundo-dominated), NFC= natural flood channel/streambed

⁴CDFW jurisdictional area includes 0.05 acre of concrete bank (developed land)

Jurisdictional habitat identified during the surveys for the 2016 emergency maintenance in Map 70 also totaled 0.11 acre consisting of 0.01 acre of disturbed mule fat scrub, 0.05 acre of southern willow scrub, 0.01 acre of disturbed wetland (Arundo-dominated), and 0.04 acre of natural flood channel. Following the 2016 emergency maintenance involving removal of vegetation and sediment, the entire 0.11 acre of jurisdictional habitat in Map 70 was mapped as natural flood channel in 2017.

MAINTENANCE IMPACTS

Maintenance Methodology (based on IMP)

An IMP (Rick Engineering 2017b) was prepared for the proposed maintenance in accordance with the MMP. The IMP identifies the limits of maintenance and describes the methodology to be used within each channel. The maintenance methodologies are summarized below for each of the two maps.

Map 70

Maintenance in Map 70 is expected to remove up to 150 cubic yards of sediment over a 10-day period in order to restore the original capacity of the channel to convey storm water. The maintenance area includes 274 linear feet of earthen-bottom channel. Equipment involved in the maintenance will include a gradall, dozer, excavator, front-end loader, vactor, dump truck, and 6-inch pump or smaller. A diversion pump will be placed at the north-eastern limits of the maintenance area. Water will be pumped around the maintenance area in a pipe and discharged downstream of the maintenance area. Sandbags will be temporarily placed at the east end of the maintenance area within the channel. The sandbags will be approximately 26 feet long, 1-foot wide, and have at least a 2-foot depth. One-foot wide sandbags will also be placed around the by-pass pump at a length of 10 feet and 2-foot depth. The contractor will adjust sandbag placement, length, and depth as necessary. Additional dewatering pump(s) may be used at various locations to remove ponded water prior to equipment entering the channel.

Equipment will enter the channel via access areas located at 4333, 4355, and 4465-4467 Home Ave. through a paved commercial lot. The front-end loader, dozer, and excavator will enter the channel from the paved access ramps adjacent to the south side of the channel. The dozer will push material to the front-end loader and excavator operating near the access ramp. The excavator/ front-end loader will transfer the material to dump trucks, for disposal at an authorized disposal site.

Street sweepers will sweep adjacent public rights-of-way and immediate truck loading sites nightly. Fueling will occur outside the channel, at least 150 feet from WUS/state. Upon completion of the maintenance, all temporary materials will be removed and equipment will be transported back to the City yard.

Map 76

Maintenance in Map 76 is expected to remove up to 250 cubic yards of material (150 cubic yards of sediment and 100 cubic yards of vegetation) over a seven-day period in order to restore the original capacity of the channel to convey storm water. The maintenance area includes 160 linear feet of earthen-bottom channel. Equipment involved in the maintenance will include a gradall, dozer, excavator, front-end loader, vactor, dump truck, and 6-inch pump or smaller. A diversion pump will be placed at the upstream end of the maintenance area. Water will be pumped around the maintenance area in a pipe and discharged downstream of the maintenance area. Sandbags will be temporarily placed at both ends of the maintenance area within the channel. The sandbags will be approximately 30 feet long, 1-foot wide, and have at least a 2-foot depth. One-foot wide sandbags will also be placed around the by-pass pump at a length of 10 feet and 2-foot depth. The contractor will adjust sandbag placement, length, and depth as necessary.

Equipment will enter the access area located at the rear of 4122 Spillman Dr. and an earthen ramp will be established to allow the dozer/front-end loader to enter the channel. A gradall will be used to pull/move existing material in the channel in order to create the earthen ramp and allow vehicle access. The gradall will be staged on the street while being used to create the ramp. Once access has been established, the dozer/front-end loader will push material to the excavator/gradall, which will transfer the material to dump trucks, for disposal at an authorized disposal site. The excavator will operate from the access/staging areas located along the northwest side of the channel.

Street sweepers will sweep adjacent public rights-of-way and immediate truck loading sites nightly. Fueling will occur outside the channel, at least 150 feet from WUS/state. Upon completion of the maintenance, all temporary materials will be removed and equipment will be transported back to the City yard.

Vegetation Impacts:

Based upon the projected impacts within Maps 70 and 76, the total impact on City wetlands (disturbed wetland [arundo-dominated]) associated with the proposed maintenance area boundary is < 0.01 acre (Table 4). The maintenance would impact 0.17 acre of natural flood channel/streambed. Proposed maintenance would impact a total of 0.38 acre of upland communities, consisting of 0.01 acre of disturbed chaparral, 0.09 acre of ornamental, 0.04 acre of disturbed land, and 0.24 acre of developed land (including 0.05 acre of concrete bank that is part of CDFW jurisdiction). The vegetation impacts would result from the removal of sediment and vegetation, as well as the placement of sandbags.

**Table 4
MAINTENANCE IMPACTS¹**

TOTAL IMPACTS	
City Vegetation/Land Cover Impacts:	0.55 acre
Wetland (Disturbed Wetland [Arundo-dominated])	<0.01 acre
Natural Flood Channel/Streambed	0.17 acre ²
Upland (Chaparral, ornamental, disturbed land, and developed land)	0.38 acre ³
USACE/RWQCB/CDFW Jurisdictional Areas:	
USACE/RWQCB Wetland and Non-wetland Waters of the U.S./State)	0.17 acre ^{2, 4}
CDFW Wetland and Streambed	0.22 acre ³

¹Acreages are rounded to the nearest 0.01 acre

²Impacts to 0.11 acre of natural flood channel in Map 70 were previously impacted by 2016 emergency maintenance

³Includes 0.05 acre of concrete bank (developed land) considered City upland and CDFW jurisdictional area

⁴The 0.17 acre of jurisdictional areas is synonymous with the <0.01 acre of City Wetlands and 0.17 acre of Natural Flood Channel/Streambed listed in the City Vegetation/Land Cover Impacts section above.

As noted above, emergency maintenance activities occurred in 2016 within Reach 5 of Map 70, and those 2016 impacts to 0.11 acre of jurisdictional habitat within Reach 5 are addressed in a separate IBA (Dudek 2016).

Sensitive* Plant Species Observed:

Yes ☒ No ☐

If yes, what species were observed and where? If yes, complete a California Native Species Field Survey Form and submit it to the California Natural Diversity Database.

No sensitive plant species were observed within the maintenance, access, or staging areas. One low-sensitivity plant species, singlewhorl burrobush (*Ambrosia monogyra*), was observed outside of the work area on Map 76 in Reach 1. Eleven individuals were observed on the northern bank of Auburn Creek (Figure 5b).

* Sensitive species shall include those listed by state or federal agencies as well as species that could be considered sensitive under Sections 15380(b) and (c) and 15126(c) of the California Environmental Quality Act (CEQA) Guidelines.

Sensitive* Animal Species Observed/Detected:

Yes ☐ No ☒

If yes, what species were observed/detected and where? If yes, complete a California Native Species Field Survey Form and submit it to the California Natural Diversity Database.

* Sensitive species shall include those listed by state or federal agencies as well as species that could be considered sensitive under Sections 15380(b) and (c) and 15126(c) of the CEQA Guidelines.

Plants

No federal or state-listed plant species were detected during the biological survey. One low-sensitivity plant species, singlewhorl burrobush, was observed outside of Reach 1 of Auburn Creek and is documented within 0.5 mile of the project work areas in CNDDDB, USFWS, and SanBIOS databases (Figure 6). This species has a California Rare Plant Rank of 2B.2, which indicates species rare, threatened, or endangered in California, but more common elsewhere, and moderately threatened in California. An additional 7 species were documented within 0.5 mile of the project work areas in CNDDDB, USFWS, and SanBIOS databases: oil neststraw (*Stylocline citroleum*; Rank 1B.1), snake cholla (*Cylindropuntia californica* var. *californica*; Rank 1B.1), Palmer's goldenbush (*Ericameria palmeri* var. *palmeri*; Rank 1B.1), Aphanisma (*Aphanisma blitoides*; Rank 1B.2), decumbent goldenbush (*Isocoma menziesii* var. *decumbens*; Rank 1B.2), San Diego barrel cactus (*Ferocactus viridescens*; Rank 2B.1), and wart-stemmed ceanothus (*Ceanothus verrucosus*; Rank 2B.2). Rank 1B.1 indicates species that are rare or endangered in California and elsewhere, and seriously threatened in California. Rank 1B.2 indicates species that are rare or endangered in California and elsewhere,

and moderately threatened in California. Rank 2B.2 indicates species that are rare, threatened, or endangered in California, but more common elsewhere, and moderately threatened in California. None of these species was observed during the survey of the work area, and their potential to occur within the maintenance area is low.

Animals

No federal or state-listed animal species, or other sensitive animal species, was detected during the biological survey. Two special-status animal species have been reported within 0.5 mile of the project work areas and are documented in CNDDB, USFWS, and SanBIOS databases: coastal California gnatcatcher (*Poliptila californica californica*; federally listed threatened and state species of special concern) and two-striped garter snake (*Thamnophis hammondi*; state species of special concern; Figure 6). None of these species was observed during the survey.

Is any portion of the maintenance activity within an MHPA? Yes ☐ No ☒

Is there moderate or high potential for listed animal species to occur in or adjacent to the impact area?
Yes ☐ No ☒

If yes, which species (check all that apply) and describe any surveys which should be undertaken to determine whether those species could occur within the maintenance area:

- | | |
|---|--|
| ☐ Least Bell's vireo | ☐ Riverside fairy shrimp |
| ☐ Southwestern willow flycatcher | ☐ California least tern |
| ☐ Arroyo toad | ☐ Light-footed clapper rail |
| ☐ Coastal California gnatcatcher | ☐ Western snowy plover |
| ☐ San Diego fairy shrimp | ☐ Other: _____ |

Attach documentation supporting the determination of the presence or absence of listed animal species with a moderate or high potential to occur (e.g. California Natural Diversity Database records searches).

No sensitive animal species have been reported within the work areas during previous surveys. Therefore, the potential for state and federally listed sensitive species other than Migratory Bird Treaty Act (MBTA) Protected Birds and raptors to occur within the work area is considered very low. Figure 6 depicts CNDDB, USFWS, and SanBIOS database records within one-half mile of the project sites. Two-striped garter snake, a CDFW species of special concern, was reported within 0.5 mile but not within the project work area. Two-striped garter snake is typically found adjacent to permanent or semi-permanent bodies of fresh water. It is often along streams with rocky beds bordered by riparian vegetation. It has low potential to occur in the generally dry channel bottoms characteristic of the maintenance area.

With respect to the parameter used to determine the need for a detailed Individual Noise Assessment (INA), no sensitive species are expected to occur within 750 feet of the proposed maintenance. Thus, a detailed INA is not required.

Is there moderate or high potential for a listed plant species to occur in or adjacent to the impact area?
Yes ☒ No ☐

If yes, identify which species may occur and describe any surveys which should be undertaken to determine whether those species could occur within the maintenance area:

No federal or state-listed plant species were detected during the biological survey. One low-sensitivity plant species, singlewhorl burrobush (Rank 2B.2), was observed outside of the work area. Eleven individuals were observed on the northern bank of Reach 1 (Map 76; Figure 5b). A follow-up survey is not needed for this species, as it is a shrub that would have been observed during the biological survey. Two low-sensitivity plant species were mapped as occurring in a broad area overlapping Reaches 1 and 5 of Auburn Creek, as documented in CNDDB, USFWS, and SanBIOS databases (Figure 6): oil neststraw (Rank 1B.1) and aphanisma (Rank 1B.2). Oil neststraw occurs on open, stable, often crusted sand, clay, dry drainage edges, between *Atriplex* sp. shrubs (Baldwin et al. 2012). Given the disturbed nature of the work area and that *Atriplex* sp. was not observed during the survey, oil neststraw has low potential to occur within the project

work area. *Aphanisma* occurs on low elevation coastal scrub, bluffs, and saline sand, which do not occur within the work area. Given that these two species have low potential to occur, follow-up surveys for them are not recommended. Thus, no other sensitive species, including federal or state-listed plant species, have a moderate or high potential to occur within the maintenance area.

Attach documentation supporting the determination of the presence or absence of listed plant species with a moderate or high potential to occur (e.g. California Natural Diversity Database records searches).

See Figure 6.

Could work be conducted during the avian breeding season (January 15 – August 31) without the need for pre-construction nesting surveys: Yes ☐ No ☒

Nesting birds have potential to occur within or adjacent to the area of the proposed channel maintenance. Thus, pre-construction nesting surveys by a qualified biologist are necessary to help ensure no impacts to avian species occur and that the project would comply with the MBTA and MMP's PEIR MMRP. The potential exists for birds protected by the MBTA to nest in trees in and adjacent to the maintenance area. The MBTA prohibits deliberate take of birds, eggs, and active nests without a permit from the USFWS. Permits are issued for specific categories of deliberate take (e.g., scientific collection, removal of depredating birds); however, not for incidental take (take that is the unintended result of an otherwise lawful action). As no incidental take permits can be issued under MBTA, no conditions to avoid incidental take can be placed on discretionary permits pursuant to MBTA (such conditions would constitute a *de facto* incidental take permit). In practice, reasonable diligence to avoid take of birds and/or active nests, such as pre-construction nesting bird surveys, is considered sufficient to avoid prosecution under MBTA.

If yes, provide justification:

Is it anticipated that maintenance activities would generate noise in excess of 60 dB(A) L_{EQ} ? Yes ☒ No ☐

Equipment used during maintenance may generate noise in excess of 60 dB(A) L_{EQ} .

If yes, what measures should be taken to avoid adverse impacts on avian bird breeding within or adjacent to the maintenance?

Although maintenance operations have potential to generate noise in excess of 60 dB(A) L_{EQ} , as described above, no sensitive wildlife is expected to occur in the vicinity of the work. Thus, maintenance activities would not cause a significant noise impact to sensitive breeding birds.

Biological Resource Conditions Relative to Original Survey Conducted for MASTER PROGRAM Final Program EIR (May 2010) (vegetation communities present, including adjacent uplands; general habitat quality/level of disturbance):

The majority of habitat mapping and programmatic jurisdictional delineation work (largely based on aerial and topographic interpretation combined with observations upstream and downstream) for the PEIR was conducted by HELIX in late winter and early spring of 2007 and 2008. Based on current aerial photographs and the field surveys in February 2017, the following observations are different from the original survey:

- Reach 1: the western end of Reach 1 was mapped as streambed in 2007-2008, and the eastern end was mapped as disturbed wetland. In current conditions, the entire bottom of Reach 1 was mapped as natural flood channel/streambed, and the southern banks were mapped as disturbed chaparral and ornamental. A different access area was mapped in 2007-2008, and a staging area was not shown; however, the previously mapped access area remains in the same habitat; it was mapped as disturbed land.
- Reach 5: In 2007-2008, the channel bottom was mapped as disturbed wetland on the eastern side of the reach, and as streambed in the central part of the reach. The western portion of the channel bottom and the sides of the channel were mapped as developed. In current conditions, the entire channel bottom was

mapped as natural flood channel/streambed. The sides of the channel continued to be mapped as developed. The edges of the maintenance area were mapped as ornamental. No access or staging areas were mapped in 2007-2008.

Between 2008 and 2016, vegetation within Reach 5 (Map 70) converted to southern willow scrub and disturbed mule fat scrub. As noted above, the 2016 emergency channel maintenance in Map 70 removed riparian scrub and disturbed wetland, and the area is currently mapped as streambed/natural flood channel. Between 2008 and 2017, vegetation within the eastern end of Reach 1 (Map 76) converted from disturbed wetland to streambed/natural flood channel. It is possible that sparse vegetation within Map 76 was uprooted or buried by physical processes in the channel. Adjacent upland vegetation communities expanded into the edges of the maintenance areas (such as the growth of disturbed chaparral and ornamental in Reach 1 and ornamental in Reach 5). Given that most of the access and staging areas had not been mapped, it is not known how these have changed. The channels are subject to the same levels of trash deposition, noise, and urban runoff as in 2007-2008.

Is there a moderate or high potential for maintenance to impact an MHPA?

Yes ☐ No ☒

If yes, discuss the potential impacts that could occur from the portion within or adjacent to that MHPA:

The MHPA is approximately 95 feet to the south of the maintenance area in Reach 5 (Figure 4). Access to this maintenance area is expected to occur via Home Avenue to the north, and no direct impacts are expected to occur. Thus, no significant impacts are expected to occur to the MHPAs from the proposed maintenance.

Is there moderate or high potential for listed animal species to be impacted?

Yes ☐ No ☒

If yes, which species (check all that apply):

- | | |
|---|--|
| ☐ Least Bell's vireo | ☐ Riverside fairy shrimp |
| ☐ Southwestern willow flycatcher | ☐ California least tern |
| ☐ Arroyo toad | ☐ Light-footed clapper rail |
| ☐ Coastal California gnatcatcher | ☐ Western snowy plover |
| ☐ San Diego fairy shrimp | ☐ Other: _____ |

MITIGATION

Applicable Maintenance Protocols from the MMP (list the applicable maintenance protocols based on the biological resources occurring or likely to occur on site - include any special protocols required):

The following protocols specified in the MMP will be carried out by individuals with qualifications approved by the City.

Water Quality (WQ)

WQ-2 Prevent off-site sediment transport during maintenance through the use of erosion and sediment controls within storm water facilities, along access routes, and around stockpile/staging areas. Install Best Management Practices (BMPs) such as silt fences, fiber rolls, gravel bags, temporary sediment basins, stabilized maintenance access points (e.g., shaker plates), containment barriers (e.g., silt fence, fiber rolls and/or berms) for material stockpiles, and properly fitted covers for material transport vehicles. Remove temporary erosion control measures upon completion of maintenance unless their removal would result in greater environmental impact than leaving them in place.

WQ-3 Store BMP materials on-site to provide complete protection of exposed areas and prevent off-site sediment transport.

- WQ-4 Provide training for personnel responsible for the proper installation, inspection, and maintenance of on-site BMPs.
- WQ-7 Avoid storing hazardous materials used during maintenance within 50 feet from storm water facilities. Hazardous materials shall be managed and stored in accordance with applicable local, state, and federal regulations.
- WQ-8 Store maintenance-related trash in areas at least 50 feet from storm water facilities, and remove any trash receptacles regularly (at least weekly).
- WQ-10 Inspect earthen-bottom storm water facilities within 30 days of the first two-year storm following maintenance. Implement erosion control measures recommended by the field engineer, such as fiber blankets, to remediate substantial erosion that has occurred and to minimize future erosion.

Biological Resource Protection (BIO)

- BIO-1 Restrict vehicles to access designated in the MMP.
- BIO-2 Flag and delineate all sensitive biological resources to remain within or adjacent to the maintenance area prior to initiation of maintenance activities in accordance with the site-specific IBA, IHHA, and/or IMP prepared for the work.
- BIO-3 Conduct a pre-maintenance meeting on site prior to the start of any maintenance activity that occurs within or adjacent to sensitive biological resources. The pre-maintenance meeting shall include a qualified biologist, field engineer, planner, equipment operators/superintendent, and any other key personnel conducting or involved in channel maintenance activities. The qualified biologist shall point out or identify sensitive biological resources to be avoided during maintenance, flag/delineate sensitive resources to be avoided, review specific measures to be implemented to minimize direct/indirect impacts, and direct crews or other personnel to protect sensitive biological resources as necessary. The biologist shall also review the proposed erosion control methods to confirm that they will not pose risk to wildlife (e.g., non-biodegradable blankets may entangle wildlife).
- BIO-4 Avoid the introduction of invasive plant species with physical erosion control measures.
- BIO-5 Conduct appropriate pre-maintenance surveys if maintenance is proposed during the breeding season of a sensitive animal species (January 15 to August 31). If sensitive animal species covered by the PEIR are identified, then applicable measures from the MMRP shall be implemented under the direction of a qualified biologist to avoid significant direct and/or indirect impacts to identified sensitive animal species. If sensitive animal species are identified during pre-maintenance surveys that are not covered by the PEIR, the Storm Water Department shall contact the appropriate wildlife agencies and additional environmental review under CEQA will be required.
- BIO-6 Remove arundo through one, or a combination of, the following methods: (1) foliar spray (spraying herbicide on leaves and stems without cutting first) when arundo occurs in monotypic stands, or (2) cut and paint (cutting stems close to the ground and spraying or painting herbicide on cut stem surface) when arundo is intermixed with native plants. When sediment-supporting arundo must be removed, the sediment shall be excavated to a depth sufficient to remove the rhizomes, wherever feasible. Following removal of sediment containing rhizomes, loose rhizome material shall be removed from the channel and disposed of offsite. After the initial treatment, the area of removal shall be inspected on a quarterly basis for up two years, or until no re-sprouting is observed during an inspection. If re-sprouting is observed, the cut and paint method shall be applied to all resprouts.
- BIO-7 Avoid mechanized maintenance within 300 feet of a Cooper's hawk nest, 900 feet of a northern harrier's nest, or 500 feet of any other raptor's nest until any fledglings have left the nest.

Waste Management (WM)

- WM-1 Dispose and transport compostable green waste material to an approved composting facility, if available.
- WM-2 Re-use excavated material, whenever possible, as fill material, aggregate sand replenishment, or other raw material uses. Re-used material (aggregates, soil, sand, or silt) shall be documented in accordance with applicable local, state, and federal regulations.
- WM-3 Separate waste tires from excavated material and transport them to an appropriate disposal facility. If more than nine tires are in a vehicle or waste bin at any one time, they shall be transported under a completed comprehensive trip log (CTL) to document that the tires were taken to an appropriate disposal facility.
- WM-4 Log and transport any hazardous materials encountered during maintenance to a hazardous waste storage, recycling, treatment, or disposal facility. Personnel handling hazardous materials shall have the appropriate training to handle, store, transport, and/or dispose the material. Hazardous materials (e.g., machine oil, mercury switches, and refrigerant gases) shall be removed from appliances and disposed in accordance with this protocol.

Applicable PEIR mitigation measures:

General Mitigation 1, 2, 3, and 4

Biological Resources 4.3.1, 4.3.2, 4.3.3, 4.3.4, 4.3.5, 4.3.6, 4.3.7, 4.3.8, 4.3.9, 4.3.10, 4.3.11, 4.3.13, 4.3.14, 4.3.15, 4.3.16, 4.3.21, 4.3.22, 4.3.25

Land Use 4.1.6, 4.1.7

Applicable PEIR MMs have been included in their entirety in Attachment 1.

Other mitigation measures: Regulatory permits, agreements, and/or authorizations may require additional conditions to avoid, minimize, and/or mitigate impacts to biological resources.

- Existing vegetation to be preserved in place shall be clearly marked with a buffer area following the guidance of Best Management Practice Fact Sheet EC-2.
- Flagging will be placed near singlewhorl burrobush located near the maintenance area on Map 76, to keep maintenance from impacting these plants.
- The designated biological monitor shall be present throughout the first full day of maintenance, whenever mandated by the associated IBA.
- Avoid the introduction of invasive plant species with physical erosion control measures.
- Prior to commencing any maintenance activity that may impact sensitive biological resources, the monitoring biologist shall verify that the following actions have been taken, as appropriate:
 - Fencing, flagging, signage, or other means to protect sensitive resources to remain after maintenance has been completed,
 - Noise attenuation measures needed to protect sensitive wildlife are in place and effective, and/or
 - Nesting birds have been identified and necessary setbacks have been established if maintenance is to occur between January 15 and August 31.
- If any wildlife is encountered during the course of maintenance, said wildlife shall be allowed to leave the maintenance area unharmed.

Environmental Mitigation Requirements (including wetland enhancement, restoration, creation, and/or purchase of wetland credits in a mitigation bank; off-site upland habitat acquisition/payment into the City's habitat acquisition fund):

Mitigation is required for impacts to wetlands, sensitive uplands, and jurisdictional areas associated with the proposed maintenance. Mitigation for jurisdictional impacts is proposed below, but final mitigation requirements will be determined by the agencies during permitting. City mitigation ratios must be consistent with those identified in the SDP related to the Final PEIR for the MMP.

As noted above, emergency maintenance in 2016 removed vegetation and sediment within Reach 5 of MMP Map 70, resulting in 0.11 acre of impacts to jurisdictional habitats. As a condition of approval of the emergency maintenance, the City agreed to compensate for the loss of wetlands. As shown in Table 5, impacts to City jurisdictional areas from emergency maintenance at MMP Map 70 required a total of 0.26 acre of mitigation for impacts to 0.11 acre of earthen channel. The CDFW did not require mitigation for the 2016 emergency impacts at MMP Map 70. Mitigation required by the USACE and RWQCB for the 2016 emergency maintenance totaled 0.10 acre for permanent impacts to 0.05 acre of southern willow scrub. Separate mitigation plans have been prepared to provide the required 0.26 acre of mitigation for impacts to City jurisdictional areas and 0.10 acre of mitigation for impacts to USACE and RWQCB jurisdictional areas. Please refer to the *Mitigation Description/Location* section below for further detail on these mitigation plans. With the fulfillment of these mitigation obligations for 2016 emergency maintenance at MMP Map 70, subsequent mitigation will not be required for future impacts within the 2016 emergency maintenance footprint. Mitigation requirements for MMP Map 76 are discussed below for each agency.

Table 5
2016 EMERGENCY MAINTENANCE MITIGATION SUMMARY FOR MAP 70
(CITY JURISDICTION)¹

HABITAT	IMPACTS TO EARTHEN CHANNEL (ac)	MITIGATION RATIO ²	MITIGATION (ac)
Riparian scrub (disturbed mule fat scrub)	0.01	3:1	0.03
Riparian scrub (southern willow scrub)	0.05	3:1	0.15 ³
Disturbed wetland (Arundo-dominated)	0.01	0:1	0
Streambed	0.04	2:1	0.08
GRAND TOTAL	0.11	--	0.26

¹ Acreages are rounded to the nearest 0.01 acre

² Mitigation ratios specified in the modified SDP related to the Final PEIR for the MMP

³ The 0.15 acre of mitigation (3:1 ratio) is to meet City requirements. The USACE/RWQCB required 0.10 acre of mitigation (2:1 ratio).

USACE/RWQCB Jurisdictional Areas:

The USACE and RWQCB have jurisdiction over MMP Maps 70 and 76 within Auburn Creek, and are expected to require compensatory mitigation for maintenance impacts. Impacts to USACE and RWQCB jurisdictional earthen-bottom channel from maintenance will amount to 0.17 acre for both MMP Maps 70 and 76, of which 0.11 acre have been previously impacted during the 2016 emergency maintenance at Map 70. As described above, mitigation required by the USACE and RWQCB for the 2016 emergency maintenance totaled 0.10 acre for permanent impacts to 0.05 acre of southern willow scrub and is being provided under separate mitigation plans. Thus, impacts to USACE and RWQCB jurisdictional earthen-bottom channel requiring mitigation for the proposed maintenance impacts include only the remaining acreage at Map 76 and total 0.06 acre. Although the permitting for the proposed maintenance has not been completed, mitigation is proposed at a 1:1 ratio for non-wetland WUS impacts, resulting in a total mitigation requirement of 0.06 acre (Table 6). A 1:1 mitigation ratio is proposed for non-wetland WUS because the channel is currently unvegetated, maintenance will consist of removal of accumulated sediment and

restoration of the channel to as-built conditions, and this mitigation ratio has been used for other portions of the City's storm water system facilities for maintenance of unvegetated WUS. Please refer to the *Mitigation Description/Location* section below for further detail on the location of the proposed mitigation.

Table 6
PROPOSED MITIGATION FOR MAP 76 IMPACTS TO USACE/RWQCB JURISDICTION¹

HABITAT	IMPACTS TO EARTHEN CHANNEL (ac)	MITIGATION RATIO	MITIGATION (ac)
Non-wetland Waters of the U.S.	0.06	1:1	0.06

¹Acreages are rounded to the nearest 0.01 acre

CDFW Jurisdictional Areas:

The CDFW has jurisdiction over MMP Maps 70 and 76 within Auburn Creek, and is expected to require compensatory mitigation for maintenance impacts. Impacts to CDFW jurisdictional areas include 0.05 acre of concrete bank (developed land in Map 70) and 0.17 acre of earthen-bottom channel, of which 0.11 acre were previously impacted during the 2016 emergency maintenance at Map 70. No mitigation is proposed for the upcoming maintenance at Map 70 because the area was maintained in 2016, CDFW did not require mitigation for the emergency maintenance, and upcoming maintenance will consist of removal of accumulated sediment in the unvegetated streambed. Thus, impacts to CDFW jurisdictional earthen-bottom channel requiring mitigation for the proposed maintenance impacts include only those associated with Map 76 and total 0.06 acre. Although permitting for the proposed maintenance has not been completed, mitigation is proposed at a 1:1 ratio for streambed and a 0:1 ratio for disturbed wetland (arundo-dominated), resulting in a total mitigation requirement of 0.06 acre (Table 7). A 1:1 mitigation ratio is proposed for streambed because the channel is currently unvegetated, maintenance will consist of removal of accumulated sediment and restoring the channel to as-built conditions, and this mitigation ratio has been used for other portions of the City's storm water system facilities for maintenance of unvegetated streambed areas. Please refer to the *Mitigation Description/Location* section below for further detail on the location of the proposed mitigation.

Table 7
PROPOSED MITIGATION FOR MAP 76 IMPACTS TO CDFW JURISDICTION¹

HABITAT	IMPACTS TO EARTHEN CHANNEL (ac)	MITIGATION RATIO	MITIGATION (ac)
Disturbed wetland (arundo-dominated)	<0.01	0:1	0
Streambed	0.06	1:1	0.06
GRAND TOTAL	0.06	--	0.06

¹Acreages are rounded to the nearest 0.01 acre

City Jurisdiction:

The City has jurisdiction over MMP Maps 70 and 76 within Auburn Creek, and is expected to require compensatory mitigation for maintenance impacts. Impacts to City jurisdictional areas within Maps 70 and 76 total 0.55 acre, of which 0.11 acre were previously impacted during the 2016 emergency maintenance at MMP Map 70. As described above, mitigation required by the City for the 2016 emergency maintenance totaled 0.26 acre for permanent impacts to

0.11 acre and is being provided under separate mitigation plans. Thus, impacts to City jurisdictional areas requiring mitigation for the proposed maintenance impacts include only the remaining acreage at MMP Map 76. As illustrated in Table 8, the proposed maintenance for MMP Map 76 will require mitigation to compensate for impacts to 0.06 acre of natural flood channel and 0.01 acre of chaparral. The City requires compensatory mitigation for impacts pursuant to the mitigation ratios specified in the modified SDP 1134892 and CDP for the MMP. Impacts to disturbed wetland (disturbed habitat, non-native riparian, and non-native vegetation/ornamental) consisting of pure stands of non-native species such as Mexican fan palm (*Washingtonia robusta*), giant reed, and castor bean, do not require compensatory mitigation under condition 9e of the Master CDP, which is applied to all impacts under the terms of the Settlement Agreement, nor do they require mitigation under the City's Significance Determination Thresholds (2007, updated 2011). Mitigation for impacts to natural flood channel is required at 2:1, resulting in a mitigation requirement of 0.12 acre of natural flood channel. The City Biology Guidelines' (City 2012) stated preference for this habitat type is out-of-kind mitigation with better habitat. In-kind could be considered where it would clearly benefit sensitive species and results in a biologically superior alternative. In accordance with the SDP, impacts to 0.01 acre of chaparral (Tier IIIA upland) are cumulatively greater than 0.1 acre and are therefore considered significant and require mitigation at 0.5:1, resulting in a mitigation requirement of <0.01 acre of chaparral. The total mitigation requirement for proposed impacts to City jurisdiction in MMP Map 76 is 0.13 acre (Table 8). Please refer to the *Mitigation Description/Location* section below for further detail on the location of the proposed mitigation.

Table 8
PROPOSED MITIGATION FOR MAP 76 IMPACTS TO CITY JURISDICTION

VEGETATION COMMUNITY/ LAND COVER TYPE	IMPACTS (ac)	MITIGATION RATIO	MITIGATION (ac)
Disturbed wetland (Arundo-dominated)	<0.01	0:1	0
Natural flood channel	0.06	2:1	0.12
Chaparral (disturbed)	0.01	0.5:1	<0.01
Ornamental	0.09	0:1	0
Disturbed land	0.04	0:1	0
Developed land	0.24	0:1	0
TOTAL	0.44	--	0.13

Table 9 below summarizes the discussion above by providing a list of mitigation required and proposed for 2016 emergency maintenance and FY19 routine maintenance at MMP Maps 70 and 76.

Table 9
MITIGATION COMPARISON TABLE

	2016 Emergency Maintenance Impact Area (ac)	Mitigation Provided for 2016 Emergency Maintenance		FY19 Routine Maintenance Proposed Impact Area (ac)	Mitigation Proposed for FY19 Routine Maintenance	
		Ratio	Acreage		Ratio ²	Acreage
Auburn - Map 70						
Riparian scrub (disturbed mule fat scrub)	0.01	3:1	0.03	0	0:1	0
Riparian scrub (SWS)	0.05	3:1	0.15	0	0:1	0
Disturbed wetland (Arundo dominated)	0.01	0:1	0	0	0:1	0
Streambed	0.04	2:1	0.08	0.11	0:1 ¹	0 ¹
Map 70 Total	0.11	--	0.26	0.11	--	0

**Table 9 (cont.)
MITIGATION COMPARISON TABLE**

	2016 Emergency Maintenance Impact Area (ac)	Mitigation Provided for 2016 Emergency Maintenance		FY19 Routine Maintenance Proposed Impact Area (ac)	Mitigation Proposed for FY19 Routine Maintenance	
		Ratio	Acreage		Ratio	Acreage
Auburn - Map 76						
Disturbed wetland (Arundo dominated)	0	--	--	<0.01	0:1	0
Streambed	0	--	--	0.06	2:1	0.12
Chaparral	0	--	--	0.01	0.5:1	<0.01
Ornamental	0	--	--	0.09	0:1	0
Disturbed land	0	--	--	0.04	0:1	0
Developed land	0	--	--	0.24	0:1	0
Map 76 Total	0	--	--	0.44	--	0.13
GRAND TOTAL	0.11	--	0.26	0.55	--	0.13

¹ The proposed 0.11 acre impact for FY19 Routine Maintenance falls within the footprint of the 2016 Emergency Maintenance impact area, which is being fully mitigated under a separate plan. Therefore, additional mitigation is not required.

² This table includes mitigation ratios per the Settlement Agreement. RWQCB and USACE mitigation requirements are less than those required by the Settlement Agreement and CDFW did not require mitigation.

Mitigation Description/Location:

Wetland mitigation proposed for Map 70 (0.26 acre) will be fulfilled by the 0.10 acre of enhancement identified in the Conceptual Wetland Mitigation Plan for 2015/2016 Emergency Channel Maintenance (Dudek 2018) and 0.16 acre of creation/restoration at the Otay Reed Mitigation Site (Wetland Habitat Mitigation and Monitoring Plan for the Otay Reed Site, HELIX 2017). The Conceptual Wetland Mitigation Plan for 2015/2016 Emergency Channel Maintenance consists of several mitigation sites within the Pueblo watershed, with one additional area in the Sweetwater watershed. The Otay Reed Site is located along the Otay River immediately west of I-805 and is proposed as an advanced-permittee responsible mitigation site.

Wetland mitigation proposed for Map 76 (0.12 acre) will be fulfilled at the Stadium Mitigation Site (Atkins 2015) located along the San Diego River between I-15 and I-805 south of Qualcomm Stadium. The Stadium Mitigation Site is an advanced-permittee responsible mitigation site with a service area that includes the Pueblo watershed, Peñasquitos watershed, and San Diego River watershed west of El Capitan Reservoir.

California Rapid Assessment Method (CRAM) was used as an indicator of wetland condition in the Auburn channel. The purpose of CRAM is to provide a rapid, standardized, and scientifically defensible assessment of the status of a wetland. HELIX biologist Erica Harris conducted the CRAM assessment on May 16, 2017 for Assessment Area (AA) 76. This assessment area is representative of the maintenance areas in both Maps 70 and 76. The CRAM results are provided in Attachment 5. These CRAM scores will be used to document the condition of the Auburn channel prior to maintenance and will be used for comparisons with restoration areas being used to mitigate for channel impacts.

Mitigation credits for upland impacts (0.005 acre) will be purchased from the City's Habitat Acquisition Fund.

Table 10 provides a summary of mitigation locations for Map 70 and 76.

**Table 10
MITIGATION LOCATIONS**

Project	Total Required Mitigation (ac) ¹	Mitigation Locations				Total Mitigation Provided (ac)
		2015/2016 Emergency Maintenance Mitigation Plan (ac)	Otay Reed Wetland Mitigation Plan (ac)	Stadium Wetland Mitigation Plan (ac)	City of San Diego Habitat Acquisition Fund (ac)	
Map 70, 2015 Emergency	0.26	0.10	0.16	0	0	0.26
Map 70, FY19 Routine Maintenance	N/A ²	N/A	N/A	N/A	N/A	N/A
Map 76, FY19 Routine Maintenance	0.13	0	0	0.12	< 0.01	0.13

¹ Please refer to Table 9 for detailed breakout of mitigation requirements by habitat type.

² The proposed 0.11 acre impact for FY19 Routine Maintenance falls within the footprint of the 2016 Emergency Maintenance impact area, which is being fully mitigated under a separate plan. Therefore, additional mitigation is not required.

ADDITIONAL COMMENTS OR RECOMMENDATIONS

Individual Biological Assessment Report Figures:

Figure 1: Regional Location Map

Figure 2: Project Vicinity (USGS Topography)

Figure 3: Project Vicinity (Aerial Photograph)

Figure 4: 2016 Emergency Maintenance Area (Map 70)/Reach 5

Figure 5a: Vegetation and Sensitive Biological Resources, Auburn Creek Channel – Map 70/Reach 5

Figure 5b: Vegetation and Sensitive Biological Resources, Auburn Creek Channel – Map 76/Reach 1

Figure 6: Sensitive Species Occurrences within One-half Mile of the Project Location

Figure 7a: Jurisdictional Delineation, Auburn Creek Channel – Map 70/Reach 5

Figure 7b: Jurisdictional Delineation, Auburn Creek Channel – Map 76/Reach 1

Individual Biological Assessment Report Attachments:

Attachment 1: Applicable PEIR Mitigation Measures

Attachment 2: Plant Species Observed in the Auburn Creek Channel

Attachment 3: Wildlife Species Observed in the Auburn Creek Channel

Attachment 4: Preliminary Jurisdictional Determination Form

Attachment 5: CRAM Data Sheets and Figures

REFERENCES

- Atkins. 2015. Stadium Wetland Mitigation Project (San Diego River). March.
- Baldwin, B.G., D.H. Goldman, D.J. Keil, R. Patterson, T.J. Rosatti, and D.H. Wilken, editors. 2012. The Jepson Manual: Vascular Plants of California, second edition. University of California Press, Berkeley.
- California Wetlands Monitoring Workgroup (CWMW). 2013b. California Rapid Assessment Method (CRAM) for Wetlands. User's Manual. Version 6.1. April. pp. 67.
- City of San Diego (City). 2012. Land Development Code Biology Guidelines (as amended by Resolution No. R-307376). April 23.
- 2011a Master Storm Water Maintenance Program. San Diego, California. October.
- 2011b Final Recirculated Master Storm Water System Maintenance Program PEIR. San Diego, California. October 4.
- 2007 California Environmental Quality Act, Significance Determination Thresholds. Development Services Department. January (updated 2011).
- Dudek. 2018. Conceptual Wetland Mitigation Plan for 2015/2016 Emergency Channel Maintenance. March.
- 2016 Individual Biological Assessment Report for Auburn Creek Channel Emergency Maintenance. March 28.
- Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1. U.S. Army Engineer Waterways Experiment Station, Vicksburg, Mississippi. 100 pp. with Appendices.
- HELIX Environmental Planning, Inc (HELIX). 2017. Wetland Habitat Mitigation and Monitoring Plan for the Otay Reed Site. December.
- Holland, R.F. 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California. Nongame-Heritage Program, California Department of Fish & Game.
- Rick Engineering. 2017a. Individual Hydrologic & Hydraulic Assessment (IHHA) Report for Auburn Creek Channel, Maps 70 and 76. May 3.
- 2017b. Maintenance Plans for Auburn Creek Channel MMP Map #70 & 76. June 9.
- U.S. Army Corps of Engineers. 2008. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0). Eds. J.S. Wakely, R.W. Lichvar, and C.V. Noble. ERDC/EL TR-08-28. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

SITE PHOTOS

**PHOTO 1 NOTES:**

Map 76, Reach 1, looking upstream from the near the downstream end (2/6/17).



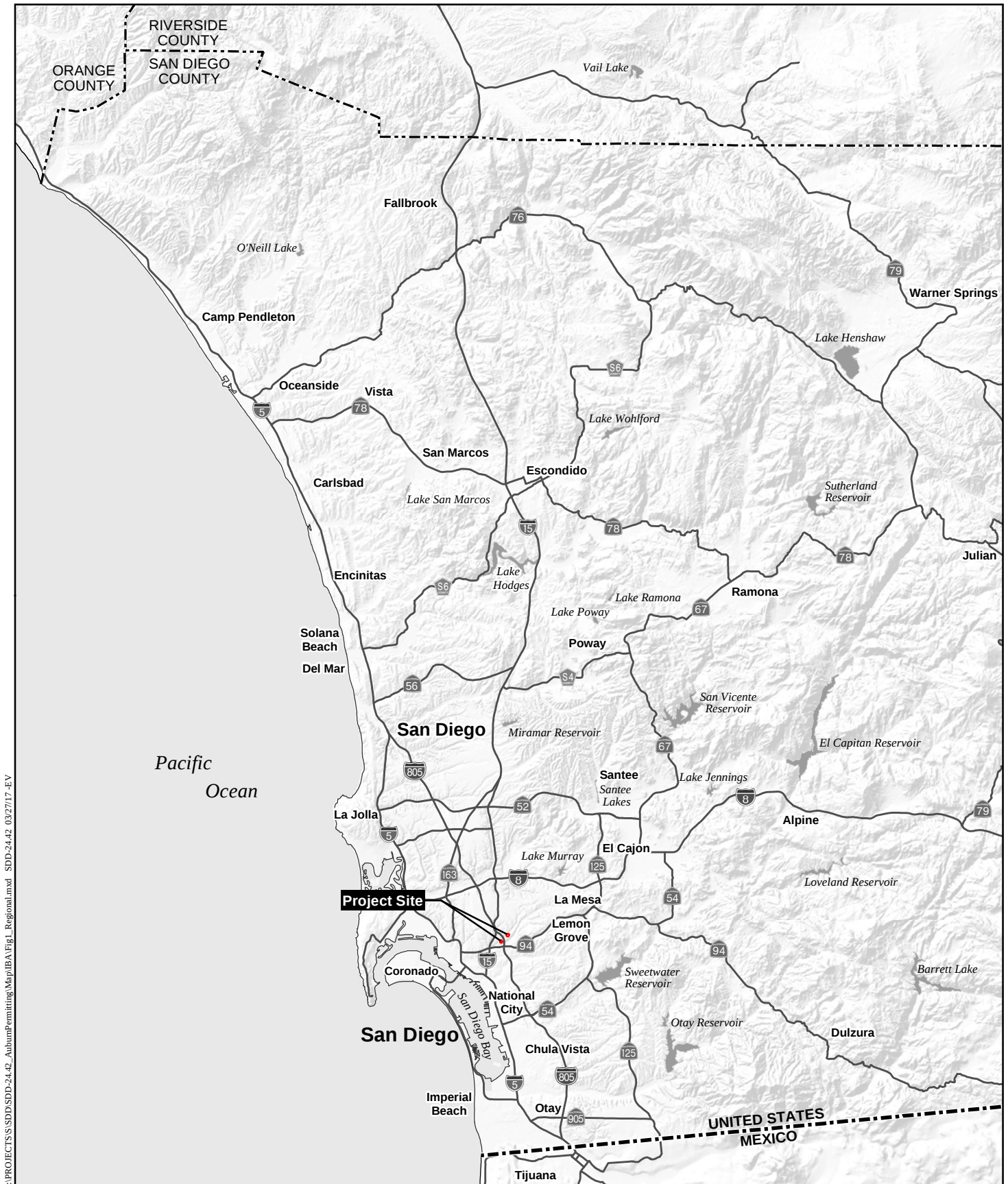
PHOTO 2 NOTES: Map 76, Reach 1, looking across the maintenance area at the access and staging areas (2/6/17).

**PHOTO 3 NOTES:**

Map 70, Reach 5, looking downstream from the upper end (4/10/17).

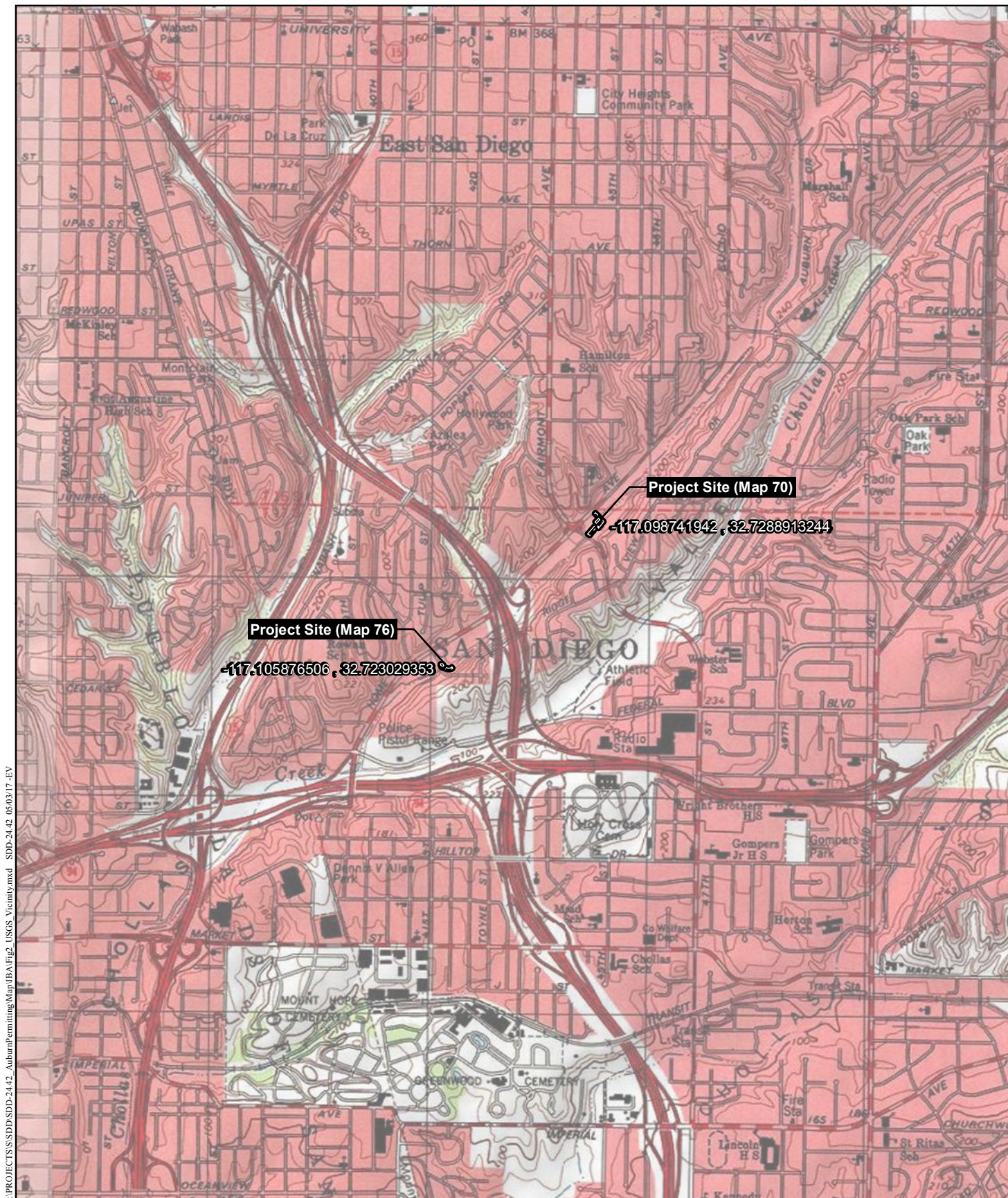
**PHOTO 4 NOTES:**

Map 70, Reach 5, looking southeast at the access area (4/10/17).



Regional Location Map

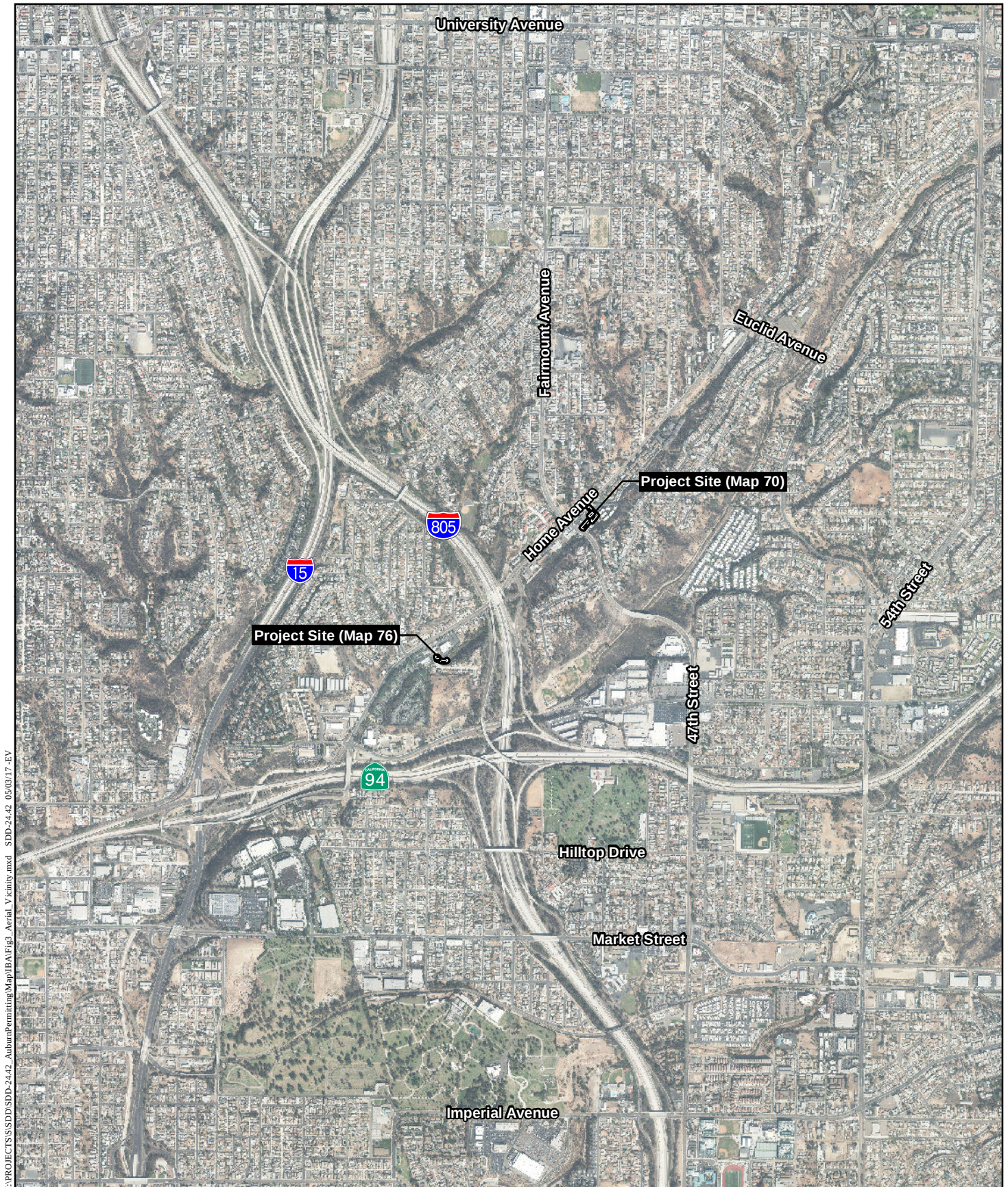
AUBURN CREEK CHANNEL MAINTENANCE PROJECT



Quad: 7.5' National City (USGS)
 Note: sites are in un-sectioned lands
 in Township 17 South, Range 2 West

Project Vicinity (USGS Topography)

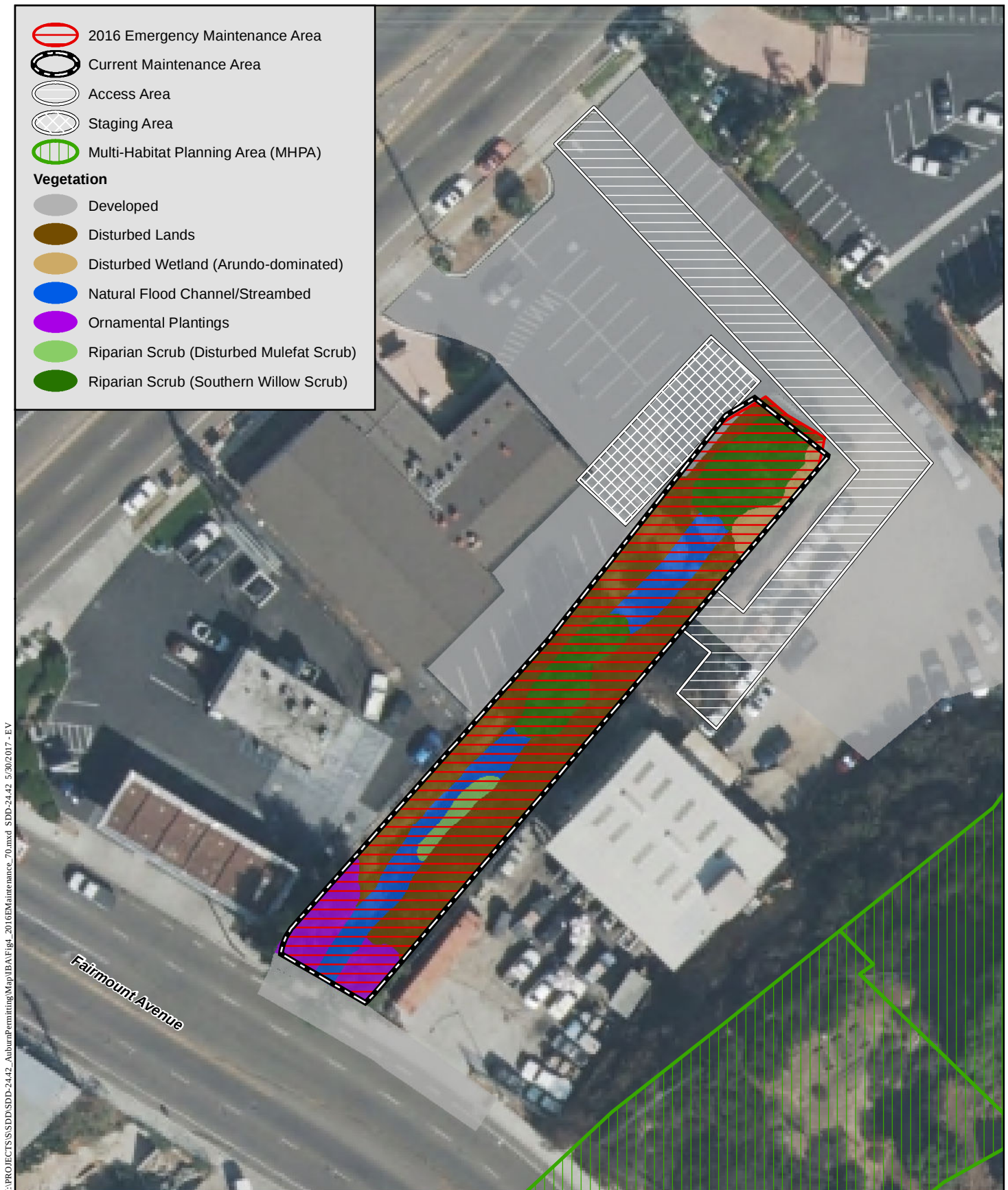
AUBURN CREEK CHANNEL MAINTENANCE PROJECT



I:\PROJECTS\SS\SSDD\SDD-2442_AuburnCreekChannelMaintenance\Map\BAA\Fig2_Aerial_Vicinity.mxd SDD-24-42 05/03/17 -EV

Project Vicinity (Aerial Photograph)

AUBURN CREEK CHANNEL MAINTENANCE PROJECT



2016 Emergency Maintenance Area (Map 70)/Reach 5

AUBURN CREEK CHANNEL MAINTENANCE PROJECT



Existing Vegetation and Sensitive Biological Resources, Auburn Creek Channel – Map 70/Reach 5

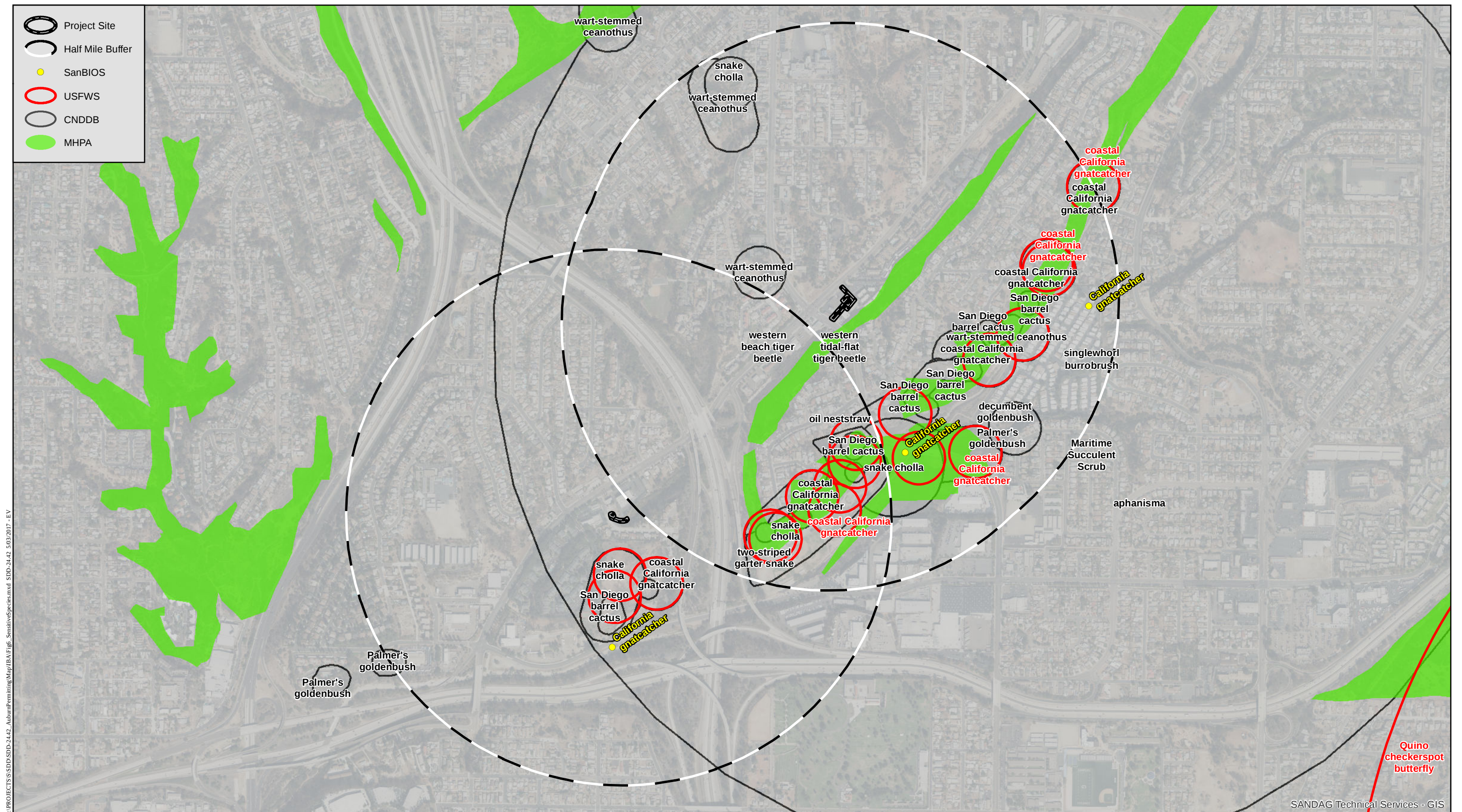
AUBURN CREEK CHANNEL MAINTENANCE PROJECT

I:\PROJECTS\SS\SDD\SDD-24.42_AuburnPermitting\Map\IBA\Fig5b_EnvVegSensRes_76.mxd SDD-24.39 4/25/2017 - EV



Existing Vegetation and Sensitive Biological Resources, Auburn Creek Channel – Map 76/Reach 1

AUBURN CREEK CHANNEL MAINTENANCE PROJECT



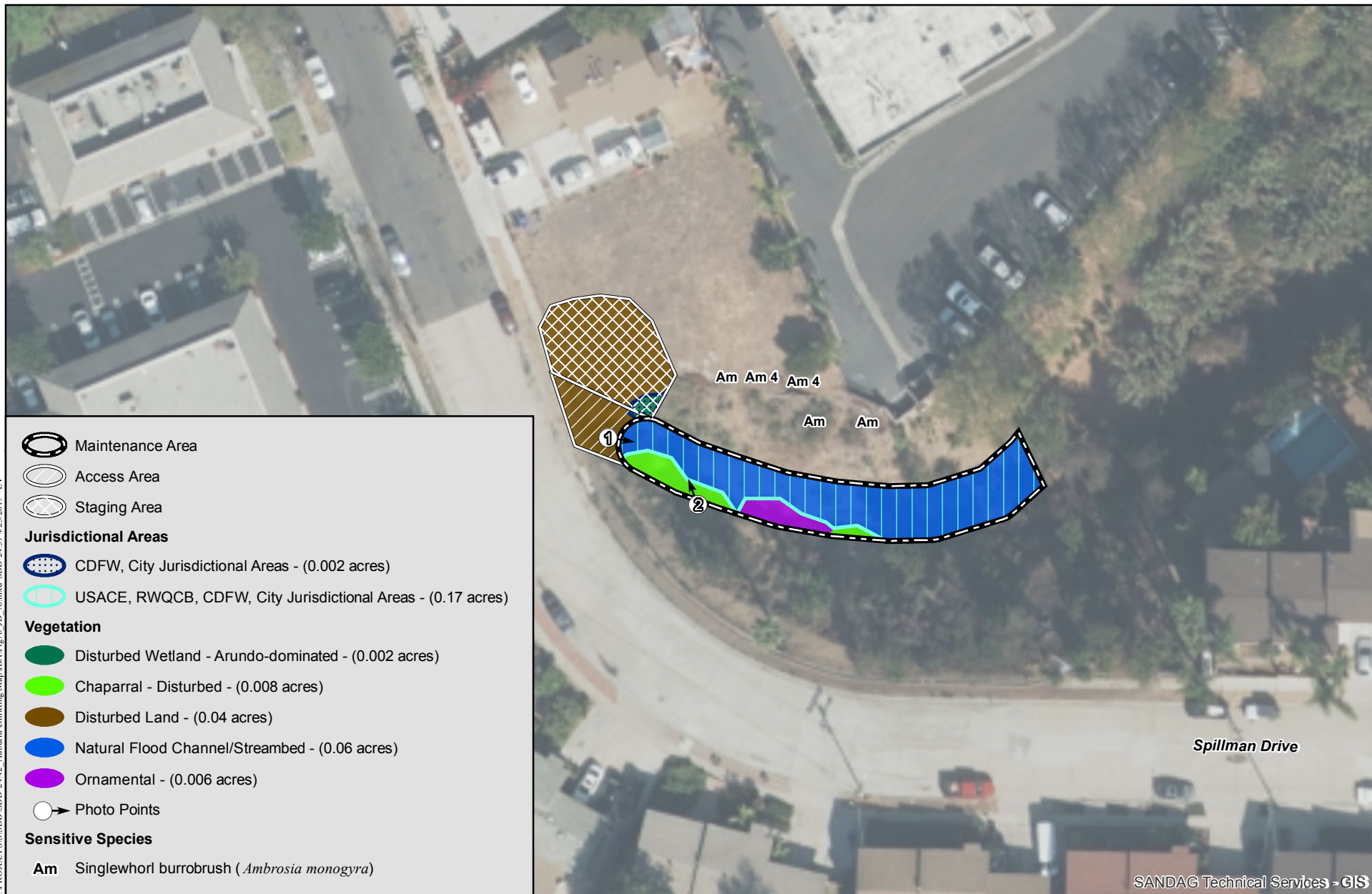
Sensitive Species Occurrences within One-half Mile of the Project Location

AUBURN CREEK CHANNEL MAINTENANCE PROJECT



Jurisdictional Delineation, Auburn Creek Channel – Map 70/Reach 5

AUBURN CREEK CHANNEL MAINTENANCE PROJECT



Jurisdictional Delineation, Auburn Creek Channel – Map 76/Reach 1

AUBURN CREEK CHANNEL MAINTENANCE PROJECT

Figure 7b

Attachment 1

Applicable PEIR Mitigation Measures

Attachment 1

Applicable PEIR Mitigation Measures

GENERAL

General Mitigation 1: Prior to commencement of work, the Assistant Deputy Director (ADD) Environmental Designee of the Entitlements Division shall verify that mitigation measures for impacts to biological resources (Mitigation Measures 4.3.1 through 4.3.20), historical resources (Mitigation Measures 4.4.1 and 4.4.2), land use policy (Mitigation Measures 4.1.1 through 4.1.13), paleontological resources (Mitigation Measure 4.7.1), and water quality (Mitigation Measures 4.8.1 through 4.8.3) have been included in entirety on the submitted maintenance documents and contract specifications, and included under the heading, "Environmental Mitigation Requirements." In addition, the requirements for a Pre-maintenance Meeting shall be noted on all maintenance documents.

General Mitigation 2: Prior to the commencement of work, a Pre-maintenance Meeting shall be conducted and include, as appropriate, the Mitigation Monitoring Coordinator (MMC), Storm Water Division (SWD) Project Manager, Biological Monitor, Historical Monitor, Paleontological Monitor, Water Quality Specialist, and Maintenance Contractor (MC), and other parties of interest.

General Mitigation 3: Prior to the commencement of work, evidence of compliance with other permitting authorities is required, if applicable. Evidence shall include either copies of permits issued, letters of resolution issued by the Responsible Agency documenting compliance, or other evidence documenting compliance and deemed acceptable by the ADD Environmental Designee.

General Mitigation 4: Prior to commencement of work and pursuant to Section 1600 et seq. of the State of California Fish & Game Code, evidence of compliance with Section 1605 is required, if applicable. Evidence shall include either copies of permits issued, letters of resolution issued by the Responsible Agency documenting compliance, or other evidence documenting compliance and deemed acceptable by the ADD Environmental Designee.

BIOLOGICAL RESOURCES

Mitigation Measure 4.3.1: Prior to commencement of any activity within a specific annual maintenance program, a qualified biologist shall prepare an Individual Biological Assessment (IBA) for each area proposed to be maintained. The IBA shall be prepared in accordance with the specifications included in the Master Program.

Mitigation Measure 4.3.2: No maintenance activities within a proposed annual maintenance program shall be initiated before the City's ADD Environmental Designee and state and federal agencies with jurisdiction over maintenance activities have approved the Individual Maintenance Plans (IMPs) and IBAs including proposed mitigation for each of the proposed activities. In their review, the ADD Environmental Designee and agencies shall confirm that the appropriate maintenance protocols have been incorporated into each IMP.

Mitigation Measure 4.3.3: No maintenance activities within a proposed annual maintenance program shall be initiated until the City's ADD Environmental Designee and MMC have approved the qualifications for biologist(s) who shall be responsible for monitoring maintenance activities which may impact sensitive biological resources.

Mitigation Measure 4.3.4: Prior to undertaking any maintenance activity included in an annual maintenance program, a mitigation account shall be established to provide sufficient funds to implement all biological mitigation associated with the proposed maintenance activities. The fund amount shall be determined by the ADD Environmental Designee. The account shall be managed by the City's SWD, with quarterly status reports submitted to Development Services Department (DSD). The status reports shall separately identify upland and wetland account activity. Based upon the impacts identified in the IBAs, money shall be deposited into the account, as part of the project submittal, to ensure available funds for mitigation.

Mitigation Measure 4.3.5: Prior to commencing any activity that could impact wetlands, evidence of compliance with other permitting authorities is required, if applicable. Evidence shall include copies of permits issued, letters of resolution issued by the Responsible Agency documenting compliance, or other evidence documenting compliance and deemed acceptable by the ADD Environmental Designee.

Mitigation Measure 4.3.6: Prior to commencing any activity where the IBA indicates significant impacts to biological resources may occur, a pre-maintenance meeting shall be held on site with the following in attendance: City's SWD Maintenance Manager (MM), MMC, and MC. The biologist selected to monitor the activities shall be present. At this meeting, the monitoring biologist shall identify and discuss the maintenance protocols that apply to the maintenance activities.

At the pre-maintenance meeting, the monitoring biologist shall submit to the MMC and MC a copy of the maintenance plan (reduced to 11"x17") that identifies areas to be protected, fenced, and monitored. This data shall include all planned locations and design of noise attenuation walls or other devices. The monitoring biologist also shall submit a maintenance schedule to the MMC and MC indicating when and where monitoring is to begin and shall notify the MMC of the start date for monitoring.

Mitigation Measure 4.3.7: Within three months following the completion of mitigation monitoring, two copies of a written draft report summarizing the monitoring shall be prepared by the monitoring biologist and submitted to the MMC for approval. The draft monitoring report shall describe the results including any remedial measures that were required. Within 90 days of receiving comments from the MMC on the draft monitoring report, the biologist shall submit one copy of the final monitoring report to the MMC.

Mitigation Measure 4.3.8: Within six months of the end of an annual storm water facility maintenance program, the monitoring biologist shall complete an annual report which shall be distributed to the following agencies: the City of San Diego DSD, California Department of Fish and Wildlife, Regional Water Quality Control Board, U.S. Fish and Wildlife Service, and U.S. Army Corps of Engineers. At a minimum, the report shall contain the following information:

- Tabular summary of the biological resources impacted during maintenance and the mitigation;
- Master table containing the following information for each individual storm water facility or segment that is regularly maintained;
- Date and type of most recent maintenance;
- Description of mitigation which has occurred; and
- Description of the status of mitigation which has been implemented for past maintenance activities.

Mitigation Measure 4.3.9: Wetland impacts resulting from maintenance shall be mitigated in one of the following two ways: (1) habitat creation, restoration, and/or enhancement or (2) mitigation credits. The amount of mitigation shall be in accordance with ratios in Table 4.3-10 unless different mitigation ratios are required by state or federal agencies with jurisdiction over the impacted wetlands. In this event, the mitigation ratios required by these agencies will supersede, and not be in addition to, the ratios defined in Table 4.3-10. No maintenance shall commence until the ADD Environmental Designee has determined that mitigation proposed for a specific maintenance activity meets one of these two options.

Table 4.3-10 WETLAND MITIGATION RATIOS	
WETLAND TYPE	MITIGATION RATIO
Southern riparian forest	3:1
Southern sycamore riparian woodland	3:1
Riparian woodland	3:1
Coastal saltmarsh	4:1
Coastal brackish marsh	4:1
Southern willow scrub	2:1
Mule fat scrub	2:1
Riparian scrub ¹	2:1
Freshwater marsh ²	2:1
Cismontane alkali marsh	4:1
Disturbed wetland	2:1
Streambed/natural flood channel	2:1

¹ Mitigation ratio within the Coastal Zone will be 3:1

² Mitigation ratio within the Coastal Zone will be 4:1

Mitigation locations for wetland impacts shall be selected using the following order of preference, based on the best mitigation value to be achieved.

1. Within impacted watershed, within City limits.
2. Within impacted watershed, outside City limits on City-owned or other publicly-owned land.
3. Outside impacted watershed, within City limits.
4. Outside impacted watershed, outside City limits on City-owned or other publically-owned land.

In order to mitigate for impacts in an area outside the limits of the watershed within which the impacts occur, the SWD must demonstrate to the satisfaction of the ADD Environmental Designee in consultation with the Resource Agencies that no suitable location exists within the impacted watershed.

Mitigation Measure 4.3.10: Whenever maintenance will impact wetland vegetation, a wetland mitigation plan shall be prepared in accordance with the Conceptual Wetland Restoration Plan contained in Appendix H of the Biological Technical Report, included as Appendix D.3 of the PEIR. Mitigation which involves habitat enhancement, restoration, or creation shall include a wetland mitigation plan containing the following information:

- Conceptual planting plan including planting zones, grading, and irrigation;
- Seed mix/planting palette;
- Planting specifications;
- Monitoring program including success criteria; and
- Long-term maintenance and preservation plan.

Mitigation which involves habitat acquisition and preservation shall include the following:

- Location of proposed acquisition;
- Description of the biological resources to be acquired including support for the conclusion that the acquired habitat mitigates for the specific maintenance impact; and
- Documentation that the mitigation area would be adequately preserved and maintained in perpetuity.

Mitigation which involves the use of mitigation credits shall include the following:

- Location of the mitigation bank;
- Description of the credits to be acquired including support for the conclusion that the acquired habitat mitigates for the specific maintenance impact; and
- Documentation that the credits are associated with a mitigation bank which has been approved by the appropriate Resource Agencies.

Mitigation Measure 4.3.11: Upland impacts shall be mitigated through payment into the City's Habitat Acquisition Fund, acquisition and preservation of specific land, or purchase of mitigation credits in accordance with the ratios identified in Table 4.3-11. Upland mitigation shall be completed within six months of the date the related maintenance has been completed.

Table 4.3-11 UPLAND HABITAT MITIGATION RATIOS¹			
Vegetation Type	Tier	Location of Impact with Respect to the MHPA	
		Inside	Outside
Coast live oak woodland	I	2:1	1:1
Scrub oak chaparral	I	2:1	1:1
Southern foredunes	I	2:1	1:1
Beach	I	2:1	1:1
Diegan coastal sage scrub	II	1:1	1:1
Coastal sage-chaparral scrub	II	1:1	1:1
Broom baccharis scrub	II	1:1	1:1
Southern mixed chaparral	IIA	1:1	0.5:1
Non-native grassland	IIIB	1:1	0.5:1
Eucalyptus woodland	IV	--	--
Non-native vegetation/ornamental	IV	--	--
Disturbed habitat/ruderal	IV	--	--
Developed	IV	--	--

¹Assumes mitigation occurs within a Multi-Habitat Planning Area (MHPA)

(Mitigation Measure 4.3.12 not applicable)

Mitigation Measure 4.3.13: Prior to commencing any maintenance activity which may impact sensitive biological resources, the monitoring biologist shall verify that the following actions have been taken, as appropriate:

- Fencing, flagging, signage, or other means to protect sensitive resources to remain after maintenance have been implemented;

- Noise attenuation measures needed to protect sensitive wildlife are in place and effective; and/or
- Nesting raptors have been identified and necessary maintenance setbacks have been established if maintenance is to occur between January 15 and August 31.

The designated biological monitor shall be present throughout the first full day of maintenance, whenever mandated by the associated IBA. Thereafter, through the duration of the maintenance activity, the monitoring biologist shall visit the site weekly to confirm that measures required to protect sensitive resources (e.g., flagging, fencing, noise barriers) continue to be effective. The monitoring biologist shall document monitoring events via a Consultant Site Visit Record. This record shall be sent to the MM each month. The MM will forward copies to MMC.

Mitigation Measure 4.3.14: Whenever off-site mitigation would result in a physical disturbance to the proposed mitigation area, the City will conduct an environmental review of the proposed mitigation plan in accordance with the California Environmental Quality Act (CEQA). If the off-site mitigation would have a significant impact on biological resources associated with the mitigation site, mitigation measures will be identified and implemented in accordance with the Mitigation, Monitoring and Reporting Program (MMRP) resulting from that CEQA analysis.

Mitigation Measure 4.3.15: Impacts to listed or endemic sensitive plant species shall be offset through implementation of one or a combination of the following actions:

- Impacted plants would be salvaged and relocated;
- Seeds from impacted plants would be collected for use at an off-site location;
- Off-site habitat that supports the species impacted shall be enhanced and/or supplemented with seed collected on site; and/or
- Comparable habitat at an off-site location shall be preserved.

Mitigation which involves relocation, enhancement or transplanting sensitive plants shall include the following:

- Conceptual planting plan including grading and, if appropriate, temporary irrigation;
- Planting specifications;
- Monitoring Program including success criteria; and
- Long-term maintenance and preservation plan.

Mitigation Measure 4.3.16: Maintenance activities shall not occur within the following areas:

- 300 feet from any nesting site of Cooper's hawk (*Accipiter cooperii*);
- 1,500 feet from known locations of the southern pond turtle (*Clemmys marmorata pallida*);
- 900 feet from any nesting sites of northern harriers (*Circus cyaneus*);
- 4,000 feet from any nesting sites of golden eagles (*Aquila chrysaetos*); or
- 300 feet from any occupied burrow or burrowing owls (*Athene cunicularia*).

(Mitigation Measure 4.3.17 not applicable)

(Mitigation Measure 4.3.18 not applicable)

(Mitigation Measure 4.3.19 not applicable)

(Mitigation Measure 4.3.20 not applicable)

Mitigation Measure 4.3.21: If maintenance occurs during the raptor breeding season (January 15 to August 31), a pre-maintenance survey for active raptor nests shall be conducted in areas supporting suitable habitat. If active raptor nests are found, maintenance shall not occur within 300 feet of a Cooper's hawk nest, 900 feet of a northern harrier's nest, or 500 feet of any other raptor's nest until any fledglings have left the nest.

Mitigation Measure 4.3.22: If removal of any eucalyptus trees or other trees used by raptors for nesting within a maintenance area is proposed during the raptor breeding season (January 15 through August 31), a qualified biologist shall ensure that no raptors are nesting in such trees. If maintenance occurs during the raptor breeding season, a pre-maintenance survey shall be conducted and no maintenance shall occur within 300 feet of any nesting site of Cooper's hawk or other nesting raptor until the young fledge. Should the biologist determine that raptors are nesting, the trees shall not be removed until after the breeding season. In addition, if removal of grassland or other habitat appropriate for nesting by northern harriers, a qualified biologist shall ensure that no harriers are nesting in such areas. If maintenance occurs during the raptor breeding season, a pre-maintenance survey shall be conducted and no maintenance shall occur within 900 feet of any nesting site of northern harrier until the young fledge.

(Mitigation Measure 4.3.23 not applicable)

(Mitigation Measure 4.3.24 not applicable)

Mitigation Measure 4.3.25: In order to avoid impacts to nesting avian species, including those species not covered by the Multiple Species Conservation Program (MSCP), maintenance within or adjacent to avian nesting habitat shall occur outside of the avian breeding season (January 15 to August 31) unless postponing maintenance would result in a threat to human life or property.

LAND USE

(Mitigation Measure 4.1.1 not applicable)

(Mitigation Measure 4.1.2 not applicable)

(Mitigation Measure 4.1.3 not applicable)

(Mitigation Measure 4.1.4 not applicable)

(Mitigation Measure 4.1.5 not applicable)

Mitigation Measure 4.1.6: A pre-maintenance meeting shall be held with the MC, City representative, and the Project Biologist. The Project Biologist shall discuss the sensitive nature of the adjacent habitat with the crew and subcontractor. Prior to the pre-maintenance meeting, the following shall be completed:

- The SWD shall provide a letter of verification to the Mitigation Monitoring Coordination Section stating that a qualified biologist, as defined in the City of San Diego Biological Resources Guidelines, has been retained to implement the projects MSCP monitoring Program. The letter shall include the names and contact information of all persons involved in the Biological Monitoring of the project. At least 30 days prior to the pre-maintenance meeting, the qualified biologist shall submit all required documentation to MMC, verifying that any special reports, maps, plans and time lines, such as but not limited to, revegetation plans, plant relocation requirements and timing, MSCP requirements, avian or other wildlife protocol surveys, impact avoidance areas, or other such information has been completed and updated.
- The limits of work shall be clearly delineated. The limits of work, as shown on the approved maintenance plan, shall be defined with orange maintenance fencing and checked by the biological monitor before initiation of maintenance. All native plants or species of special concern, as identified in the biological assessment, shall be staked, flagged and avoided within Brush Management Zone 2, if applicable.

Mitigation Measure 4.1.7: Maintenance plans shall be designed to accomplish the following.

- Invasive non-native plant species shall not be introduced into areas adjacent to the MHPA. Landscape plans shall contain non-invasive native species adjacent to sensitive biological areas, as shown on the approved maintenance plan.

- All lighting adjacent to, or within, the MHPA shall be shielded, unidirectional, low pressure sodium illumination (or similar) and directed away from sensitive areas using appropriate placement and shields. If lighting is required for nighttime maintenance, it shall be directed away from the preserve and the tops of adjacent trees with potentially nesting raptors, using appropriate placement and shielding.
- All maintenance activities (including staging areas and/or storage areas) shall be restricted to the disturbance areas shown on the approved maintenance plan. The project biologist shall monitor maintenance activities, as needed, to ensure that maintenance activities do not encroach into biologically sensitive areas beyond the limits of work as shown on the approved maintenance plan.
- No trash, oil, parking or other maintenance-related activities shall be allowed outside the established maintenance areas including staging areas and/or storage areas, as shown on the approved maintenance plan. All maintenance related debris shall be removed off-site to an approved disposal facility.
- Access roads through MHPA-designated areas shall comply with the applicable policies contained in the “Roads and Utilities Construction and Maintenance Policies” identified in Section 1.4.2 of the City’s Subarea Plan.

(Mitigation Measure 4.1.8 not applicable)

THIS PAGE INTENTIONALLY LEFT BLANK

Attachment 2

Plant Species Observed in the
Auburn Creek Channel

Attachment 2
PLANT SPECIES OBSERVED IN THE AUBURN CREEK CHANNEL

Family	Species Name	Common Name	Habitat¹
Native Species²			
Adoxaceae	<i>Sambucus nigra</i> ssp. <i>caerulea</i>	blue elderberry	CHAP
Agavaceae	<i>Yucca schidigera</i>	Mohave yucca	ORN
Anacardiaceae	<i>Malosma laurina</i>	laurel sumac	CHAP
	<i>Rhus integrifolia</i>	lemonadeberry	CHAP
	<i>Toxicodendron diversilobum</i>	poison oak	CHAP, ORN
Asteraceae	<i>Ambrosia monogyra</i>	singlewhorl burrobrush	AR, DL
	<i>Baccharis salicifolia</i>	mule fat	ORN
	<i>Baccharis sarothroides</i>	broom baccharis	CHAP, ORN
	<i>Isocoma menziesii</i>	goldenbush	ORN
Cucurbitaceae	<i>Marah macrocarpa</i>	wild cucumber	AR
Grossulariaceae	<i>Ribes speciosum</i>	fuschia-flowered gooseberry	CHAP
Lamiaceae	<i>Salvia mellifera</i>	black sage	ORN
Polygonaceae	<i>Eriogonum fasciculatum</i>	buckwheat	ORN
Rosaceae	<i>Heteromeles arbutifolia</i>	toyon	CHAP
Salicaceae	<i>Salix gooddingii</i>	Goodding's black willow	NFC
Urticaceae	<i>Urtica urens</i>	dwarf nettle	ORN
Non-native Species³			
Agavaceae	<i>Agave</i> sp.	agave	ORN
	<i>Yucca aloifolia</i>	aloe yucca	ORN
Anacardiaceae	<i>Schinus terebinthifolius</i>	Brazilian pepper tree	ORN
Aizoaceae	<i>Carpobrotus edulis</i>	hottentot-fig	CHAP, DL, ORN
Apiaceae	<i>Foeniculum vulgare</i>	fennel	ORN
Arecaceae	<i>Washingtonia robusta</i>	Mexican fan palm	NFC
Asparagaceae	<i>Asparagus asparagoides</i>	bridal creeper	ORN
Asteraceae	<i>Glebionis coronaria</i>	garland daisy	DL
Brassicaceae	<i>Brassica nigra</i>	black mustard	ORN
Cactaceae	<i>Opuntia ficus-indica</i>	Indian-fig	CHAP
Chenopodiaceae	<i>Salsola tragus</i>	Russian thistle	ORN
Crassulaceae	<i>Crassula ovata</i>	jade plant	ORN
Cyperaceae	<i>Cyperus involucratus</i>	umbrella plant	ORN
Euphorbiaceae	<i>Ricinus communis</i>	castor-bean	AR, ORN
Fabaceae	<i>Acacia</i> sp.	acacia	ORN
	<i>Medicago polymorpha</i>	burclover	ORN
Geraniaceae	<i>Erodium moschatum</i>	green-stem filaree	DL

Attachment 2 (cont.)
PLANT SPECIES OBSERVED IN THE AUBURN CREEK CHANNEL

Family	Species Name	Common Name	Habitat¹
Non-native Species³ (cont.)			
Malvaceae	<i>Malva parviflora</i>	cheeseweed	DL, ORN
Myrtaceae	<i>Melaleuca</i> sp.	bottlebrush	ORN
Oleaceae	<i>Fraxinus</i> sp.	ash	ORN
Oxalidaceae	<i>Oxalis pes-caprae</i>	Bermuda buttercup	ORN
Pinaceae	<i>Pinus</i> sp.	pine	ORN
Poaceae	<i>Arundo donax</i>	giant reed	AR, NFC
	<i>Stipa miliacea</i>	smilo grass	CHAP, ORN
Solanaceae	<i>Nicotiana glauca</i>	tree tobacco	ORN
Tropaeolaceae	<i>Tropaeolum majus</i>	nasturtium	CHAP, ORN
--	--	horticultural plants	CHAP, ORN

¹Habitats: AR=Disturbed Wetland (Arundo-dominated); CHAP = Chaparral (including Disturbed);
DEV=Developed; DL=Disturbed Land; NFC = Natural Flood Channel/Streambed; ORN = Ornamental.

²Sensitive species in boldface

³Invasive species in boldface

Attachment 3

Wildlife Species Observed in the Auburn Creek Channel

Attachment 3
WILDLIFE SPECIES OBSERVED
IN THE AUBURN CREEK CHANNEL

Species Name¹	Common Name
Vertebrates	
• <i>Corvus brachyrhynchos</i>	American crow
• <i>Calypte anna</i>	Anna's hummingbird
• <i>Psaltriparus minimus</i>	bushtit
• <i>Melospiza melodia</i>	song sparrow
• <i>Setophaga coronata</i>	Yellow-rumped warbler
• <i>Procyon lotor</i>	raccoon
• <i>Otospermophilus beecheyi</i>	California ground squirrel

¹Sensitive species in boldface

THIS PAGE INTENTIONALLY LEFT BLANK

Attachment 4

Preliminary Jurisdictional Determination Form

PRELIMINARY JURISDICTIONAL DETERMINATION FORM

This preliminary JD finds that there “*may be*” waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:

District Office File/ORM # PJD Date:

State CA	City/County San Diego, San Diego	Name/ Address of Person Requesting PJD Shelby Howard HELIX Environmental Planning 7578 El Cajon Boulevard La Mesa, CA 91942
Nearest Waterbody: Chollas Creek/Pacific Ocean		
Location: TRS, LatLong or UTM: Township 17 South, Range 2 West on the National City USGS 7.5-minute quadrangle map		

Identify (Estimate) Amount of Waters in the Review Area:	Name of Any Water Bodies on the Site Identified as	Tidal: None
Non-Wetland Waters:	Section 10 Waters:	Non-Tidal: None
linear ft width 0.17 acres Ephemeral		
Wetlands: acre(s) Cowardin Class: Riverine	☐ Office (Desk) Determination ☒ Field Determination:	Date of Field Trip: Feb 6, 2017

SUPPORTING DATA: Data reviewed for preliminary JD (check all that apply - checked items should be included in case file and, where checked and requested, appropriately reference sources below):

- ☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:
- ☐ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
 - ☐ Office concurs with data sheets/delineation report.
 - ☐ Office does not concur with data sheets/delineation report.
- ☐ Data sheets prepared by the Corps
- ☐ Corps navigable waters' study:
- ☒ U.S. Geological Survey Hydrologic Atlas:
 - ☐ USGS NHD data.
 - ☒ USGS 8 and 12 digit HUC maps.
- ☒ U.S. Geological Survey map(s). Cite quad name:
- ☐ USDA Natural Resources Conservation Service Soil Survey. Citation:
- ☐ National wetlands inventory map(s). Cite name:
- ☐ State/Local wetland inventory map(s):
- ☐ FEMA/FIRM maps:
- ☐ 100-year Floodplain Elevation is:
- ☒ Photographs: ☒ Aerial (Name & Date):
☒ Other (Name & Date):
- ☐ Previous determination(s). File no. and date of response letter:
- ☒ Other information (please specify):

IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.

Signature and Date of Regulatory Project Manager
(REQUIRED)

Signature and Date of Person Requesting Preliminary JD
(REQUIRED, unless obtaining the signature is impracticable)

EXPLANATION OF PRELIMINARY AND APPROVED JURISDICTIONAL DETERMINATIONS:

1. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party who requested this preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless, the permit applicant or other person who requested this preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time.

2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring “preconstruction notification” (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an approved JD for the activity, the permit applicant is hereby made aware of the following: (1) the permit applicant has elected to seek a permit authorization based on a preliminary JD, which does not make an official determination of jurisdictional waters; (2) that the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions; (3) that the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) that the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) that undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant’s acceptance of the use of the preliminary JD, but that either form of JD will be processed as soon as is practicable; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an approved JD or a preliminary JD, that JD will be processed as soon as is practicable. Further, an approved JD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33 C.F.R. 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable.

PRELIMINARY JURISDICTIONAL DETERMINATION FORM

This preliminary JD finds that there "may be" waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:

Appendix A - Sites

District Office File/ORM # PJD Date:

State City/County Person Requesting PJD

Site Number	Latitude	Longitude	Cowardin Class	Est. Amount of Aquatic Resource in Review Area	Class of Aquatic Resource
70	32°43'43.89"N	117° 5'55.60"W	Riverine	0.11	Non-Section 10 non-wetland
76	32°43'22.87"N	117° 6'21.09"W	Riverine	0.06	Non-Section 10 non-wetland
			n/a		Non-Section 10 wetland
			n/a		Non-Section 10 wetland

Notes:

Reaches included in the above listed Map numbers:

Map 70/Reach 5 is a constructed earthen-bottom, trapezoidal channel that is 274 feet in length, 12 feet wide at the bottom, and 30 feet wide at the top. The channel is 5 feet deep and contains 1/2 -1 foot of sediment for an estimated total of 150 cubic yards of sediment. It contains 0.11 acre of unvegetated non-wetland waters of the US.

Map 76/Reach 1 is a constructed earthen-bottom, trapezoidal channel that is 160 feet in length, 15 feet wide at the bottom, and 35 feet wide at the top. The channel is 6 feet deep and contains 1/2 -1.5 feet of sediment for an estimated total of 150 cubic yards of sediment. It contains 0.06 acre of unvegetated non-wetland waters of the US.

REFERENCES:

HELIX Environmental Planning, Inc. (HELIX). 2017. Individual Biological Assessment Report. June 9.

2011. Master Storm Water System Maintenance Program Final Program Environmental Impact Report SCH. No. 2005101032; Project No. 42891, APPENDIX D.1 Biological Resources Report. May.

Attachment 5

CRAM Data Sheets and Figures

HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
Suite 200
La Mesa, CA 91942
619.462.1515 tel
619.462.0552 fax
www.helixepi.com



June 9, 2017

Ms. Christine Rothman
City of San Diego – Transportation & Stormwater/Operations & Maintenance
2871 Caminito Chollas, MS#44
San Diego, CA 92105

Subject: CRAM Analysis for the Auburn Creek Channel Maintenance Project

Dear Ms. Rothman,

The letter summarizes the results of a California Rapid Assessment Method (CRAM) analysis conducted for the Auburn Creek Channel Map No. 76 Maintenance Project (project) by HELIX Environmental Planning, Inc. (HELIX). This letter summarizes the methods and results of the CRAM assessment. The CRAM scores will be used to document the condition of the Auburn Creek Channel prior to maintenance and will be used for comparisons with the restoration areas being used to mitigate for channel impacts.

METHODS

The ecological and hydrological condition of the Auburn Creek channel was assessed using the CRAM Riverine Module according to methods outlined in the CRAM User's Manual (California Wetlands Monitoring Workgroup [CWMW] 2013a) and Riverine Field Book (CWMW 2013b). The purpose of CRAM is to provide a rapid, standardized, and scientifically-defensible qualitative assessment of the status of a wetland. HELIX biologist Erica Harris, and one assistant, HELIX Operations Manager Shana Rodriguez, conducted the CRAM assessment on May 22, 2017 for Assessment Area (AA) 76. The CRAM assessment was conducted within one AA: AA-76 covers Auburn Creek Map 76.

Overall CRAM scores were calculated by averaging the scores for each of the three CRAM Attributes. CRAM scores represent the percent of best achievable wetland conditions, and the overall CRAM score depends more on the diversity and levels of all its services than the level of any one service. The diversity and levels of services of a wetland increase with its structural complexity and size.

RESULTS

A summary of the CRAM results is provided in Table 1; the results are explained in text following Table 1. The CRAM assessment data sheets and maps are provided in Attachment A and explain how the scores were calculated.

Table 1* CRAM DATA SUMMARY			
CRAM Attributes	Metrics	AA-76 Score*	
Buffer and Landscape Context	Stream Corridor Continuity	3	
	Buffer Sub-metrics:		
	– Percent of Assessment Area with Buffer	12	
	– Average Buffer Width	3	
	– Buffer Condition	6	
	Attribute Score (Raw/Final)	9.0/37.5	
Hydrology	Water Source	6	
	Channel Stability	9	
	Hydrologic Connectivity	9	
	Attribute Score (Raw/Final)	25.0/69.4	
Structure	Physical	Structural Patch Richness	6
		Topographic Complexity	3
	Attribute Score (Raw/Final)		9.0/37.5
	Biotic	Plant Community Sub-metrics:	
		– Number of Plant Layers Present	6
		– Number of Co-dominant Species	3
		– Percent Invasion	3
		Horizontal Interspersion	6
		Vertical Biotic Structure	3
	Attribute Score (Raw/Final)		13.0/36.1
OVERALL AA SCORE		45	

*Possible scores range from a low of 3 to a high of 12 (with scores of 6 and 9 considered moderate in this assessment). The Raw/Final Attribute Scores are explained in the following discussions of each CRAM Attribute.

Buffer and Landscape Context

Stream Corridor Continuity refers to the spatial association with other areas of aquatic resources, such as other wetlands, and it is assumed that wetlands close to each other interact and are benefited both ecologically and hydrologically. AA-76 received a low score for Stream Corridor Continuity the stream downstream of the AA travels below the underground beneath urban development.

A buffer is the area adjoining an AA that is in a natural or semi-natural state and is currently not dedicated to anthropogenic uses that would severely detract from its ability to entrap contaminants, discourage visitation into the AA by people and non-native predators, or otherwise protect the AA from stress and disturbance. AA-76 had a high percent of the buffer around the AA (100 percent) but scored low for average buffer width. The AA is bounded by residential development and Spillman Avenue, which limits its buffer width to an average 15 meters that is providing minimal wetland protection.

Hydrology

Water Sources include direct inputs of water into an AA, as well as any diversions of water from an AA. Water Sources directly affect the extent, duration, and frequency of saturated or ponded conditions within an AA. Consistent, natural inflows of water to a wetland are important for their ability to perform and maintain most of their intrinsic ecological, hydrological, and societal functions and services. AA-76 received a moderate score for Water Sources. The surrounding area is largely developed, and this area receives primarily urban runoff during the dry season.

Channel Stability is assessed as the degree of channel aggradation (i.e., net accumulation of sediment on the channel bed causing it to rise over time) or degradation (i.e., net loss of sediment from the bed causing it to be lower over time). AA-76 received a moderate score for Channel Stability as it is an earthen bottomed channel with minor signs of either aggradation or degradation, none of which is severe.

Hydrologic Connectivity describes the ability of water to flow into or out of a wetland, or to accommodate rising flood waters without persistent changes in water level that can result in stress to wetland plants and animals. It promotes the exchange of water, sediment, nutrients, and organic carbon. AA-76 is a trapezoidal channel with an entrenchment ratio of 1.8 receiving a moderate score for Hydrologic Connectivity. In this area, flood waters are relatively restricted within the channel and there would be little lateral movement of flood waters to surrounding landscape.

Physical Structure

Structural Patch Richness is the number of different obvious types of physical surfaces or features that may provide habitat for aquatic, wetland, or riparian species. This metric is different from Topographic Complexity (described below) in that it addresses the number of different patch types; Topographic Complexity evaluates the spatial arrangement and interspersions of the

patch types. AA-76 received a moderate score for Structural Patch Richness in that it supported 4 patch types out of a total of 12.

Topographic Complexity refers to the micro- and macro-topographic relief within a wetland due to abiotic features and elevations gradients. AA-76 received a low score for Topographic Complexity since it is a trapezoidal channel, lacking an obvious bench, and had little microtopography present.

Biotic Structure

Plant Community Sub-metrics

AA-76 received a moderate score for the number of plant layers present (two layers) and low scores for the number of co-dominant species (i.e., the dominant plant species richness in each plant layer for the AA; 4 species) and the percent invasion of co-dominant species in the plant layers (i.e., 75 percent).

Horizontal Interspersion

Horizontal Interspersion refers to the variety and interspersion of plant “zones.” The existence of multiple horizontal plant zones indicates a well-developed plant community and predictable sedimentary and bio-chemical processes. Richer native communities of plants and animals tend to be associated with greater zonation and more interspersion. AA-76 is represented by two plant zones with a minimal amount of edge between them and scored moderate for Horizontal Interspersion.

Vertical Biotic Structure

Vertical Biotic Structure is the degree of overlap among plant layers (i.e., those used to assess the Plant Community Sub-metrics described above). The overall ecological diversity of a wetland tends to correlate with the vertical complexity of the wetland vegetation. AA-76 demonstrated minimal, less than 25 percent, plant layer overlap and received a low score for this CRAM attribute.

Overall CRAM Score

Overall CRAM scores are calculated by averaging the scores for each of the three CRAM Attributes. CRAM scores represent the percent of best achievable wetland conditions, and the overall CRAM score depends more on the diversity and levels of all its services than the level of any one service. The diversity and levels of services of a wetland increase with its structural complexity and size. While the Auburn Creek channel is an earthen-bottom flood control channel and has moderate to high scores for hydrology and physical structure, its location within an urbanized area and its dominance by an invasive plant species render low scores for buffer and landscape context and biotic structure. The overall CRAM score for AA-76 was 45. CRAM scores obtained in 2017 will be used to document the condition of Auburn Creek Channel prior to maintenance, and will be used for comparisons with restoration areas being used to mitigate

Letter to Ms. Christine Rothman
June 9, 2017

Page 5 of 6

for channel impacts. Because CRAM results are available on a statewide database, these CRAM scores may also be used for comparison with other projects.

Please don't hesitate to contact me or Jasmine Bakker at (619) 462-1515 if you have any questions.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Erica Harris', with a stylized flourish at the end.

Erica Harris
Biologist

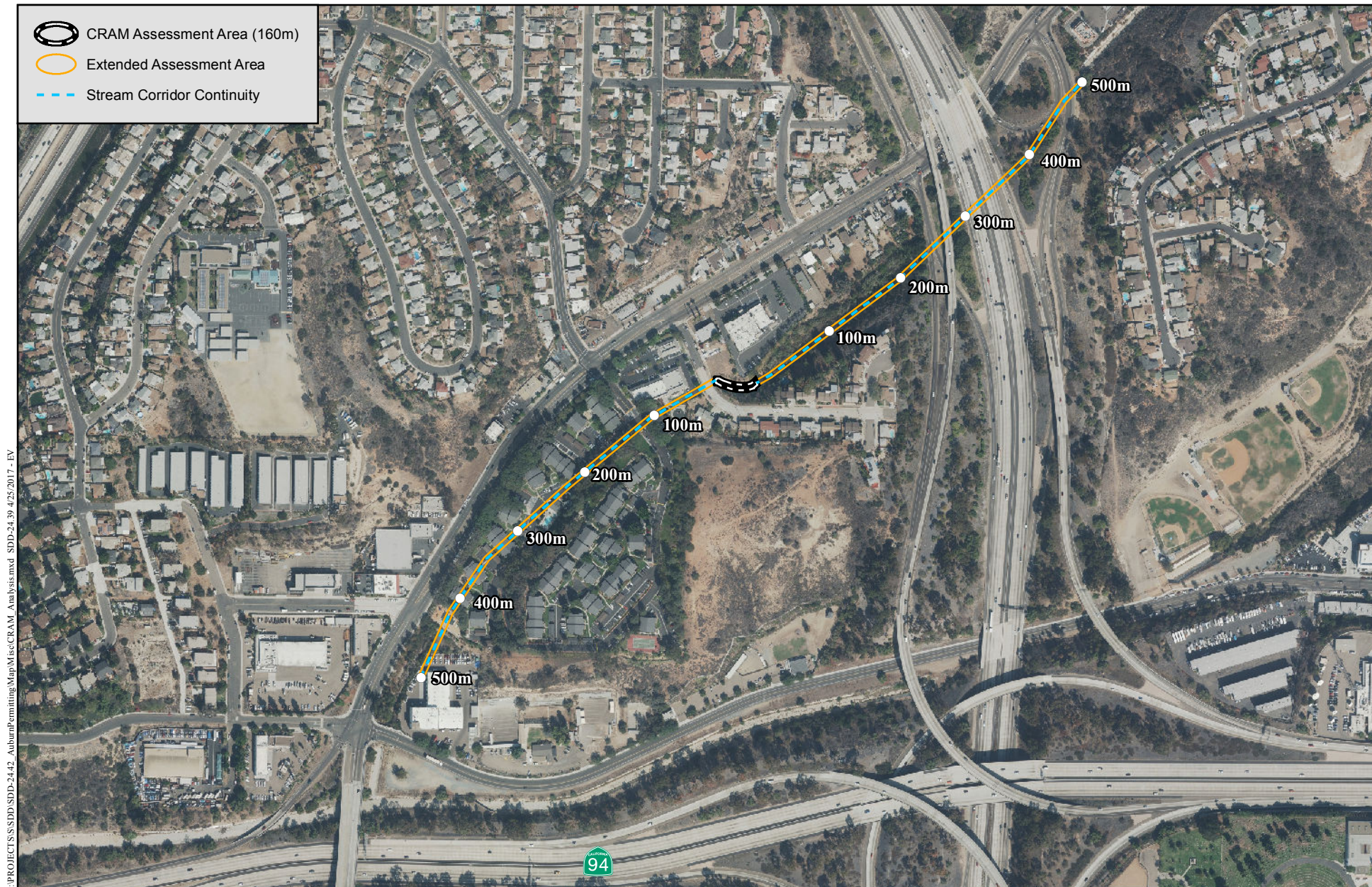
Enclosures:

Figure 1 Auburn Creek CRAM Assessment – Map 76
Attachment A CRAM Worksheets

REFERENCES

California Wetlands Monitoring Workgroup (CWMW). 2013a. California Rapid Assessment Method (CRAM) for Wetlands, Version 6.1 pp. 67. April. Available at: <http://www.cramwetlands.org/documents>.

2013b *California Rapid Assessment Method (CRAM) for Wetlands, Riverine Wetlands Field Book* Version 6.1, 46 pp. January. Available at: <http://www.cramwetlands.org/documents>.



Auburn Creek CRAM Analysis - Map 76

AUBURN CHANNEL MAINTENANCE PROJECT

Figure 1

Basic Information Sheet: Riverine Wetlands

Assessment Area Name: Auburn map to maintenance sunday	
Project Name: Auburn Creek Channel maintenance	
Assessment Area ID #: AA2	
Project ID #: SDD-2442	Date: 5/22/17
Assessment Team Members for This AA:	
Erica Harris	
Shana Rodriguez	
Average Bankfull Width: 14 ft = 4.3 meters	
Approximate Length of AA (10 times bankfull width, min 100 m, max 200 m): 60	
Upstream Point Latitude: 32°43'23.00"N Longitude: 117°00'21.95"W	
Downstream Point Latitude: 32°43'23.33"N Longitude: 117°00'19.09"W	
Wetland Sub-type:	
☒ Confined ☐ Non-confined	
AA Category:	
☐ Restoration ☐ Mitigation ☐ Impacted ☐ Ambient ☐ Reference ☐ Training ☒ Other: periodically maintained storm water channel	
Did the river/stream have flowing water at the time of the assessment? ☐ yes ☒ no	
What is the apparent hydrologic flow regime of the reach you are assessing? The hydrologic flow regime of a stream describes the frequency with which the channel conducts water. <i>Perennial</i> streams conduct water all year long, whereas <i>ephemeral</i> streams conduct water only during and immediately following precipitation events. <i>Intermittent</i> streams are dry for part of the year, but conduct water for periods longer than ephemeral streams, as a function of watershed size and water source. ☐ perennial ☐ intermittent ☒ ephemeral	

Photo Identification Numbers and Description:

	Photo ID No.	Description	Latitude N	Longitude W	Datum
1	1	Upstream	32°43'23.30"	117°00'20.04"	
2	2	Middle Left	32°43'23.10"	117°00'20.85"	
3	3	Middle Right	32°43'22.80"	117°00'22.07"	
4	4	Downstream	32°43'22.99"	117°00'21.87"	
5					
6					
7					
8					
9					
10					

Site Location Description:

earthen bottomed storm drain
channeled with portions of
concrete reinforced slopes
(SW bank)

Comments:

Scoring Sheet: Riverine Wetlands

AA Name: <u>AA2</u>				Date: <u>5/22/17</u>		
Attribute 1: Buffer and Landscape Context (pp. 11-19)				Comments		
Stream Corridor Continuity (D)		Alpha.	Numeric	<u>downstream goes underground</u>		
		<u>D</u>	<u>3</u>			
Buffer:				<u>100% buffer</u>		
Buffer submetric A: Percent of AA with Buffer	Alpha.			Numeric	<u>avg = 15m</u>	
<u>A</u>	<u>12</u>					
Buffer submetric B: Average Buffer Width	<u>D</u>			<u>3</u>		
Buffer submetric C: Buffer Condition	<u>C</u>	<u>6</u>	<u>>75% NN + moderate human visitation</u>			
Raw Attribute Score = $D + [C \times (A \times B)^{1/2}]^{1/2}$			<u>9</u>	Final Attribute Score = (Raw Score/24) x 100	<u>37.5</u>	
Attribute 2: Hydrology (pp. 20-26)						
Water Source		Alpha.	Numeric	<u>>20% urban runoff</u>		
		<u>C</u>	<u>6</u>			
Channel Stability		<u>B</u>	<u>9</u>	<u>some signs of degradation</u>		
Hydrologic Connectivity		<u>B</u>	<u>9</u>	<u>ratio = 1.8</u>		
Raw Attribute Score = sum of numeric scores			<u>25</u>	Final Attribute Score = (Raw Score/36) x 100	<u>69.4</u>	
Attribute 3: Physical Structure (pp. 27-33)						
Structural Patch Richness		Alpha.	Numeric	<u>4 patch types</u>		
		<u>C</u>	<u>6</u>			
Topographic Complexity		<u>D</u>	<u>3</u>	<u>no benches trapezoidal channel</u>		
Raw Attribute Score = sum of numeric scores			<u>9</u>	Final Attribute Score = (Raw Score/24) x 100	<u>37.5</u>	
Attribute 4: Biotic Structure (pp. 34-41)						
Plant Community Composition (based on sub-metrics A-C)						
Plant Community submetric A: Number of plant layers		Alpha.	Numeric	<u>2 layers</u>		
		<u>C</u>	<u>6</u>			
Plant Community submetric B: Number of Co-dominant species		<u>D</u>	<u>3</u>	<u>4 co-dom</u>		
Plant Community submetric C: Percent Invasion		<u>D</u>	<u>3</u>	<u>75% invasion</u>		
Plant Community Composition Metric (numeric average of submetrics A-C)			<u>4</u>			
Horizontal Interspersion		<u>C</u>	<u>6</u>	<u>low degree of interspersion</u>		
Vertical Biotic Structure		<u>D</u>	<u>3</u>	<u><25% overlap</u>		
Raw Attribute Score = sum of numeric scores			<u>13</u>	Final Attribute Score = (Raw Score/36) x 100	<u>36.1</u>	
Overall AA Score (average of four final Attribute Scores)				<u>45.1 = 45</u>		

Worksheet for Stream Corridor Continuity Metric for Riverine Wetlands

Lengths of Non-buffer Segments For Distance of 500 m Upstream of AA		Lengths of Non-buffer Segments For Distance of 500 m Downstream of AA	
Segment No.	Length (m)	Segment No.	Length (m)
1	0	1	100
2	0	2	100
3	100	3	100
4	0	4	100
5	0	5	100
Upstream Total Length	100	Downstream Total Length	500

Percent of AA with Buffer Worksheet

In the space provided below make a quick sketch of the AA, or perform the assessment directly on the aerial imagery; indicate where buffer is present, estimate the percentage of the AA perimeter providing buffer functions, and record the estimate amount in the space provided.

Percent of AA with Buffer: 100 %

Worksheet for calculating average buffer width of AA

Line	Buffer Width (m)
A	33
B	10
C	11
D	16
E	10
F	18
G	10
H	13
Average Buffer Width *Round to the nearest integer*	15

Worksheet for Assessing Channel Stability for Riverine Wetlands

Condition	Field Indicators (check all existing conditions)
Indicators of Channel Equilibrium	☒ The channel (or multiple channels in braided systems) has a well-defined bankfull contour that clearly demarcates an obvious active floodplain in the cross-sectional profile of the channel throughout most of the AA. ☐ Perennial riparian vegetation is abundant and well established along the bankfull contour, but not below it. ☐ There is leaf litter, thatch, or wrack in most pools (if pools are present). ☐ The channel contains embedded woody debris of the size and amount consistent with what is naturally available in the riparian area. ☒ There is little or no active undercutting or burial of riparian vegetation. ☐ If mid-channel bars and/or point bars are present, they are not densely vegetated with perennial vegetation. ☐ Channel bars consist of well-sorted bed material (smaller grain size on the top and downstream end of the bar, larger grain size along the margins and upstream end of the bar). ☐ There are channel pools, the spacing between pools tends to be regular and the bed is not planar throughout the AA ☐ The larger bed material supports abundant mosses or periphyton.
Indicators of Active Degradation	☐ The channel is characterized by deeply undercut banks with exposed living roots of trees or shrubs. ☐ There are abundant bank slides or slumps. ☐ The lower banks are uniformly scoured and not vegetated. ☐ Riparian vegetation is declining in stature or vigor, or many riparian trees and shrubs along the banks are leaning or falling into the channel. ☐ An obvious historical floodplain has recently been abandoned, as indicated by the age structure of its riparian vegetation. ☐ The channel bed appears scoured to bedrock or dense clay. ☐ Recently active flow pathways appear to have coalesced into one channel (i.e. a previously braided system is no longer braided). ☒ The channel has one or more knickpoints indicating headward erosion of the bed.
Indicators of Active Aggradation	☒ There is an active floodplain with fresh splays of coarse sediment (sand and larger that is not vegetated) deposited in the current or previous year. ☐ There are partially buried living tree trunks or shrubs along the banks. ☒ The bed is planar (flat or uniform gradient) overall; it lacks well-defined channel pools, or they are uncommon and irregularly spaced. ☐ There are partially buried, or sediment-choked, culverts. ☒ Perennial terrestrial or riparian vegetation is encroaching into the channel or onto channel bars below the bankfull contour. ☐ There are avulsion channels on the floodplain or adjacent valley floor.
Overall	☐ Equilibrium ☒ Degradation ☐ Aggradation

Riverine Wetland Entrenchment Ratio Calculation Worksheet

The following 5 steps should be conducted for each of 3 cross-sections located in the AA at the approximate midpoints along straight riffles or glides, away from deep pools or meander bends. An attempt should be made to place them at the top, middle, and bottom of the AA.

Steps	Replicate Cross-sections —————→	TOP	MID	BOT
1 Estimate bankfull width.	This is a critical step requiring familiarity with field indicators of the bankfull contour. Estimate or measure the distance between the right and left bankfull contours.	14'	17'	11'
2: Estimate max. bankfull depth.	Imagine a level line between the right and left bankfull contours; estimate or measure the height of the line above the thalweg (the deepest part of the channel).	4"	8"	5"
3: Estimate flood prone depth.	Double the estimate of maximum bankfull depth from Step 2.	8"	16"	10"
4: Estimate flood prone width.	Imagine a level line having a height equal to the flood prone depth from Step 3; note where the line intercepts the right and left banks; estimate or measure the length of this line.	30'	29'	18'
5: Calculate entrenchment ratio.	Divide the flood prone width (Step 4) by the bankfull width (Step 1).	2.1	1.7	1.6
6: Calculate average entrenchment ratio.	Calculate the average results for Step 5 for all 3 replicate cross-sections. Enter the average result here and use it in Table 13a or 13b.	1.8		

Structural Patch Type Worksheet for Riverine wetlands

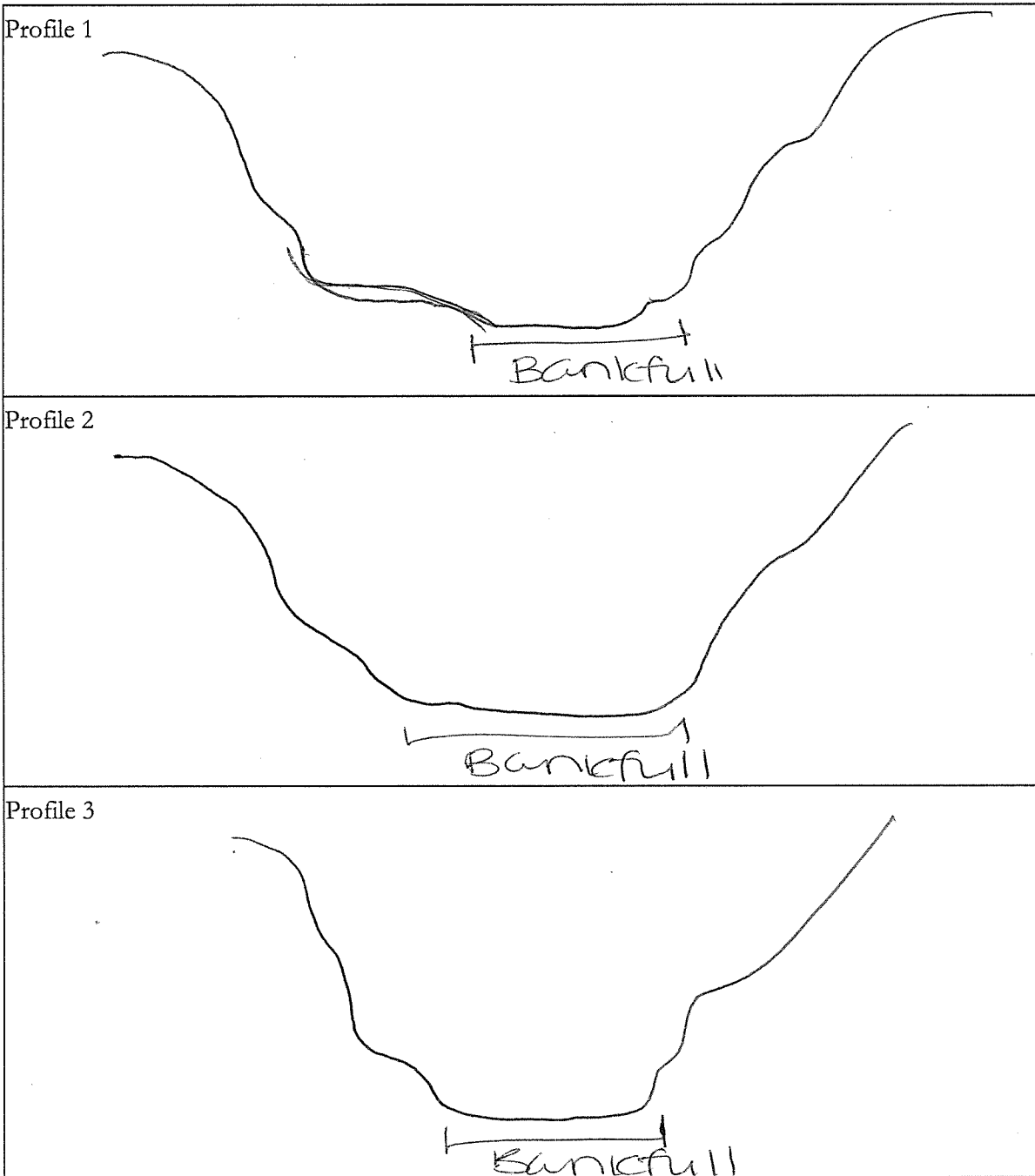
Circle each type of patch that is observed in the AA and enter the total number of observed patches in Table below. In the case of riverine wetlands, their status as confined or non-confined must first be determined (see page 6) to determine with patches are expected in the system (indicated by a "1" in the table below). Any feature onsite should only be counted once as a patch type. If a feature appears to meet the definition of more than one patch type (i.e. swale and secondary channel) the practitioner should choose which patch type best illustrates the feature. Not all features at a site will be patch types.

**Please refer to the CRAM Photo Dictionary at www.cramwetlands.org for photos of each of the following patch types.*

STRUCTURAL PATCH TYPE (circle for presence)	Riverine (Non-confined)	Riverine (Confined)
Minimum Patch Size	3 m ²	3 m ²
Abundant wrackline or organic debris in channel, on floodplain	1	1
Bank slumps or undercut banks in channels or along shoreline	1	1
Cobbles and/or Boulders	1	1
Debris jams	1	1
Filamentous macroalgae or algal mats	1	1
Large woody debris	1	1
Pannes or pools on floodplain	1	N/A
Plant hummocks and/or sediment mounds	1	1
Point bars and in-channel bars	1	1
Pools or depressions in channels (wet or dry channels)	1	1
Riffles or rapids (wet or dry channels)	1	1
Secondary channels on floodplains or along shorelines	1	N/A
Standing snags (at least 3 m tall)	1	1
Submerged vegetation	1	N/A
Swales on floodplain or along shoreline	1	N/A
Variegated, convoluted, or crenulated foreshore (instead of broadly arcuate or mostly straight)	1	1
Vegetated islands (mostly above high-water)	1	N/A
Total Possible	17	12
No. Observed Patch Types (enter here and use in Table 14 below)		

Worksheet for AA Topographic Complexity

At three locations along the AA, make a sketch of the profile of the stream from the AA boundary down to its deepest area then back out to the other AA boundary. Try to capture the benches and the intervening micro-topographic relief. To maintain consistency, make drawings at each of the stream hydrologic connectivity measurements, always facing downstream. Include the water level, an arrow at the bankfull contour, and label the benches. Based on these sketches and the profiles in Figure 10, choose a description in Table 16 that best describes the overall topographic complexity of the AA.



Plant Community Metric Worksheet: Co-dominant species richness for Riverine wetlands
(A dominant species represents $\geq 10\%$ *relative* cover)

Special Note:

* Combine the counts of co-dominant species from all layers to identify the total species count. Each plant species is only counted once when calculating the Number of Co-dominant Species and Percent Invasion submetric scores, regardless of the numbers of layers in which it occurs.

Floating or Canopy-forming (non-confined only)	Invasive?	Short (<0.5 m)	Invasive?
Medium (0.5-1.5 m)	Invasive?	Tall (1.5-3.0 m)	Invasive?
NN Agave	X		
Stipa piliacea	X		
Very Tall (>3.0 m)	Invasive?	Total number of co-dominant species for all layers combined (enter here and use in Table 18)	4
Anurodonax	X	Percent Invasion *Round to the nearest integer* (enter here and use in Table 18)	75%
Saxifraga			

Horizontal Interspersion Worksheet.

Use the spaces below to make a quick sketch of the AA in plan view, outlining the major plant zones (this should take no longer than 10 minutes). Assign the zones names and record them on the right. Based on the sketch, choose a single profile from Figure 12 that best represents the AA overall.

upstream downstream	Assigned zones: 1) <i>Salix gooddingii</i> 2) <i>Amirao</i> 3) <i>Stipa</i> <i>mitacea</i> 4) 5) 6)
---	--

Worksheet for Wetland disturbances and conversions

Has a major disturbance occurred at this wetland?	Yes	<u>No</u>		
If yes, was it a flood, fire, landslide, or other?	flood	fire	landslide	other
If yes, then how severe is the disturbance?	likely to affect site next 5 or more years	likely to affect site next 3-5 years	likely to affect site next 1-2 years	
Has this wetland been converted from another type? If yes, then what was the previous type?	depressional	vernal pool	vernal pool system	
	non-confined riverine	confined riverine	seasonal estuarine	
	perennial saline estuarine	perennial non-saline estuarine	wet meadow	
	lacustrine	seep or spring	playa	

Stressor Checklist Worksheet

HYDROLOGY ATTRIBUTE (WITHIN 50 M OF AA)	Present	Significant negative effect on AA
Point Source (PS) discharges (POTW, other non-stormwater discharge)		
Non-point Source (Non-PS) discharges (urban runoff, farm drainage)	X	X
Flow diversions or unnatural inflows		
Dams (reservoirs, detention basins, recharge basins)		
Flow obstructions (culverts, paved stream crossings)		X
Weir/drop structure, tide gates		
Dredged inlet/channel		
Engineered channel (riprap, armored channel bank, bed)	X	
Dike/levees		
Groundwater extraction		
Ditches (borrow, agricultural drainage, mosquito control, etc.)		
Actively managed hydrology		
Comments		
storm drain goes under spillway drive, SW bank concreted riprap		

PHYSICAL STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present	Significant negative effect on AA
Filling or dumping of sediment or soils (N/A for restoration areas)	X	
Grading/ compaction (N/A for restoration areas)		
Plowing/Discing (N/A for restoration areas)		
Resource extraction (sediment, gravel, oil and/or gas)		
Vegetation management		
Excessive sediment or organic debris from watershed		
Excessive runoff from watershed		X
Nutrient impaired (PS or Non-PS pollution)	X	
Heavy metal impaired (PS or Non-PS pollution)		
Pesticides or trace organics impaired (PS or Non-PS pollution)		
Bacteria and pathogens impaired (PS or Non-PS pollution)		
Trash or refuse	X	
Comments		
storm drain subjected to flash floods; urbanized area with human visitation & refuse		

BIOTIC STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present	Significant negative effect on AA
Mowing, grazing, excessive herbivory (within AA)		
Excessive human visitation	X	
Predation and habitat destruction by non-native vertebrates (e.g., <i>Virginia opossum</i> and domestic predators, such as feral pets)	X	
Tree cutting/sapling removal		
Removal of woody debris		
Treatment of non-native and nuisance plant species		
Pesticide application or vector control		
Biological resource extraction or stocking (fisheries, aquaculture)		
Excessive organic debris in matrix (for vernal pools)		
Lack of vegetation management to conserve natural resources		X
Lack of treatment of invasive plants adjacent to AA or buffer		X
Comments		
Drainage subject to human visitation dominated by invasives; lots of <i>Anurdo donax</i>		

BUFFER AND LANDSCAPE CONTEXT ATTRIBUTE (WITHIN 500 M OF AA)	Present	Significant negative effect on AA
Urban residential		X
Industrial/commercial	X	
Military training/Air traffic		
Dams (or other major flow regulation or disruption)		
Dryland farming		
Intensive row-crop agriculture		
Orchards/nurseries		
Commercial feedlots		
Dairies		
Ranching (enclosed livestock grazing or horse paddock or feedlot)		
Transportation corridor	X	
Rangeland (livestock rangeland also managed for native vegetation)		
Sports fields and urban parklands (golf courses, soccer fields, etc.)	X	
Passive recreation (bird-watching, hiking, etc.)		
Active recreation (off-road vehicles, mountain biking, hunting, fishing)		
Physical resource extraction (rock, sediment, oil/gas)		
Biological resource extraction (aquaculture, commercial fisheries)		
Comments		
Located in urbanized setting with residential + commercial development in area		