

INDIVIDUAL BIOLOGICAL ASSESSMENT REPORT

Site Name/Facility: Tijuana River Pilot Channel and Smuggler's Gulch Channel

Master Program
Map No.: 138a, 138b, 138c (Tijuana River Pilot Channel) and
138 and 139 (Smuggler's Gulch Channel)

Date: October 26, 2012

Biologist Name/Cell
Phone No.: Catherine MacGregor / 858.812.8288

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 preparing 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 (MMP) (City of San Diego 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) components conducted within the Tijuana River Pilot (Pilot) Channel and the Smuggler's Gulch (SG) Channel in order to comply with the MMP's Programmatic Environmental Impact Report (PEIR) (City of San Diego 2011b).

IBA procedures under the MMP provide the guidelines for an in-depth inspection of the proposed maintenance activity site including access routes, and temporary spoils storage and staging areas. A qualified biologist will determine 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) of the PEIR and the MMP protocols. This document provides a summary of the biological resources associated with the stormwater facility, quantification of impacts to sensitive biological resources, and the nature of mitigation measures required to mitigate for those impacts, if any found.

Project Description

The channels associated with this assessment report are located in the Tijuana River Valley (Valley), within the jurisdiction of the City of San Diego (City) (Figure 1). The

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Tijuana River watershed covers an area of approximately 1,725 square miles, of which 73 percent is located in Mexico and 27 percent in the United States. The main Tijuana River flows in a northwesterly direction from the international border into the Valley and City jurisdiction. Approximately 21.9 square miles of the watershed (~1% of the total watershed area) is within City jurisdiction.

The Tijuana River National Estuarine Research Reserve (TRNERR) and a portion of the City of Imperial Beach are generally west of the project area located adjacent to the Tijuana River's discharge to the Pacific Ocean. The Otay-Nestor community and the United States Naval Outlying Landing Field Imperial Beach are located north of the project area; and the community of San Ysidro is located to the east.

The Pilot Channel is included on MMP Maps 138a through 138c and the SG Channel is included on MMP Maps 138 and 139 (City of San Diego 2011a). The Pilot and SG Channels are generally located in the Valley roughly bordered by Hollister Street to the east and Monument Road to the south. The Tijuana River low flow channel splits into what are commonly referred to as the Tijuana River's Northern and Southern Channels approximately 800 feet east of Hollister Street. The Pilot Channel follows the Southern Channel.

The Valley, including the project area, is within the Federal Emergency Management Agency's (FEMA) Special Flood Hazard Areas Subject to Inundation by the 1-percent Annual Chance Flood (100-year floodplain). The project areas are zoned OF-1-1 (Open Space-Floodplain) and AR-1-1 (Agricultural/Residential); and are designated for Open Space and Agricultural land uses in the Tijuana River Valley Land Use Plan. In addition, the project area is within the boundaries of the County of San Diego's 2.7 square mile Tijuana River Valley Regional Park (Regional Park). The project area is also within the City's Multiple Species Conservation Program's Multi-Habitat Planning Area (MHPA).

The project consists of maintenance and dredging of the Pilot and SG channels to remove anthropogenic-derived sediment and trash that accumulates as a result of development and other practices in the upstream watershed. The removal of sediment and trash conducted to maintain flow conveyance capacities and reduce the risk of flooding to public and private infrastructure in the Valley.

Pilot Channel

The Pilot Channel was originally excavated in 1993 within the Southern Channel. It has been irregularly maintained since that time as an earthen trapezoidal channel that is approximately 5 feet deep, with a 23-foot top width, and a 15-foot streambed width. According to the MMP, the Pilot Channel was constructed to divert wet-weather flows from 2- to 5-year storm events into the Southern Channel (City of San Diego 2011b).

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The Pilot Channel stretches from 100 feet east to 5,300 feet west of Hollister Street for a total length of 5,400 feet and it flows roughly in an east-west direction.

SG Channel

The SG Channel is an existing historical agricultural channel with manufactured berms. The contributing sub-watershed area is approximately 6.7 square miles, primarily located south of the international border within Canon de los Mataderos. The SG Channel, as originally constructed, is an earthen channel approximately 20 feet wide and 15 feet deep. The SG Channel is tributary to the South Channel and flows in a northerly direction, from the international border past Monument Road until it confluences with the Pilot Channel. The portion of the SG Channel maintained by the City extends for a distance of approximately 3,040 feet.

Survey Methods and Date:

URS conducted research and review of existing project documentation as part of this biological assessment. Document review included the Master Storm Water System Maintenance Program, Army Corps of Engineers (ACOE) Permit SPL-2009-00719-RRS, United States Fish and Wildlife Service (USFWS) Formal Section 7 Consultation on the Tijuana River Valley Channel Maintenance Project (Biological Opinion) (FWS-SDG-08B0600-10F0001), Final Recirculated MMP PEIR, California Coastal Commission Coastal Development Permit A-6-NOC-11-086 and addendum, California Department of Fish and Game (CDFG) Streambed Alteration Agreement 1600-2011-0271-R5, California Regional Water Quality Control Board (RWQCB) Water Quality Certification 09C-077, Final Monitoring Report for the Tijuana River Valley Channel Maintenance Project (Dudek 2011a), and Errata - Biological Resource Technical Report and Conceptual Wetlands Mitigation Plan (Dudek 2011b). The project 7.5 minute quadrangle (Imperial Beach) and surrounding quadrangles were searched in the California Natural Diversity Database (CNDDDB) RareFind4 database for rare species occurrences in or near the project area. The channels are located on property owned by the City of San Diego and County of San Diego, within the City of San Diego's Multiple Species Conservation Program's Multi-Habitat Planning Area (MHPA), as shown in Figure 2.

URS conducted biological surveys and site assessments on October 23 and 30, and November 14, 2012. On October 23, SG Channel was accessed from Monument Road and surveyed with 100 percent coverage from Monument Road to the junction with the Pilot Channel, and the Pilot Channel was accessed from Monument Road, Hollister Street, and the TRVRP staging area, and surveyed with 100 percent coverage from the east end to approximately 600 feet west of the junction with SG Channel. On October 30, the Pilot Channel was accessed from the TRVRP staging area and surveyed from due

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south of the Saturn Boulevard alignment (to the north) to the western end of the Pilot Channel. These surveys consisted of walking in and along the channels to map vegetation both in and adjacent to the maintenance areas. Because sections of the Pilot Channel west of the junction with SG Channel were too densely vegetated with invasive species (primarily giant reed [*Arundo donax*]) to permit 100 percent survey coverage within the channel, the channel in this area was evaluated at three locations, and surveyed from outside the densest invasive vegetation between those locations. On November 14, 2012, Staging Areas B and D were surveyed for biological resources. Vegetation was mapped based on site observations and interpretation of 2010 aerial photographic signatures (scale 1"=50'), according to the R.F. Holland system (1986) as modified for San Diego County, in accordance with the City of San Diego "Guidelines for Conducting Biological Surveys" (2002). For consistency with the PEIR and original Biological Resources Technical Report, this IBA report has used the 1996 version of the Oberbauer modification for San Diego County with limited project-specific customization originally used in the Biological Technical Report. Observed plant and animal species were recorded. Observed sensitive species were documented and potential for sensitive species occurrence was evaluated based on site conditions. Representative photographs taken during the surveys are provided in this report. Potential limitations on the comprehensiveness of these biological surveys consist of survey timing: these fall surveys could have missed spring-blooming annual plants, certain migratory bird species, and nocturnal wildlife.

Biological Resources:

Stream Type:	Perennial	<input type="checkbox"/>	Intermittent	<input checked="" type="checkbox"/>	Ephemeral	<input checked="" type="checkbox"/>
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SG Gulch Channel:

SG Channel (covered by Map 139 and Map 138, Figures 3 and 4) has a natural bottom of sand and small patches of cobble. Channel banks vary in steepness from nearly vertical to approximately 45 degrees. The 20-foot wide maintenance area contains the following vegetation categories (with Holland/Oberbauer classification numbers in parentheses): Non-Vegetated Channel (13200), Non-Native Vegetation (11000), Disturbed Habitat-Ruderal (11300), Disturbed Habitat-Bare Ground (11300), and Southern Riparian Forest (61300) (see PEIR Appendix D.1 [Biological Resources Report] for descriptions of vegetation categories.)

The Non-Vegetated Channel supports a sparse mix of invasive non-native plants such as castor bean (*Ricinus communis*), tree tobacco (*Nicotiana glauca*), Mexican tea (*Dysphania ambrosioides*), and stinkwort (*Dittrichia graveolens*) (photographs 1 and 2). The banks of the channel support primarily invasive non-native vegetation classified as either Non-Native Vegetation, which was dominated by large, old tamarisk trees

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(*Tamarix aphylla*), or Disturbed/Ruderal, characterized by invasive shrubs and herbs such as castor bean, tree tobacco, garland daisy (*Glebionis coronaria*), and wild radish (*Raphanus sativus*) (photographs 1, 2 and 3). Patches of giant reed are present in some locations on and beyond the banks (photographs 2 and 3). At the northern end of Map 138 (Figure 4), near the junction with the Pilot Channel, the channel is bordered by Southern Riparian Forest, characterized by tall, mature black willows (*Salix gooddingii*), with an understory of mule fat (*Baccharis salicifolia*) and smaller willows, as well as castor bean and giant reed (photograph 4). A few patches of mature black willows are also present along the channel further south. Southern Riparian Forest includes areas formerly mapped in the PEIR as Southern Willow Scrub (63320); Southern Riparian Forest is differentiated from riparian scrub by taller trees and a less shrubby structure. This vegetation type may occur as a mature stage of former Southern Willow Scrub.

SG channel is mapped on the United States Geological Survey (USGS) 7.5 minute Imperial Beach quadrangle map (1996 version) as an intermittent stream where it flows north from Smuggler's Gulch into the historical agricultural area before turning west; the section between that westward turn and the Pilot Channel, which is not mapped as a channel on the 1996 quadrangle map, could be classified as ephemeral because it appears to only support surface flow during and briefly after precipitation.

Tijuana River Pilot Channel:

The 23-foot wide Pilot Channel maintenance area (Figures 4, 5, 6, and 7) includes the following vegetation categories: Non-Vegetated Channel (13200), Giant Reed (a subtype of Disturbed Wetland [11200]), Southern Riparian Forest (61300), Southern Riparian Forest (disturbed) (61300), Southern Willow Scrub (63320), and Open Water (13100) (see PEIR Appendix D.1 [Biological Resources Report] for descriptions of vegetation categories). Giant Reed is a project-specific subtype of Disturbed Wetland that typically consists of a monotypic stands of giant reed (Dudek 2011b).

The Pilot Channel east of the junction with SG Channel included Non-Vegetated Channel, Southern Willow Scrub, Giant Reed, and Open Water. The banks of the Pilot Channel east of the junction support Southern Riparian Forest dominated by tall, mature black willows (photographs 5 and 6) and a relatively open understory. The eastern end includes riparian habitat that has been enhanced/restored (photograph 6), and in this area fewer giant reed and castor bean plants were observed. The channel at the eastern-most end of Map 138a, on either side of the Hollister Street bridge, contained standing water (Open Water) at the time of the survey (photograph 7); no regular downstream outlet for this water was visible, as the channel to the west (containing Southern Willow Scrub) appeared to be too heavily vegetated and higher in elevation to have supported regular flow-through on lower-discharge events in recent years (photograph 8). The Pilot Channel at the junction with SG Channel and immediately to the west was sandy-

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bottomed and relatively unvegetated (Non-Vegetated Channel), but became dominated by giant reed (Giant Reed) a short distance to the west. With increasing distance from the junction, giant reed became more abundant on the banks along the channel (up to approximately 30% relative cover), such that much of the large black willow-dominated riparian vegetation could be described as disturbed Southern Riparian Forest in Map 138b (Figure 6). Further to the west, the channel is increasingly dominated by giant reed and filled with accumulated trash (photographs 9 and 10). The understory of the Southern Riparian Forest contains increasing amounts of invasive castor bean and garden nasturtium (*Tropaeolum majus*) toward the western end of the maintenance area (Photograph 11).

The section of the Pilot Channel included in Maps 138a-c is mapped on the USGS 7.5 minute Imperial Beach quadrangle map as an intermittent stream; the segment of the channel that appears to have had no regular flow-through on lower-discharge events in recent years (described above) may best be classified as ephemeral in its current condition.

Three equipment turnarounds adjacent to the Pilot Channel, measuring 25 by 30 feet, will be used during maintenance; two were previously cleared within disturbed areas (Giant Reed) and are shown in Figures 6 and 7, while the third will be cleared east of the confluence with SG Channel, within Southern Riparian Forest (or disturbed Southern Riparian Forest) during maintenance.

Access Routes and Staging Areas:

Three access routes will be used to move equipment from existing nearby unpaved roads or staging areas into the channels. One access route is an existing trail (Disturbed/Ruderal [11300]) that passes through adjacent disturbed Mule Fat Scrub (containing up to 30% relative cover of non-native species) between the Pilot Channel and the TRVRP staging area to the north (Figure 5). The second access route into SG channel is an access ramp (Disturbed-Bare Ground, 11300) between an existing dirt road and SG Channel north of the Disney Crossing (Figure 4). The third access route consists of an existing trail (Disturbed-Bare Ground, 11300) east of Hollister Street and a 45-foot long section in Mule Fat Scrub (63310) on the south bank of the Pilot Channel (Figure 5). Equipment will reach from the 45-foot long section on the south bank into the channel to perform channel maintenance, and riparian vegetation between the equipment and the channel may need to be trimmed to allow activity; this limited trimming will not affect permit conditions. The access routes will be approximately 15 feet wide.

Maintenance will include use of two existing staging areas. Staging Area B is just east of the southern end of SG Channel (Figures 1 and 3), and consists of upland Disturbed/Ruderal (11300) land, characterized by compacted soil that is bare to sparsely vegetated with ruderal non-native species such as garland daisy and stinkwort

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(photographs 12, 13 and 14). Staging Area D is located to the east, near the South Bay International Wastewater Treatment Plant. The portion of the Staging Area D parcel that will be used for this maintenance project consists of upland Disturbed/Ruderal (11300) land, characterized by gravelly and compacted soil that is bare to sparsely vegetated with ruderal non-native species such as garland daisy, filaree (*Erodium sp.*), and short-pod mustard (*Hirschfeldia incana*) (photographs 15 and 16). Two patches on the north and east sides also support establishing broom baccharis (*Baccharis sarathroides*). Staging Area B is within the MHPA, but Staging Area D is outside and to the east of the MHPA, separated from it by an unused section of the parcel and a paved road.

Vegetation acreages within the project area (including the channel maintenance footprint, turnarounds, access routes, and staging areas) are summarized in Table 1, below.

Table 1. Vegetation Within the Project Area

Holland/Oberbauer (1996) Vegetation Category	City Habitat Designation	Acreage
JURISDICTIONAL WETLANDS		
Non-Vegetated Channel (13200) (same as Streambed)	Natural Flood Channel	1.36
Open Water (13100)	Natural Flood Channel	0.09
Southern Willow Scrub (63320)	Riparian Scrub	0.22
Southern Riparian Forest (61300)(including turnaround)	Riparian Forest	0.40
Southern Riparian Forest, disturbed (61300)	Riparian Forest	0.34
Giant Reed (subtype of Disturbed Wetland [11200])	Disturbed Wetland	1.78
Mule Fat Scrub (63310)	Riparian Scrub	0.06
Mule Fat Scrub, disturbed (63310)	Riparian Scrub	0.04
Subtotal		4.29
UPLANDS		
Disturbed/Ruderal (11300)	Disturbed (Tier IV)	9.38
Non-Native Vegetation (11000)	Disturbed (Tier IV)	0.01
Subtotal		9.39
TOTAL		13.68

Sensitive species:

Approximately six individuals of singlewhorl burrobrush (*Ambrosia monogyra* [formerly *Hymenoclea m.*]), a California Rare Plant Rank 2.2 species, were observed on the berm east of the unpaved access road that parallels the southern end of SG Channel, between the unpaved road and Staging Area B (Figure 3). This is consistent with documentation of this sensitive plant species in the SG Channel area in CNDDDB records, as described in the Master Program PEIR Biological Resources Technical Report (Helix, 2011).

Two adult monarchs (*Danaus plexippus*), a CNDDDB Rank S3 species, were observed flying over the site (no larval host plants were observed). Yellow-Breasted Chat (*Icteria virens*) (state Species of Special Concern) was identified by call, but was not visually confirmed. One Coastal California Gnatcatcher (*Polioptila californica californica*)

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(federal Threatened, state Species of Special Concern) was seen and heard in the singlewhorl burrobrush shrubs between SG Channel and Staging Area B (Figure 3). Raptors, including a female Northern Harrier (*Circus cyaneus*) (state Species of Special Concern), Red-Shouldered Hawk (*Buteo lineatus*) and a Red-Tailed Hawk (*Buteo jamaicensis*), were seen and heard in and over the maintenance area. The large black willows and occasional eucalyptus (*Eucalyptus* sp.) trees immediately adjacent to the Pilot Channel could support nests of raptors such as the two detected Buteo hawks (these trees would not be removed by the channel maintenance.)

Riparian woodland and adjacent riparian scrub along the northern section of SG Channel and the Pilot Channel, where Southern Riparian Woodland lines the channels, contain suitable habitat for other sensitive species. Least Bell's Vireo (*Vireo bellii pusillus*) (state and federal Endangered) has been documented in the project area, and part of the Pilot Channel lies within designated critical habitat for this species; Southwestern Willow Flycatcher (*Empidonax trailii extimus*) (state and federal Endangered) and Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*) (state Endangered, federal candidate for listing) have been documented further east in the same CNDDB quadrangle, and may use habitat in or near the project area. Yellow-breasted Chat has been documented in the same CNDDB quadrangle and, according to the San Diego Bird Atlas, has been observed in the Tijuana River, so this species may use suitable habitat in the project vicinity. Coastal California Gnatcatcher has been documented on mesa slopes near the southern end of the site, may use coastal sage scrub upslope of the southern end of SG Channel in Map 139, and may forage in shrubs near the maintenance area. Although the Light-Footed Clapper Rail (*Rallus longirostris levipes*) (state and federal Endangered) is unlikely to use habitat within the maintenance area, it has been documented nearby in the Tijuana River Valley (Dairy Mart Ponds and the Tijuana River estuary) and implementation of proposed project conservation measures will avoid and minimize potential adverse effects to this listed species, for which no incidental take is anticipated.

Wildlife value:

The channels themselves have limited wildlife value because they are mostly sandy or densely vegetated with invasive plants such as giant reed and castor bean. The bands of riparian woodland extending along the banks of the Pilot Channel and the northern end of SG Channel appear to provide relatively high quality habitat for birds and other wildlife. Wildlife observed in, along, and over the channels included:

American Coot (*Fulica americana*)

Black Phoebe (*Sayornis nigricans*)

Bushtit (*Psaltiriparus minimus*)

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<p>California Towhee (<i>Pipilo crissalis</i>) Coastal California Gnatcatcher (<i>Polioptila californica californica</i>)* Common Yellowthroat (<i>Geothlypis trichas</i>) Green Heron (<i>Butorides virescens</i>) House Finch (<i>Carpodacus mexicanus</i>) Mallards (<i>Anas platyrhynchos</i>) Northern Harrier (<i>Circus cyaneus</i>)* Red-Shouldered Hawk (<i>Buteo lineatus</i>) Red-Tailed Hawk (<i>Buteo jamaicensis</i>), Townsend's Warbler (<i>Dendroica townsendi</i>) White-Crowned Sparrow (<i>Zonotrichia leucophrys</i>) Yellow-Breasted Chat (<i>Icteria virens</i>) Yellow-Rumped Warbler (<i>Dendroica coronata</i>) Audubon's cottontail (<i>Silvilagus audubonii</i>) California ground squirrel (<i>Spermophilus beecheyi</i>) Raccoon (<i>Procyon lotor</i>) (tracks) Red-eared slider (<i>Trachemys scripta elegans</i>) Western fence lizard (<i>Sceloporus occidentalis</i>) Monarch (<i>Danaus plexippus</i>)</p> <p>*MSCP-covered species</p> <p>The access routes have limited wildlife value because they are primarily bare ground. Staging Areas B and D likely support small mammals that could attract raptors. No animals were observed within the staging areas during the survey, but the sloping sides of existing spoil piles in Staging Area D contained rodent burrows.</p>		
<p><u>Are there current level of anthropogenic influences on habitat with the project footprint (e.g., homeless encampment, illegal dumping)?</u></p>	<p>Yes</p>	<p>X</p>
	<p>No</p>	
<p><u>If yes, describe the influence:</u></p> <p>A large quantity of trash, including vehicle tires, was observed in the Pilot Channel starting approximately 550 feet west of the junction with SG Channel (see photograph 9); smaller amounts of trash occurred elsewhere in the channel.</p>		
<p><u>Are there any conservation easements which have been previously recorded within the maintenance area?</u></p>	<p>Yes</p>	
	<p>No</p>	<p>X</p>
<p><u>If yes, describe them and their purpose:</u></p> <p>Based on a search of County parcel records on November 1, 2012, none of the parcels</p>		

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in which these channel segments occur has any conservation easement. Land ownership and parcel numbers are shown in Figure 2. The two channels, access routes, and Staging Area B are located on City and County-owned properties within the MHPA. The Pilot Channel and northern end of SG channel are within the County of San Diego's TRVRP. Staging Area D is located on City-owned property and outside the MHPA.

Jurisdictional Areas:

A jurisdictional delineation completed by Helix Environmental in February 2011 was the basis for this evaluation of jurisdictional impacts, with minor modifications such as reclassifying areas from Disturbed Wetland to Giant Reed to reflect current site conditions. All channels and riparian and wetland communities within the maintenance area were considered to be regulated by ACOE, CDFG, and the City of San Diego. The impacts quantified below are based on SG Channel width of 20 feet, Pilot Channel width of 23 feet, turnaround dimensions of 25 by 30 feet, and access route widths of 15 feet. Staging areas did not include jurisdictional wetlands or waters. Jurisdictional impacts are shown in Table 2a and 2b.

Table 2a. U.S. Army Corps of Engineers Jurisdictional Impact Acreages

Wetland Waters of the U.S. (WUS):	
Category (including access routes and turnarounds)	Acreage
Southern Willow Scrub	0.22
Southern Riparian Forest	0.40
Southern Riparian Forest, disturbed	0.34
Mule Fat Scrub	0.06
Mule Fat Scrub, disturbed	0.04
Arundo-Dominated Riparian	1.78
Subtotal	2.84

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**Table 2a. U.S. Army Corps of Engineers Jurisdictional Impact Acreages
(Continued)**

Category (including access routes and turnarounds)	Acreage
Non-wetland WUS:	
Category	Acreage
Non-Vegetated Channel	1.36
Open Water	0.09
Subtotal	1.45
Total ACOE jurisdictional impacts:	4.29

The total ACOE jurisdictional impact area of 4.29 acres does not exceed the previously permitted jurisdictional impact area of 4.31 acres.

Table 2b. California Department of Fish and Game/City of San Diego Jurisdictional Acreages

Wetlands	Same as wetlands above
Streambed/Unvegetated Waters	Same as Non-wetland WUS above
Total CDFG and City jurisdictional impacts:	4.29

The total CDFG jurisdictional impact area of 4.29 acres does not exceed the previously permitted jurisdictional impact area of 4.31 acres.

(CDFG jurisdiction often extends further from the outer or upper limit of the water body than Army Corps of Engineers [ACOE] jurisdiction, but in this case the limits of both are set by the narrow extents of the maintenance area.)

Attach documentation supporting the determination of jurisdictional areas:

Please refer to the 2011 PEIR jurisdictional wetland delineation for additional information.

Sensitive Plant Species Observed:

Sensitive Animal Species Observed/Detected:

YES

X

NO

YES

X

NO

If yes, what species were observed and where?

If yes, what species were observed/detected and where?

Singlewhorl burrobrush (*Ambrosia monogyra*) – Six plants detected outside of maintenance area, between SG Channel and Staging Area B, approximately 350 feet north of Monument Road; this location will not be impacted by maintenance, and the shrubs will be cordoned off and flagged to avoid potential direct impacts. (Although timing

Coastal California Gnatcatcher (*Polioptila californica californica*) in cluster of four singlewhorl burrobrush adjacent to SG Channel; Northern Harrier (*Circus cyaneus*) over middle section of SG Channel; Yellow-Breasted Chat (*Icteria virens*) in east side of Pilot Channel near but outside maintenance area. Gnatcatcher will not be directly or

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<p>of surveys may have prevented detection of spring annuals or deciduous herbaceous perennials, none of such potentially occurring rare plants in CNDDDB records search is likely to occur within the maintenance area.)</p>	<p>indirectly impacted if maintenance is conducted outside breeding season (March 1 – August 15), and no suitable habitat occurs within maintenance area; if maintenance occurs after March 1, maintenance activity shall comply with all applicable mitigation measures as described in following sections. Northern Harrier is MSCP-covered species; project complies with relevant Specific Management Directives for the Tijuana River Valley. Northern Harrier nest in non-native grassland and marsh habitats and there is a low potential for their nesting or foraging habitat to be indirectly impacted if maintenance activities are conducted during their breeding/nesting season starting January 15 because nesting/foraging habitat does not occur immediately adjacent to the project area. Yellow-Breasted Chat will not be impacted because maintenance will not be performed between March 15 and September 15, outside the breeding season for this migratory species.</p>
<p><u>If yes, complete a California Native Species Field Survey Form and submit it to the California Natural Diversity Database.</u></p>	<p><u>If yes, complete a California Native Species Field Survey Form and submit it to the California Natural Diversity Database.</u></p>
<p>California Native Species Field Survey Forms have been completed for submittal to the CNDDDB.</p>	<p>California Native Species Field Survey Forms have been completed for submittal to the CNDDDB.</p>
<p><u>*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.</u></p>	<p><u>*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.</u></p>

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Is any portion of the maintenance activity within an MHPA?		YES	X	NO
<u>If yes, describe which portions are within an MHPA:</u>				
<p>The channel maintenance areas, access routes, and Staging Area B lie within the City of San Diego Multi-Habitat Planning Area (MHPA). Because of the location of these areas within the MHPA, maintenance at these locations must conform to Section 1.4.2 (General Planning Policies and Design Guidelines) of the City of San Diego MSCP Subarea Plan. MSCP conformance is summarized in Attachment 1. Staging Area D is outside and to the east of the MHPA; although it is not immediately adjacent to the MHPA because both the unused portion of the parcel and a road lie between it and the MHPA, Section 1.4.3 (Land Use Adjacency Guidelines) was also included in Attachment 1 and project use of Staging Area D will comply with these guidelines during this project.</p>				
Is there moderate or high potential for listed animal species to occur in or adjacent to the impact area?				
YES	X	NO		
<u>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:</u>				
X	Least Bell’s Vireo			Riverside fairy shrimp
X	Southwestern Willow Flycatcher			California Least Tern
	Arroyo toad			Light-footed Clapper Rail
X	Coastal California Gnatcatcher			Western Snowy Plover
	San Diego fairy shrimp			Other:
<p>The USFWS Section 7 Consultation Biological Opinion (BO) contains specific conditions pertaining to avoidance and minimization measures for the Least Bell’s Vireo, such as the recommendation that maintenance be performed outside the Least Bell’s Vireo breeding season of March 15 - September 15 (with specific requirements if it is conducted during the breeding season), and retention of a biologist knowledgeable of vireo biology and ecology to oversee compliance with the conservation measures for the vireo and its designated critical habitat.</p> <p>In compliance with the USFWS Section 7 BO and Master Program PEIR Mitigation Measure 4.1.2, protocol surveys for Lease Bell’s Vireo are required if maintenance is proposed during the vireo breeding season (March 15 - September 15). In compliance with PEIR Mitigation Measure 4.1.2, and 4.1.8, Coastal California Gnatcatcher protocol surveys are required if maintenance and noise levels exceeding 60 dB(A) occur within the MHPA during the gnatcatcher breeding season (March 1 – August 15).</p>				

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<p>And although work is not proposed after March 14, PEIR Mitigation Measure 4.1.2 would require protocol surveys for the Southwestern Willow Flycatcher if maintenance were scheduled during the flycatcher breeding season (May 1 - August 30).</p> <p>The federal and state endangered Light-Footed Clapper Rail is considered to have a low potential to occur in or adjacent to the project area and is unlikely to use habitat within the maintenance area. This species has been documented nearby in the Tijuana River Valley (Dairy Mart Ponds and the Tijuana River estuary), and the project's USFWS Section 7 BO has established conservations measures that will avoid and minimize potential adverse effects to the clapper rail. Implementation of these measures will reduce impacts to clapper rail to below a level of significance in which no incidental take is anticipated. These include the requirements that channel maintenance be performed outside of the Light-Footed Clapper Rail breeding season of March 15 - September 15 (based on the breeding season provided in the BO Enclosure), that pre-maintenance surveys be conducted by a biologist familiar with clapper rail biology and ecology to confirm that clapper rails are not present, that exclusionary fencing be installed around each area of the project footprint, and that the clapper rail biologist will oversee compliance with conservation measures for the clapper rail (see Attachment 2 for complete requirements).</p>				
<p><u>Attach documentation support 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).</u></p>				
<p>Attachment 3 contains CNDDDB animal records for project quadrangle and surrounding quadrangles.</p>				
<p><u>Is there moderate or high potential for listed plant species to occur in or adjacent to the impact area?</u></p>				
YES	X	NO		
<p><u>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:</u></p>				
<p>Approximately six individuals of one sensitive plant species (singlewhorl burrobrush, [<i>Ambrosia monogyra</i>]) were observed adjacent to the impact area. These plants are outside the maintenance area and will be cordoned off and flagged to minimize and avoid potential direct and indirect impacts. Based on a review of CNDDDB plant records for the project quadrangle (Imperial Beach) and observations during the survey, there is low potential for other sensitive plant species to occur within the maintenance area.</p>				

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EXISTING CONDITIONS				
<u>Attach documentation support 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).</u>				
Attachment 3 contains CNDDDB plant records for project quadrangle and surrounding quadrangles.				
<u>Could maintenance disrupt the integrity of an important habitat (i.e., disruption of a wildlife corridor and/or an extensive riparian woodland:</u>				
YES	<input type="checkbox"/>	NO	X	<input type="checkbox"/>
<u>If yes, discuss which habitat could be impacted and how:</u>				
<p>A portion of the Pilot channel between the junction with SG Channel and the east end of the Pilot Channel contains native riparian scrub vegetation. In this area, the channel appears to be less clearly defined, as if it has been at least several years since extensive flow passed through. Clearing of the channel in this area would result in removal of young native riparian trees and shrubs. However, because this was historically a channel through riparian habitat, and extensive surrounding native riparian vegetation would not be removed, loss of the young trees and shrubs within the channel is not expected to disrupt the integrity of the habitat or its function as a wildlife corridor. Installation of temporary 3- to 5-foot tall fencing around the active section(s) of the project footprint to exclude clapper rails may be a small-scale temporary obstacle within the larger riparian habitat, but this fencing will not be extensive enough to disrupt the integrity of the habitat or its function as a wildlife corridor.</p>				
<u>Could work be conducted during the avian breeding season (January 15 – August 31 without the need for pre-construction nesting surveys:</u>				
YES	<input type="checkbox"/>	NO	X	<input type="checkbox"/>
<u>If yes, discuss which habitat could be impacted and how:</u>				
NOTE: PEIR Mitigation Measure 4.3.19 states: If SWD choose not to do the required surveys, then it shall be assumed that the appropriate avian species are present and all necessary protection and mitigation measures shall be required as described in Mitigation Measure 4.3.21.				

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EXISTING CONDITIONS				
Is it anticipated that maintenance activities would generate noise in excess of 60 dB(A) L_{eq}?				
YES	X	NO		
<u>If yes, what measures should be taken to avoid adverse impacts on avian bird breeding within or adjacent to the maintenance?</u>				
<p>As described in the INA, temporary construction noise from the use of heavy equipment would generate noise in excess of 60 dB(A) L_{eq} during the maintenance period. Maintenance conducted outside the breeding/nesting season for protected avian species would not result in a significant indirect noise impact and no noise attenuation mitigation is required.</p> <p>As described above, Light-Footed Clapper Rail is considered to have a low potential to occur in or adjacent to the project area, and the USWFS BO has established conservation measures that will avoid and minimize potential impacts to this species, including the requirement that maintenance be performed outside the Light-Footed Clapper Rail breeding season. Therefore, maintenance will not be conducted between March 15 and September 15 (based on the BO Enclosure).</p> <p>In compliance with Master Program PEIR Mitigation Measure 4.3.21, if work is proposed between January 15 (start of the raptor nesting season) and March 15 (start of the clapper rail breeding season), a pre-maintenance survey for active raptor nests shall be conducted by a qualified biologist in areas supporting suitable habitat, such as within the mature tall black willows and occasional eucalyptus trees along the Pilot Channel; if active raptor nests are found, maintenance shall not occur within 300 feet of a Cooper's Hawk (<i>Accipiter cooperii</i>) 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.</p> <p>Avoidance of the clapper rail breeding season ensures compliance with the USFWS Section 7 BO and Master Program PEIR Mitigation Measure 4.1.2, which require protocol surveys if maintenance is proposed during the vireo breeding season (March 15 - September 15) or flycatcher breeding season (May 1 – September 1) (by avoiding those seasons), and PEIR Mitigation measure 4.1.4, which requires that maintenance during those breeding seasons should be avoided if the location of the 60 dB(A)L_{eq} contour has the potential to impact breeding activity.</p> <p>In compliance with PEIR Mitigation Measure 4.1.2, 4.1.4, and 4.1.8, protocol surveys are required if maintenance and noise levels exceeding 60 dB(A) will occur within the MHPA during the Coastal California Gnatcatcher breeding season (March 1 – August 15). Therefore, if maintenance is proposed between March 1 and March 15 (start of the clapper rail breeding season), protocol surveys for Coastal California Gnatcatcher will be required within the area of suitable habitat subject to noise levels exceeding 60 dB(A). If Coastal California Gnatcatchers are present, the project must comply with all applicable noise control measures in PEIR Mitigation Measure 4.1.8.</p>				

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EXISTING CONDITIONS

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):

Biological resource conditions appear to be very similar to 2010 and 2011 conditions, as described in the PEIR, except for the spread of invasive plant species within the channel. Vegetation categories were modified to reflect relatively minor distributional or growth form shifts, but these changes do not constitute a substantive change in impacts as described in previous project documentation. Some vegetation originally mapped as Southern Willow Scrub was reclassified as Southern Riparian Forest because of the height/stature of the dominant mature black willows (“forest” rather than shrubby “scrub”) and subcanopy density that is dense in areas of invasive infestation, but more moderate to open in areas with less invasive plant infestation. Areas of Southern Riparian Forest with abundant giant reed were categorized as Southern Riparian Woodland-disturbed. The category of Giant Reed (a subtype of Disturbed Wetland) was used for portions of the channel that are now strongly dominated by giant reed. Freshwater Marsh was removed from the eastern branch of the Pilot Channel between the junction with SG Channel and the Hollister Street Bridge because freshwater marsh was not observed in that location during the survey. The category of Open Water was used for the areas of standing water within the channel at the east end on either side of the Hollister Street Bridge. Uplands impacts are to Non-Native Vegetation and Disturbed/Ruderal land, which are both Tier IV and do not require mitigation per the MSCP and PEIR. Potential wetland and upland impacts have been adequately addressed in the PEIR, no new impacts were identified, and no new biological mitigation is required. The proposed project substantially conforms to the MMP PEIR, applicable mitigation measures, and maintenance protocols.

MAINTENANCE IMPACTS

Maintenance Methodology (based on IMP)

Pre-maintenance meeting to be held on site prior to commencement of any maintenance activity. Qualified specialists including a biologist shall identify and indicate by flagging any sensitive resources to be avoided during maintenance. The biologist will also review specific measures to be implemented to minimize direct/indirect impacts and direct crews of other personnel to protect sensitive resources. Training will be conducted for personnel responsible for the proper installation, inspection, and maintenance of on-site BMPs. Construction BMPs will be installed in accordance with the water pollution control plan.

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MAINTENANCE IMPACTS				
<p>The SG Channel north of the Disney Crossing will be completed first, then the Pilot Channel east of the confluence towards Hollister Street Bridge, the Pilot Channel west of the confluence to Saturn Boulevard will follow, and the maintenance will end with the southern portion of the SG Channel towards Monument Road.</p> <p>Equipment will access the northern portion of SG by the temporary access ramp north of Disney Crossing and the existing access route that continues north along the eastern bank. The SG portion south of the Disney Crossing will also be accessed from the existing access route at locations to be verified by the biologist in the field to avoid unnecessary impacts. The Pilot Channel will be accessed through the SG Channel at the confluence.</p> <p>Bulldozers will push removed materials to a central location where an excavator will scoop out material and load into rock trucks. The rock trucks will use existing access routes to haul materials to staging area B. Materials will be transported daily to staging area D for sorting and then properly disposed of at a city approved facility.</p>				
Vegetation Impacts:	13.68 (including unvegetated uplands in staging areas and access routes)			
Wetland:	4.29			
Upland:	9.39			
Jurisdictional Areas:				
U.S. Army Corps of Engineers				
Wetland Waters of the U.S. (WUS):	2.84			
Non-wetland WUS:	1.45			
Other Jurisdictional Areas:				
California Department of Fish and Game/City of San Diego:				
Wetlands:	2.84			
Streambed/Unvegetated Waters:	1.45			
Is there moderate or high potential for listed animal species to be impacted?	YES	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>
If yes, which species (check all that apply):				
<input checked="" type="checkbox"/>	Least Bell's vireo	<input type="checkbox"/>	Riverside fairy shrimp	
<input checked="" type="checkbox"/>	Southwestern willow flycatcher	<input type="checkbox"/>	California least tern	

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MAINTENANCE IMPACTS			
<input type="checkbox"/>	Arroyo toad	<input type="checkbox"/>	Light-footed clapper rail
<input checked="" type="checkbox"/>	Coastal California gnatcatcher	<input type="checkbox"/>	Western snowy plover
<input type="checkbox"/>	San Diego fairy shrimp	<input type="checkbox"/>	Other:
<p>Although Least Bell's Vireo, Southwestern Willow Flycatcher, and Coastal California Gnatcatcher have a moderate to high potential to occur in or adjacent to the impact area, there is very low potential that these species would be impacted by the project because no maintenance activity will take place between March 15 and September 15. Any maintenance activity between January 15 and March 1 will be subject to applicable raptor nesting and Coastal California Gnatcatcher mitigation measures, and mitigation and minimization and avoidance measures will be implemented in accordance with the PEIR, BO, and project permits and guidelines (see Attachments 1, and 3 and Attachment 2 of the IMP).</p>			

MITIGATION
<p>Applicable Maintenance Protocols (list the applicable maintenance protocols based on the biological resources occurring or likely to occur on-site – include any special protocols required):</p>
<p>Bio-1 Restrict vehicles to access designated in the master program.</p> <p>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 Individual Biology Assessment (IBA), Individual Hydrology and Hydraulic Assessment (IHHA) and/or Individual Maintenance Plan (IMP).</p> <p>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 the qualified biologist, field engineer/planner, equipment operators/superintendent and any other key personnel conducting or involved with the 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 would not pose a risk to wildlife (e.g., non-biodegradable blankets which may entangle wildlife).</p>

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MITIGATION

Bio-4 Avoid introduction of invasive plant species with physical erosion control measures (e.g., fiber mulch, rice straw, etc.).

Bio-5 Conduct appropriate pre-maintenance protocol surveys if maintenance is proposed during the breeding season of a sensitive animal species. 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, SWD 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 offsite. After the initial treatment, the area of removal shall be inspected on a quarterly basis for up to two years, or until no resprouting is observed during an inspection. If resprouting 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.

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, 4.3.13, 4.3.14, 4.3.15, 4.3.16, 4.3.17, 4.3.18, 4.3.19, 4.3.20, 4.3.21, 4.3.22, 4.3.24, 4.3.25*;

Land Use 4.1.1, 4.1.2, 4.1.3, 4.1.4, 4.1.5, 4.1.6, 4.1.7. and 4.1.8.

*but may occur between January 15 and March 15 if 4.3.21, 4.1.2, 4.1.3, 4.1.4, 4.1.5, and 4.1.8 are followed

Applicable PEIR Mitigation Measures have been included in entirety in **Attachment 3**.

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MITIGATION
Other mitigation measures:
<p>Additional mitigation measures and conditions apply from the following sources :</p> <ol style="list-style-type: none">1. United States Fish and Wildlife Service Formal Section 7 Consultation on the Tijuana River Valley Channel Maintenance Project, San Diego County, California (Biological Opinion)2. California Department of Fish and Game Streambed Alteration Agreement 1600-2011-0271-R5, Tijuana River Valley Channel Maintenance Project3. Department of the Army Permit SPL-2009-00719-RRS, Tijuana River Valley Pilot Channel and Smugglers Gulch Channel Maintenance Project4. California Coastal Commission Coastal Development Permit and Amendment, #A-6-NOC-11-086 (San Diego Master Storm Water Maintenance Program)5. California Regional Water Quality Control Board 401 Water Quality Certification for Tijuana River Valley Channel Maintenance Project, 09C-077 <p>These additional measures are provided in Attachment 2 of the IMP.</p>
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):
<p>The project will not result in impacts to upland habitat that would require mitigation. The project will not result in impacts to jurisdictional wetlands or waters beyond the acreage previously permitted.</p>
ACOE Jurisdictional Areas:
<p>Mitigation for original jurisdictional impacts in the Pilot Channel was successfully completed in 2000 at the 11.02-acre mitigation site near the western end of the Pilot Channel. Mitigation was not required for construction of the SG Channel because it was a historical agricultural ditch constructed prior to environmental regulation of the loss of wetlands and waters. However, maintenance of the two channels was not previously permitted. Mitigation for this project's maintenance impacts will consist of exotics removal and control at a ratio of 2:1. Because the ACOE Permit SPL-2009-00719-RRS permits impacts to 4.31 acres of waters of the U.S., that permit requires mitigation through rehabilitation/enhancement of 8.62 acres of waters of the U.S. within a 96-acre area in and adjacent to the Pilot Channel, as described in the Final Wetlands Mitigation and Monitoring Plan (in preparation by Dudek).</p>

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<p>CDFG Jurisdictional Areas/City Wetlands:</p> <p>Original CDFG-jurisdictional impacts to the Pilot Channel were also successfully mitigated at the 11.02-acre site. Streambed Alteration Agreement 1600-2011-0271-R5 requires mitigation for maintenance impacts to 4.31 acres of CDFG-jurisdictional streambed by compliance to the ACOE permit mitigation requirements.</p> <p><u>RWQCB</u></p> <p>In accordance with the California RWQBC 401 Water Quality Certification amendment for the Project (09C-077), mitigation will consist of eradication of exotic invasive species within the project footprint, and eradication of 4.61 acres of exotic invasive species adjacent to the project footprint, with successful eradication to be maintained in perpetuity.</p> <p><u>USFWS</u></p> <p>In accordance with USFWS BO FWS-SDG-08B0600-10F0001, mitigation will consist of enhancing 8.62 acres of wetlands within a 96-acre area in and along the Pilot Channel over a five year period; and using the remaining 0.11 acre of wetland creation from the City's Tijuana River mitigation site that was completed under BO FWS-1-6-93-F-35.</p>
<p>Mitigation Description/Location:</p> <p>As required by the various Resource Agency permits and described in the Conceptual Wetlands Mitigation and Monitoring Plan (Dudek 2011c), mitigation will consist of restoration/enhancement of 4.61 acres within a 96-acre area adjacent to the Pilot Channel as well as up to 4.61 acres of restoration/enhancement in the channel. A complete description of the mitigation will be provided in the project's Final Wetlands Mitigation and Monitoring Plan. This is consistent with the PEIR Mitigation Measures 4.3.9 and 4.3.10 and no additional mitigation is required.</p>
ADDITIONAL COMMENTS OR RECOMMENDATIONS
<p>To avoid and minimize potential impacts to six individuals of singlewhorl burrobrush (<i>Ambrosia monogyra</i>) located outside of but adjacent to the maintenance area, these shrubs will be cordoned off and marked with flagging, and maintenance vehicles moving from Staging Area B into the SG channel will avoid driving directly in front of the shrubs.</p>

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ADDITIONAL COMMENTS OR RECOMMENDATIONS

Individual Biological Assessment Report Attachments:

Attachment 1: MSCP Conformance Review Table

Attachment 2: CNDDDB RareFind4 Records Search of Imperial Beach and Surrounding Quadrangles

Attachment 3: Applicable PEIR Mitigation Measures

References:

Army Corps of Engineers. 2012. Tijuana River Valley Pilot Channel and Smugglers Gulch Permit SPL-2009-00719-RRS. October 31, 2012

California Coastal Commission. 2012. Addendum to Item Th23a, Coastal Commission Permit Application #A-6-NOC-11-086 (San Diego Master Storm Water Maintenance Program). November 13, 2012.

California Department of Fish and Game (CDFG). 2011. Streambed Alteration Agreement 1600-2011-0271-R5. San Diego, California: November 2011.

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City of San Diego. 1997. Multiple Species Conservation Program City of San Diego MSCP Subarea Plan. San Diego, California: March 1997.

City of San Diego. 2000. San Diego Municipal Code Land Development Code Biology Guidelines. San Diego, California: June 2000.

City of San Diego. 2002. Guidelines for Conduction Biological Surveys. San Diego, California: October 1998, revised July 2002.

City of San Diego. 2011a. Master Storm Water Maintenance Program. San Diego, California: October 2011

City of San Diego. 2011b. Final Recirculated Master Storm Water System Maintenance Program PEIR. San Diego, California: October 2011.

Dudek. 2011a. Final Monitoring Report for the Tijuana River Valley Channel Maintenance Project. Encinitas, California: February 2011.

Dudek. 2011b. Errata, Biological Resource Technical Report and Conceptual Wetlands Mitigation Plan, Tijuana River Valley Channel Maintenance Project No. 230815. Encinitas, California: July 2011.

Dudek. 2011c. Conceptual Wetland Restoration Plan, Project No. 42891, Appendix H to the Biological Technical Report. Encinitas, CA: May 2011.

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ADDITIONAL COMMENTS OR RECOMMENDATIONS

Holland, R.F. 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California. California Department of Fish and Game, Sacramento, California.

Oberbauer 2006. Terrestrial Vegetation Communities of San Diego County Based on Holland's Descriptions. San Diego, California: February 2006.

United States Fish and Wildlife Service. 2012. Formal Section 7 Consultation on the Tijuana River Valley Channel Maintenance Project (FWS-SDG-08B0600-10F0001). Date-stamped August 24, 2012.

Site Photos



PHOTO 1 NOTES:

SG Channel just north of Monument Road, looking north; Non-Native Woodland (*Tamarix* sp.) on the west bank, castor bean (*Ricinus communis*) and other ruderal species on the east bank.



PHOTO 2 NOTES:

SG Channel west of stockpile area, looking north; giant reed (*Arundo donax*) on the west bank, castor bean on the east bank.



PHOTO 3 NOTES:

SG Channel looking north from the Disney crossing; west bank includes a clump of tall black willow (*Salix gooddingii*) in ruderal vegetation; east bank is dominated by ruderal species.



PHOTO 4 NOTES:

SG Channel just south of junction with Pilot Channel, where surrounding habitat transitions to Southern Riparian Woodland; castor bean is still common on banks.

Site Photos



PHOTO 5 NOTES:

Pilot Channel from sandy junction with SG Channel, looking upstream to the east; giant reed (*Arundo donax*) and castor bean infestation of the channel is visible between mature black willows.



PHOTO 6 NOTES:

View of Pilot Channel just west of Hollister Street bridge, looking north from dirt trail to the south; the line of tall, mature black willows indicates the location of the channel; mule fat scrub in the foreground has undergone restoration/ enhancement.



PHOTO 7 NOTES:

Open water visible between cottonwoods (*Populus freemontii*), looking north from the south bank of the Pilot Channel, east of the Hollister Street bridge.



PHOTO 8 NOTES:

Grown-in section of Pilot Channel, east of junction with SG Channel and west of open water near the Hollister Street Bridge; young willows will be impacted during channel clearing.

Site Photos



PHOTO 9 NOTES:

Garbage accumulation within dense giant reed in Pilot Channel west of the junction with SG Channel.



PHOTO 10 NOTES:

Pilot Channel near midpoint of western branch, with giant reed, castor bean, and trash.



PHOTO 11 NOTES:

Understory of riparian woodland near west end of Pilot Channel, with last year's infestation of garden nasturtium (*Tropaeolum majus*) and castor bean.



PHOTO 12 NOTES:

Staging Area B with almost bare compacted soil, looking north from west side.

Site Photos



PHOTO 13 NOTES:

Staging Area B and patch of ruderal vegetation, looking northeast from berm above southwest corner.



PHOTO 14 NOTES:

Looking west from near western edge of Staging Area B toward cluster of singlewhorl burrobush (*Ambrosia monogyra*) on berm between Staging Area B and SG Channel.



PHOTO 15 NOTES:

Gravelly and bare soil in Staging Area D, facing northeast from near the northern edge.



PHOTO 16 NOTES:

Ruderal vegetation on and between spoil piles in Staging Area D, facing east from near the western edge.