

**FINAL WETLANDS  
MITIGATION AND MONITORING PLAN  
for the  
TIJUANA RIVER VALLEY  
CHANNEL MAINTENANCE PROJECT**

*Prepared for*

**City of San Diego**  
**Storm Water Division**  
2781 Caminito Chollas, MS 44  
San Diego, California 92105  
*Contact: Stephanie Bracci*  
*sbracci@sandiego.gov*

*Prepared by*

**DUDEK**  
605 Third Street  
Encinitas, California 92024  
*Contact: Vipul Joshi*  
*vjoshi@dudek.com*

**FEBRUARY 2013**



# Final Wetlands Mitigation and Monitoring Plan for the Tijuana River Valley Channel Maintenance Project

---

## TABLE OF CONTENTS

<b><u>Section</u></b>	<b><u>Page No.</u></b>
<b>1.0 INTRODUCTION.....</b>	<b>1</b>
1.1 Project Site Location and Description .....	2
<b>2.0 MITIGATION SITES .....</b>	<b>7</b>
2.1 In-Channel Mitigation Area.....	7
2.2 Out-of-Channel Mitigation Area.....	7
<b>3.0 IMPLEMENTATION .....</b>	<b>11</b>
3.1 Permits .....	11
3.2 Pre-Activity Surveys and Notifications .....	11
3.3 Invasive Plant Control.....	12
3.3.1 Chemical Treatment.....	12
3.3.2 Mechanized Removal.....	13
3.3.3 Hand Removal .....	14
3.3.4 Biomass Disposal.....	14
3.3.5 Additional Required Measures .....	14
3.4 Implementation Schedule.....	15
<b>4.0 MONITORING.....</b>	<b>17</b>
4.1 Monitoring Duties .....	17
4.2 Performance Standards .....	17
<b>5.0 REPORTING .....</b>	<b>19</b>
<b>6.0 MITIGATION COMPLETION.....</b>	<b>21</b>
<b>7.0 SITE MANAGEMENT FOLLOWING MITIGATION COMPLETION AND SIGN-OFF .....</b>	<b>23</b>
<b>8.0 REFERENCES.....</b>	<b>25</b>

## FIGURES

1	Regional Map.....	3
2	Vicinity Map .....	5
3	Impacts and Mitigation Map.....	9

## TABLE

1	Project Permits .....	1
---	-----------------------	---

# **Final Wetlands Mitigation and Monitoring Plan for the Tijuana River Valley Channel Maintenance Project**

---

INTENTIONALLY LEFT BLANK

# Final Wetlands Mitigation and Monitoring Plan for the Tijuana River Valley Channel Maintenance Project

---

## 1.0 INTRODUCTION

The purpose of this final mitigation plan is to outline appropriate measures for compliance with mitigation requirements for the Tijuana River Valley Channel Maintenance Project (Project). The Applicant for the Project is the City of San Diego Storm Water Division (City).

The Project consists of ongoing flood control maintenance within portions of two channels in the Tijuana River Valley. The City has successfully mitigated for the construction of these channels; however, current permits for ongoing maintenance of the channels require implementation of an exotic invasive species control program within and outside of the maintenance channels as additional mitigation for maintenance activities. This current Final Wetlands Mitigation and Monitoring Plan (WMMP) has been prepared to address mitigation requirements under regulatory agency permits and project documents shown in Table 1.

**Table 1**  
**Project Permits**

Agency	Permit Number	Date
U.S. Army Corps of Engineers (ACOE)	SPL-2009-00719-RSS	October 31, 2012
California Department of Fish and Game (CDFG)	1600-2011-0271-R5	December 8, 2011
California Coastal Commission (CCC)	A-6-NOC-11-086	November 13, 2012
U.S. Fish and Wildlife Service (USFWS)	FWS-SDG-08B0600-10F0001	August 24, 2012
California Regional Water Quality Control Board (RWQCB)	09C-077	April 17, 2012
Master Storm Water System Maintenance Program- Program Environmental Impact Report (PEIR)	SCH. No. 2005101032, Project No. 42891	October 2011

As outlined in the ACOE, CDFG, and RWQCB permits, maintenance activities are authorized for a period of five years (permit expirations vary from Nov 30, 2016 to October 30, 2017), with additional maintenance potentially authorized through amendments/extensions thereafter. The mitigation proposed herein would restore riparian and riverine functions for the benefit of natural wetland habitat and sensitive wildlife species, enhance disturbed habitat, and improve water quality and flood control functions throughout the Project area. The mitigation adequately offsets the impacts of ongoing maintenance and it is expected that ongoing implementation of this Final WMMP will serve as mitigation for all ongoing impacts within the approved maintenance channels, including those beyond the current five-year permit authorization.

# Final Wetlands Mitigation and Monitoring Plan for the Tijuana River Valley Channel Maintenance Project

---

## 1.1 Project Site Location and Description

The Project site is located in the City of San Diego, San Diego County, California. The Project involves the maintenance of interrelated components including: the Tijuana River Pilot Channel, Smuggler's Gulch, gabion mattress, erodible berm, Staging Areas B and D, and multiple access roads situated on the U.S. Geological Survey 7.5-minute Imperial Beach quadrangle, Section 4, Township 19 South, Range 2 West (Figures 1 and 2). The Project is within the City of San Diego on properties owned by the County of San Diego and the City.

The Project entails specific maintenance activities to maintain existing flood control facilities to alleviate immediate flooding risks on homes, ranches, and other businesses in the Tijuana River Valley. The Project footprint as it is currently defined contains a maximum of 4.31 acres of jurisdictional area which includes maintained channels, access areas, and equipment turnarounds. These areas are collectively referred to as the **In-Channel** mitigation area and will be maintained free of exotic invasive species under this Final WMMP.

In addition, a 4.31-acre area will be established adjacent to the maintenance channels as an additional enhancement area where exotic invasive species will be removed and maintained free of these exotic invasive species during the maintenance and monitoring period. This additional area is referred to as the **Out-of-Channel** mitigation area.

Within both mitigation areas, three invasive plant species will be the primary target of control and eradication efforts: giant reed (*Arundo donax*), castor bean (*Ricinus communis*) and salt cedar (*Tamarix ramosissima*). These species are targeted for eradication based on their prevalence within the Tijuana River Valley and the need for control of these invasive exotic species, as recommended by the Southwest Wetlands Interpretive Association (SWIA).



Copyright: 2009 ESRI

**FIGURE 1**  
**Regional Map**

**DUDEK**

7123

FINAL WETLANDS MITIGATION AND MONITORING PLAN

TIJUANA RIVER VALLEY CHANNEL MAINTENANCE PROJECT

# **Final Wetlands Mitigation and Monitoring Plan for the Tijuana River Valley Channel Maintenance Project**

---

INTENTIONALLY LEFT BLANK





## **Final Wetlands Mitigation and Monitoring Plan for the Tijuana River Valley Channel Maintenance Project**

---

INTENTIONALLY LEFT BLANK

# **Final Wetlands Mitigation and Monitoring Plan for the Tijuana River Valley Channel Maintenance Project**

---

## **2.0 MITIGATION SITES**

### **2.1 In-Channel Mitigation Area**

Within the In-Channel mitigation area, the three targeted invasive plant species: giant reed, castor bean, and salt cedar will be controlled through a combination of channel maintenance (i.e., sediment removal and as-needed exotic species treatment/control). The 4.31-acre channel maintenance area (In-Channel mitigation) shall receive weed control during the maintenance and monitoring period regardless of whether dredging activities occur. The control of target invasive species within the In-Channel mitigation area will be monitored and maintained, as-needed, in accordance with the Final WMMP. The In-Channel mitigation location is shown on Figure 2 and includes the Pilot Channel, Smuggler's Gulch, and equipment turnaround areas.

### **2.2 Out-of-Channel Mitigation Area**

The Out-of-Channel mitigation involves the control of three target, invasive plant species: giant reed, castor bean, and salt cedar. The Project mitigation areas outside the channel have been mapped based on conditions observed in 2012 investigations conducted by SWIA and Dudek for the Project. Most recently, Dudek performed an invasive mapping effort in November 2012 to identify the approximate percent cover of giant reed, castor bean and salt cedar within areas adjacent to the channel maintenance areas. A total of 4.31 acres of enhancement credit (i.e., estimated area of occupied by invasive exotic species based on percent cover mapping) has been identified in locations offering the best accessibility and the highest levels of exotic invasive species (Figure 3).

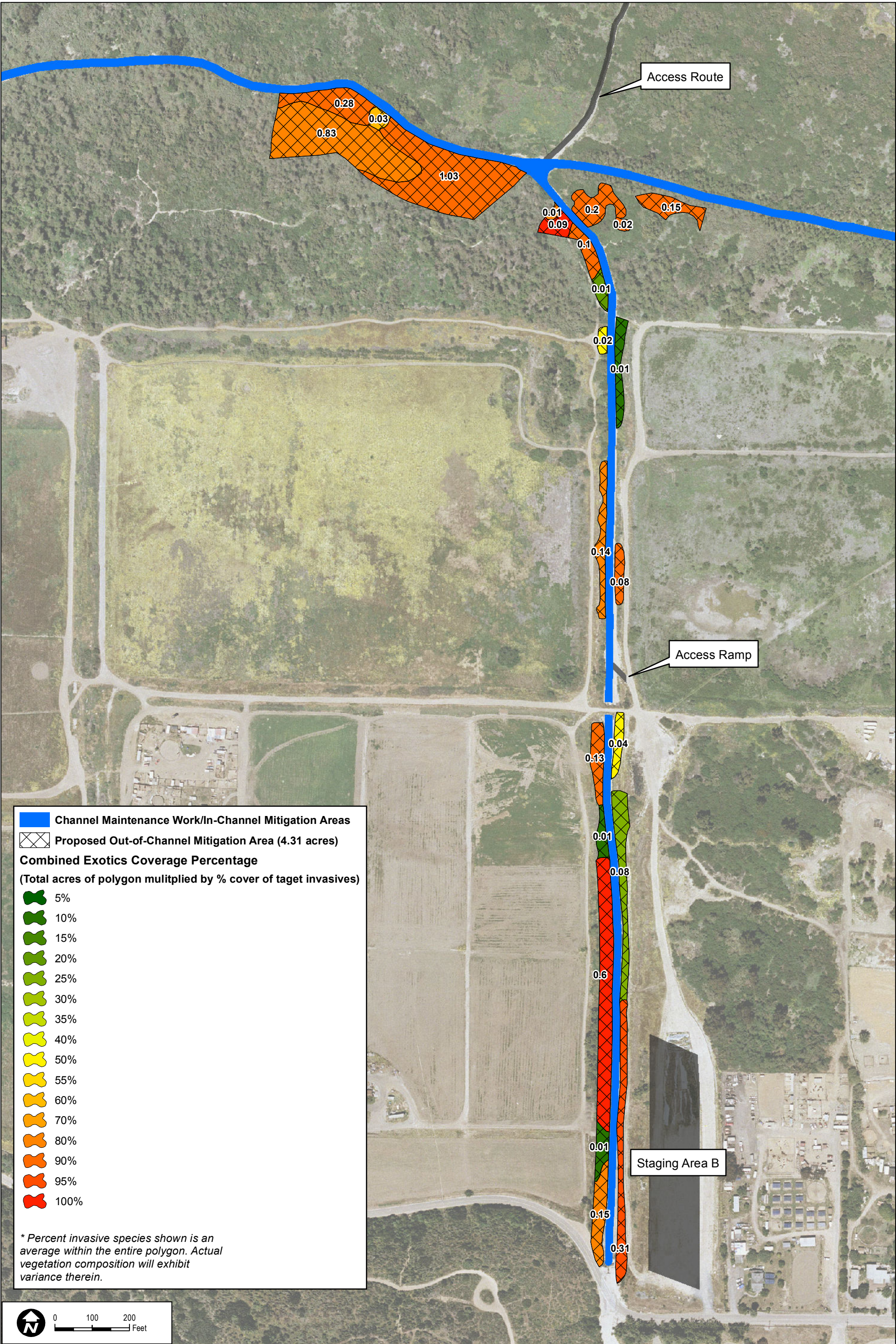
There may be some deviations from these initially mapped areas as determined in the field at the time of implementation. The decision to modify the Out-of-Channel mitigation areas will be influenced by which sites are accessible at the time of implementation and conditions observed at the time of implementation (including actual extent of exotic invasive species). The Out-of-Channel mitigation sites will total 4.31 acres of actual exotic invasive species control, the locations of which will be documented on As-Built plans required for the mitigation (see Section 5).

## **Final Wetlands Mitigation and Monitoring Plan for the Tijuana River Valley Channel Maintenance Project**

---

INTENTIONALLY LEFT BLANK







INTENTIONALLY LEFT BLANK

# **Final Wetlands Mitigation and Monitoring Plan for the Tijuana River Valley Channel Maintenance Project**

---

## **3.0 IMPLEMENTATION**

The In-Channel and Out-of-Channel mitigation areas will be implemented separately but many of the applicable permits, survey requirements, invasive plant control methods, and monitoring and reporting requirements are the same for both mitigation areas. It is expected that trash and sediment maintenance will occur, in accordance to permit conditions, on an annual basis within the maintenance channels (which are also the In-Channel) mitigation areas. These activities are generally started on September 15th and continue as weather and other conditions permit, until maintenance is completed or until March 15th, when the onset of the bird breeding season restrict further maintenance activities. Due to the degree of sediment removal necessary within the Pilot Channel and Smuggler's Gulch, implementation of the In-Channel trash and sediment maintenance will fulfill most of the annual requirements for In-Channel mitigation (i.e., exotic plant removal) through the mechanized removal sediment bearing the entire root system of any plant species within the channels.

Channel maintenance will also allow the best possible access conditions for implantation of the Out-of-Channel mitigation areas. Exotic invasive species treatment and control activities will be implemented within the Out-of-Channel mitigation areas during the same September 15 - March 15 period. However, if In-Channel trash and sediment maintenance do not occur, both In-Channel and Out-of-Channel mitigation will be implemented to the extent feasible.

### **3.1 Permits**

Implementation of both In-Channel and Out-of-Channel mitigation is fully permitted under permits listed in Table 1. The mitigation areas are within parcels owned by the City of San Diego and County of San Diego and are all located within the Tijuana River Valley Regional Park. The City has a current Right of Entry agreement with the County of San Diego dated October 22, 2012. Applicable conditions from the various permits are summarized below as they pertain to each stage of implementation; however, any and all applicable permits should be maintained at the Project site during implementation activities and all applicable permit conditions shall be adhered to.

### **3.2 Pre-Activity Surveys and Notifications**

The following pre-activity surveys are required both for In-Channel and Out-of-Channel mitigation activities.

Within 7 days prior to the initial use of mechanized equipment within the Pilot Channel each season, a qualified biologist shall conduct at least three pre-construction presence/absence surveys for clapper rail. Results of the survey shall be provided to ACOE at least 24 hours prior to project implementation. The Project Biologist shall notify ACOE, USFWS, and CDFG immediately if clapper rail is detected.

# Final Wetlands Mitigation and Monitoring Plan for the Tijuana River Valley Channel Maintenance Project

---

Any project activities that may disturb nesting birds between January 1 and March 15 shall only occur after a nesting bird survey confirms that birds are actively nesting within 200' of the activity area (500' for listed species and raptors).

The City is required to notify County Parks and Recreation Supervising Park Ranger approximately one week prior to entering the area and to notify RWQCB at least five days prior to the start of mitigation activities.

The Project Biologist shall provide environmental training for all personnel working on the project at a "tail-gate" meeting prior to implementation. This will include environmental constraints and permit conditions associated with this project. Copies of applicable environmental permits shall be kept onsite during work activities.

The limits of work will be delineated with appropriate construction fencing, flagging and/or silt fences as appropriate.

## 3.3 Invasive Plant Control

It is the City's intention to provide initial invasive plant control for the In-Channel mitigation area through implementation of the Tijuana River Valley Channel Maintenance Project including trash and sediment removal within the channel maintenance areas (Pilot Channel and Smuggler's Gulch). Any necessary follow up treatments within the In-Channel mitigation areas would follow the methods described below. If sediment maintenance does not occur within the channels, the methods outlined below may be used to both initially treat invasive plants as well as to provide follow up treatments, to the extent feasible.

Out-of-Channel mitigation areas will be initially treated according to the methods described below. These methods will also be used for necessary follow up treatments.

### 3.3.1 Chemical Treatment

Herbicide treatments will be conducted appropriately for each of the three target species in the following manner:

- **Arundo:** initial treatment of foliar spray with Ranger Pro (10% solution; glyphosate) or equivalent, retreatment may use 5% Polaris (imazapyr);
- **Castor bean:** foliar spray with Ranger Pro (4% solution; glyphosate) or equivalent; and
- **Tamarisk:** cut-stump sprayed with Garlon 4 (triclopyr) or equivalent.



## **Final Wetlands Mitigation and Monitoring Plan for the Tijuana River Valley Channel Maintenance Project**

---

Only the above-ground biomass will be treated, soils will not be disturbed. Every effort will be made to prevent the drift of herbicide onto native vegetation. Where necessary the treatment areas shall be prepared beforehand by “trampling” (i.e., binding arundo branches into a clump and pulling branches away from willows, etc.), and ladders shall be used during herbicide application on particularly tall or dense stands. Herbicides will be applied only when wind speed is below 5 mph. Low pressure applicators may be used to minimize over-spray onto adjacent native vegetation.

All chemical treatments on-site will follow all federal and state laws, regulations, labeled directions, and safety precautions. Only water-safe herbicides shall be used in wet areas or near open water as approved by applicable regulatory agencies (including US Environmental Protection Agency). Some legally registered herbicides may pose a threat to avian species; thus, for all herbicides used on site the label will be reviewed prior to treatment for information on proper timing and application rates. No mixing or preparation of chemicals shall occur within the riparian corridor or within or directly adjacent to drainages or waterways.

### **3.3.2 Mechanized Removal**

Mechanized removal of invasive plant species may be conducted utilizing large construction machinery equipment (e.g., backhoe, loader, dozer, and excavator) and/or small landscaping equipment (e.g., string trimmers, chainsaws, hedge trimmers, etc.). The use of large construction machinery will generally be used within the Pilot and Smuggler’s Gulch Channels (In-Channel mitigation) and, based on direction from the Project Biologist, in select portions of the Out-of-Channel mitigation area directly adjacent to the channel maintenance areas. Smaller landscaping equipment will generally be used in the Out-of-Channel mitigation areas which are not immediately adjacent the maintenance channels.

Any mechanical removal of non-native plants associated with the Project will occur strictly within the authorized work limits and will be enforced by the Project monitoring biologist. No mechanical removal of any form will be permitted between March 15th through September 15th for avoidance measures to nesting special-status birds potentially on-site (i.e., least Bell’s vireo, light-footed clapper rail, and southwestern willow flycatcher). If vegetation removal is scheduled to occur between Jan 1st and March 15th, nesting bird surveys and nest avoidance is required permit the CDFG permit.

For areas where soil disturbance occurs due to root mass removal or other, silt fencing and/or other appropriate erosion control BMP’s should be deployed as directed by the Project Biologist.

## **Final Wetlands Mitigation and Monitoring Plan for the Tijuana River Valley Channel Maintenance Project**

---

### **3.3.3 Hand Removal**

Hand removal or physical extraction of invasives/weeds may be used around desirable native species or clusters to be preserved, where other control methods are impractical, or would cause damage to the native species. Special care will be taken not to trample adjacent native vegetation while hand removing target invasive species. The labor crew's ability to identify and distinguish between target invasives and native species as seedlings is required to limit impacts on adjacent native habitat. Crews will be assisted by the Project biologist in plant species identification.

Physical removal of non-native plants, including the roots, is the best method for species whose root ball can readily be pulled out with the aboveground portions of the plant. These species will be physically removed before seed-set. If hand removal is possible only after seed-set, then seed heads will be cut off, bagged, and removed from the site prior to the weed removal.

### **3.3.4 Biomass Disposal**

Exotic invasive plant species removal may entail chipping the standing dead biomass (following treatment with chemical herbicide) into dumpsters and disposing of the material at a landfill. Some standing dead biomass may be chipped and placed as mulch in sites outside the treatment area, where needed. Mulch cuts down on the germination and growth of weeds.

### **3.3.5 Additional Required Measures**

The following additional measures will be implemented as required by various permit conditions.

No impacts are allowed outside of the permitted limit of work. Stockpiling of material and staging activities (fueling, vehicle maintenance, etc.) are only permitted to occur within the upland locations (existing parking lots, Staging Area B, and Staging Area D). No vehicle maintenance, fueling or stockpiling shall take place within the channels. Appropriate BMPs shall be employed to prevent the discharge of hazardous materials.

Prior to precipitation events, work areas shall be secured by stabilizing areas of exposed soil, including stockpiles. Equipment and other associated materials shall be removed from flood-prone areas.

Dust control should occur as needed to prevent airborne pollution during earthwork.

A qualified biological monitor, approved by the Resource Agencies, will be present during vegetation removal and during the use of mechanized equipment. On days where these activities are planned, the Project Biologist will walk the project site each morning, before the work

## **Final Wetlands Mitigation and Monitoring Plan for the Tijuana River Valley Channel Maintenance Project**

---

begins, to determine presence/absence of clapper rail. If clapper rail is detected, the Project Biologist shall stop work and notify ACOE, USFWS, and CDFG immediately.

No pets are permitted within the work areas; no work will be conducted at night.

Fire equipment sufficient to suppress small brush fires (such as from vehicle ignition) shall be maintained onsite during all activities.

### **3.4 Implementation Schedule**

Mitigation activities associated with the In-Channel mitigation areas will occur primarily during annual channel maintenance permit (September 15 through March 15, annually) over the next five years (i.e., 2013–2017). Mitigation activities pertaining to the additional 4.31-acre Out-of-Channel mitigation area shall begin concurrent and/or following completion of channel maintenance activities and shall be completed (i.e., initial treatment of all 8.62 acres of required mitigation) no later than nine months following initiation of impacts authorized under the permits listed in Table 1. Out-of-Channel mitigation activities are also restricted to the period between September 15 and March 15, annually.

It is expected that implementation of mitigation (invasive exotic plant treatments) will be closely coordinated with channel maintenance (trash and sediment removal) activities each year. In general, it is expected that channel maintenance activities would be initiated and would provide access to Out-of-Channel mitigation areas. These Out-of-Channel mitigation areas would be chemically treated and left in place for a period of approximately 2-3 months to allow for maximum herbicide effectiveness. After this period, weather and access conditions permitting, biomass will be cut, chipped, and removed.

During follow up seasons, resprouts may be cut, chipped, and removed at the onset of the maintenance period (e.g. in late September or October). If trash and sediment maintenance is not performed, this follow up treatment would occur in both the In-Channel and Out-of-Channel mitigation areas.

Monitoring of the site will occur continuously from the project start date until the project sign-off.

## **Final Wetlands Mitigation and Monitoring Plan for the Tijuana River Valley Channel Maintenance Project**

---

INTENTIONALLY LEFT BLANK

# **Final Wetlands Mitigation and Monitoring Plan for the Tijuana River Valley Channel Maintenance Project**

---

## **4.0 MONITORING**

All of the Project mitigation areas (i.e., In-Channel and Out-of-Channel) will be visited and evaluated for invasive plant species control quarterly following completion of initial control, subject to accessibility (i.e., inundated areas are generally not accessible due to high levels of contamination in the water).

### **4.1 Monitoring Duties**

During each of the quarterly monitoring visits mentioned above, a qualified biologist will survey all of the mitigation areas. Data of native vegetation coverage, weed presence, and site progress will be collected during monitoring visits to be used in the annual monitoring report. Qualitative monitoring will be conducted to assess native container plant vigor and development, seedling recruitment from native hydroseed and natural sources, soil moisture content, presence/absence of plant pests or diseases, erosion and/or drainage conditions on site, presence/absence of non-native or invasive plant species, trash or debris accumulation, wildlife presence/absence, and project fencing. All qualitative monitoring visits to the project site will be documented with a monitoring report, which will be forwarded to the City and/or maintenance contractor. Any project deficiencies will be noted in the monitoring report, with accompanying recommendations for maintenance or remedial actions.

The methodology for determining total native species cover and composition, total non-native species cover and composition will be determined by the Project Biologist. The methods shall follow standard industry practice, be repeatable and objective. USFWS conditions require a stratified-random sampling for all quantitative monitoring.

The following performance standards are required to be met for each year of the five year maintenance phase of the project. If mitigation efforts fail to meet the performance standards in any one year, the Project Biologist will recommend remedial actions to be implemented the following winter season that will enhance the project to a level of conformance with the original standard.

### **4.2 Performance Standards**

The following performance standards are taken from past mitigation efforts in the Tijuana River Valley Regional Park and would be used for both In-Channel and Out-of-Channel mitigation:

- Year 1: 75% of the target invasive plants have clearly been treated at least once;
- Year 2: 100% of the target invasive plants have clearly been treated at least once;
- Year 3: Fewer than 50% of the initially-treated target invasive plants are alive (have resprouts);

## **Final Wetlands Mitigation and Monitoring Plan for the Tijuana River Valley Channel Maintenance Project**

---

- Year 4: Fewer than 10% of the initially-treated target invasive plants are alive (have resprouts); and
- Year 5: Complete kill of initially-treated target invasive plants.

These standards will guide the project and will provide the City and the Resource Agencies with a way to measure the success of the project.

In addition, per ACOE and RWQCB permit conditions in addition to the aforementioned performance standards the California Rapid Assessment Method (CRAM), or other accepted functional assessment method, shall be used to establish and evaluate annual performance criteria, where appropriate. Prior to mitigation implementation, a baseline functional assessment shall be performed. Given the fixed parameters for an official CRAM assessment, it is possible that performance standards will be modified from a strict, traditional CRAM assessment to more accurately detect measurable changes, from within the mitigation sites specifically, from year to year. Results from the baseline functional assessment shall be used to determine realistic and appropriate annual functional metric goals.

Functional assessments will then be performed annually at the same time of the year during years one through five of the mitigation and monitoring period, with the project continuing until final functional assessment success criteria is obtained.

The RWQCB permit specifies water quality and benthic macroinvertebrate (BMI) per the California Stream Bioassessment Procedure (CSBP) methodology to occur prior to the project and annually during the five year maintenance and monitoring period. These water quality assessments are not addressed herein, but are addressed in a separate Receiving Waters Monitoring Plan (RWMP).

# **Final Wetlands Mitigation and Monitoring Plan for the Tijuana River Valley Channel Maintenance Project**

---

## **5.0 REPORTING**

As stated earlier, a one-time as-built drawing of all of the mitigation areas (both In-Channel and Out-of-Channel), including topography maps, will be submitted to the ACOE, RWQCB, CDFG, USFWS, CCC, and City of San Diego Development Services Department (DSD) in the form of a Final Monitoring Report within 60 days of completion of the first year of mitigation activities.

Annual reports will be submitted to ACOE, RWQCB, USFWS, CDFG, CCC, City DSD by December 1st of each year following the authorized maintenance activities associated with the Project. The annual report will describe the mitigation areas, the current conditions, and outline the results of the vegetation control program monitoring. The current site conditions will be derived from qualitative field observations. The report will provide a comparison of performance criteria with field conditions, identify any shortcomings of the invasive species control, Project implementation, etc., and recommend remedial measures necessary for the successful completion of the Project. The annual report will provide a summary of the accumulated data and will also include the following:

- A list of names, qualifications, and affiliations of all persons who prepared the content of the annual report and participated in monitoring activities
- Qualitative comparisons of current conditions and previous monitoring results
- Maps identifying the monitoring areas and any invasive/weed removal applications implemented
- Date of initiation of mitigation installation and date mitigation installation was completed
- Mitigation as-builts (including GIS files and survey report of mitigation boundaries)
- Tables presenting the raw data collected in the field
- Description of the topographic complexity characteristics at each mitigation site
- Description of the source of hydrology
- Width of native vegetation buffer around the entire mitigation site
- Copies of photos from reference points in the mitigation areas following stream photodocumentation protocols of the RWQCB
- Results of the annual BMI monitoring effort.
- Results of the water quality monitoring.

## **Final Wetlands Mitigation and Monitoring Plan for the Tijuana River Valley Channel Maintenance Project**

---

INTENTIONALLY LEFT BLANK



## **Final Wetlands Mitigation and Monitoring Plan for the Tijuana River Valley Channel Maintenance Project**

---

### **6.0 MITIGATION COMPLETION**

Upon successful completion of the final (year five) performance criteria, the permittee will solicit final mitigation project sign-off from permitting regulatory agencies. Upon receiving final project acceptance, mitigation requirements shall be considered fulfilled.

## **Final Wetlands Mitigation and Monitoring Plan for the Tijuana River Valley Channel Maintenance Project**

---

INTENTIONALLY LEFT BLANK

# **Final Wetlands Mitigation and Monitoring Plan for the Tijuana River Valley Channel Maintenance Project**

---

## **7.0 SITE MANAGEMENT FOLLOWING MITIGATION COMPLETION AND SIGN-OFF**

Following final mitigation project sign-off, long-term management of the Out-of-Channel mitigation area shall be transitioned to the County of San Diego for maintenance and management responsibilities. The City and County currently operate under a Memorandum of Understanding (MOU) that designates the County as the management agency for the Tijuana River Valley Regional Park, of which the mitigation site is a part. Management is currently provided in accordance with the Tijuana River Valley Area Specific Management Directive (ASMD) (County of San Diego 2007). The In-Channel mitigation area is expected to continue to require sediment removal and exotic invasive species control. Based on the current MOU, these activities will be carried out by the City.

## **Final Wetlands Mitigation and Monitoring Plan for the Tijuana River Valley Channel Maintenance Project**

---

INTENTIONALLY LEFT BLANK

# Final Wetlands Mitigation and Monitoring Plan for the Tijuana River Valley Channel Maintenance Project

---

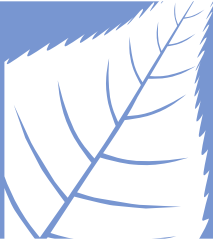
## 8.0 REFERENCES

- County of San Diego. 2007. *Tijuana River Valley Regional Park Area Specific Management Directives*, County of San Diego, California. June 22. Web location: [http://www.sdcounty.ca.gov/reusable\\_components/images/parks/doc/Final\\_TJ\\_ASMD\\_6\\_22\\_07.pdf](http://www.sdcounty.ca.gov/reusable_components/images/parks/doc/Final_TJ_ASMD_6_22_07.pdf)
- Dudek. 2009. *Biological Resources Technical Report for the Tijuana River Valley Emergency Maintenance Project*, City of San Diego, California. Prepared for the City of San Diego, Storm Water Department. September.
- Dudek. 2010. *Final Monitoring Report; Tijuana River Valley Emergency Maintenance Project*. Prepared for the City of San Diego Storm Water Department. June.
- SWIA (Southwest Wetlands Interpretive Association). 2010a. Final Report; Tijuana River Valley Invasive Plant Control Program. April.
- SWIA 2010b. *Project Proposal: Control of Invasives Along the Pilot Channel of the Tijuana River*. Prepared for Dudek. August.

## **Final Wetlands Mitigation and Monitoring Plan for the Tijuana River Valley Channel Maintenance Project**

---

INTENTIONALLY LEFT BLANK



First Annual Mitigation Monitoring Report for the

# Tijuana River Valley Channel Maintenance Mitigation Project



DECEMBER 2014

LEAD AGENCY:

**City of San Diego**  
Storm Water Division  
2781 Caminito Chollas, MS 44  
San Diego, CA 92105  
*Contact: Rory Driskell*

PREPARED BY:

**DUDEK**

605 Third Street  
Encinitas, CA 92024

*Contacts:*

*Christopher Oesch, Habitat Restoration Biologist  
Vipul Joshi, Project Manager/ Biologist*





**FIRST ANNUAL MITIGATION  
MONITORING REPORT  
for the  
TIJUANA RIVER VALLEY  
CHANNEL MAINTENANCE MITIGATION PROJECT**

*Prepared for:*

**City of San Diego**  
**Storm Water Division**  
2781 Caminito Chollas, MS 44  
San Diego, California 92105  
*Contact: Rory Driskell*  
*RDriskell@sandiego.gov*

*Prepared by:*

**DUDEK**  
605 Third Street  
Encinitas, California 92024  
*Contacts:*  
*Christopher Oesch, Habitat Restoration Biologist*  
*Vipul Joshi, Project Manager/ Biologist*

**DECEMBER 2014**



# **First Annual Mitigation Monitoring Report for the Tijuana River Valley Channel Maintenance Mitigation Project**

---

## **TABLE OF CONTENTS**

<b><u>Section</u></b>	<b><u>Page No.</u></b>
<b>1 PROJECT INFORMATION .....</b>	<b>1</b>
1.1 Permit Holders .....	1
1.2 Permit Numbers .....	1
1.3 Project Location .....	1
1.4 Project Description.....	2
1.5 Mitigation Schedule .....	9
1.6 Biological Consultant.....	9
1.7 Mitigation Implementation and Maintenance Contractors .....	9
1.8 Report Preparers.....	10
<b>2 RESULTS OF ANNUAL MONITORING .....</b>	<b>11</b>
2.1 In-Channel Mitigation Activities During Year One .....	11
2.2 Out-of-Channel Mitigation Activities During Year One .....	12
2.3 Photo Documentation.....	13
2.4 Description of Qualitative Data Collection and Monitoring.....	15
<b>3 COMPARISON OF RESULTS WITH SUCCESS STANDARDS .....</b>	<b>17</b>
3.1 Performance Criteria.....	17
3.2 Monitoring Results.....	17
<b>4 MAINTENANCE RECOMMENDATIONS FOR YEAR TWO .....</b>	<b>19</b>
<b>5 REFERENCES.....</b>	<b>21</b>

## **FIGURES**

1	Regional Map.....	3
2	Vicinity Map .....	5
3	Final As-Built Plan .....	7

## **TABLES**

1	Project Permits .....	1
2	Jurisdictional Impacts and Mitigation.....	2
3	Established Photopoints Taken 12/1/14.....	14
4	Performance Metrics and Compliance Status .....	17

# **First Annual Mitigation Monitoring Report for the Tijuana River Valley Channel Maintenance Mitigation Project**

---

INTENTIONALLY LEFT BLANK

# First Annual Mitigation Monitoring Report for the Tijuana River Valley Channel Maintenance Mitigation Project

---

## 1 PROJECT INFORMATION

### 1.1 Permit Holders

#### City of San Diego

Transportation & Storm Water Department  
2781 Caminito Chollas, MS 44  
San Diego, California 92105

Contact: Mr. Rory Driskell

### 1.2 Permit Numbers

Regulatory agency permits for this project are presented in Table 1.

**Table 1**  
**Project Permits**

Agency	Permit Number	Date
U.S. Army Corps of Engineers (ACOE)	SPL-2009-00719-RSS	October 31, 2012
California Department of Fish and Wildlife (CDFW)	1600-2011-0271-R5	December 8, 2011
California Coastal Commission (CCC)	A-6-NOC-11-086	November 13, 2012
U.S. Fish and Wildlife Service (USFWS)	FWS-SDG-08B0600-10F0001	August 24, 2012
California Regional Water Quality Control Board (RWQCB)	09C-077	April 17, 2012
Master Storm Water System Maintenance Program- Program Environmental Impact Report (PEIR)	SCH. No. 2005101032, Project No. 42891	October 2011

### 1.3 Project Location

The Project site is located in the City of San Diego, San Diego County, California. The Project involves the maintenance of interrelated components including: the Tijuana River Pilot Channel, Smuggler's Gulch, gabion mattress, erodible berm, Staging Areas B and D, and multiple access roads situated on the U.S. Geological Survey 7.5-minute Imperial Beach quadrangle, Section 4, Township 19 South, Range 2 West. The Project is within the City of San Diego on properties owned by the County of San Diego and the City. This report specifically addresses the out-of-channel mitigation, which is located along the banks of Smuggler's Gulch, to the confluence with the main pilot channel. The largest contiguous mitigation area is located southwest of the confluence. Figures 1 and 2 show the regional and vicinity location of the mitigation site. Figure 3 shows the out-of-channel site footprint and the Appendix A: Photopoint Reference Map shows an overlay of the channel maintenance areas and photo point locations.

# First Annual Mitigation Monitoring Report for the Tijuana River Valley Channel Maintenance Mitigation Project

---

## 1.4 Project Description

The maintenance action associated with the mitigation effort described herein consists of ongoing flood control maintenance within portions of two channels in the Tijuana River Valley (Smuggler's Gulch and the main Tijuana River (pilot) channel). The City has successfully mitigated for the construction of these channels; however, current permits for ongoing maintenance of the channels require implementation of an exotic invasive species control program both within and outside of the maintenance channels as additional mitigation for maintenance activities. Impacts and mitigation are summarized in Table 2.

**Table 2**  
**Jurisdictional Impacts and Mitigation**

Channel Maintenance Jurisdictional Impact	Mitigation Ratio	In-Channel Mitigation	Out-of-Channel Mitigation
4.31 acres	2:1	4.31 acres	4.31 acres

The dredging action entails specific maintenance activities to maintain existing flood control facilities to alleviate immediate flooding risks on homes, ranches, and other businesses in the Tijuana River Valley. The maintenance footprint as it is currently defined contains a maximum of 4.31 acres of jurisdictional area which includes maintained channels, access areas, and equipment turnarounds. These areas are collectively referred to as the **In-Channel** mitigation area and will be maintained free of exotic invasive species.

In addition, 4.31 acres is required to be established outside and adjacent to the maintenance channels as an additional enhancement area where exotic invasive species were removed and are being controlled during the maintenance and monitoring period. This area is referred to as the **Out-of-Channel** mitigation area. An extra 0.43 acres has been treated, totaling 4.74 acres. This extra area is expected to be treated throughout the five year monitoring period as a contingency measure to ensure the minimum acreage requirement is met.

Within both mitigation areas, three invasive plant species are the primary target of control efforts: giant reed (*Arundo donax*), castor bean (*Ricinus communis*) and salt cedar (*Tamarix ramosissima [chinensis]*). These species are targeted for control as defined in the September 2013 work plan that was prepared by the Southwest Wetlands Interpretive Association (SWIA).

Please see the *Final Wetlands Mitigation and Monitoring Plan (WMMP) for the Tijuana River Valley Channel Maintenance Project* (Dudek 2013), for additional information regarding specific mitigation details.



**FIGURE 1**  
**Regional Map**

**DUDEK**

8685-01

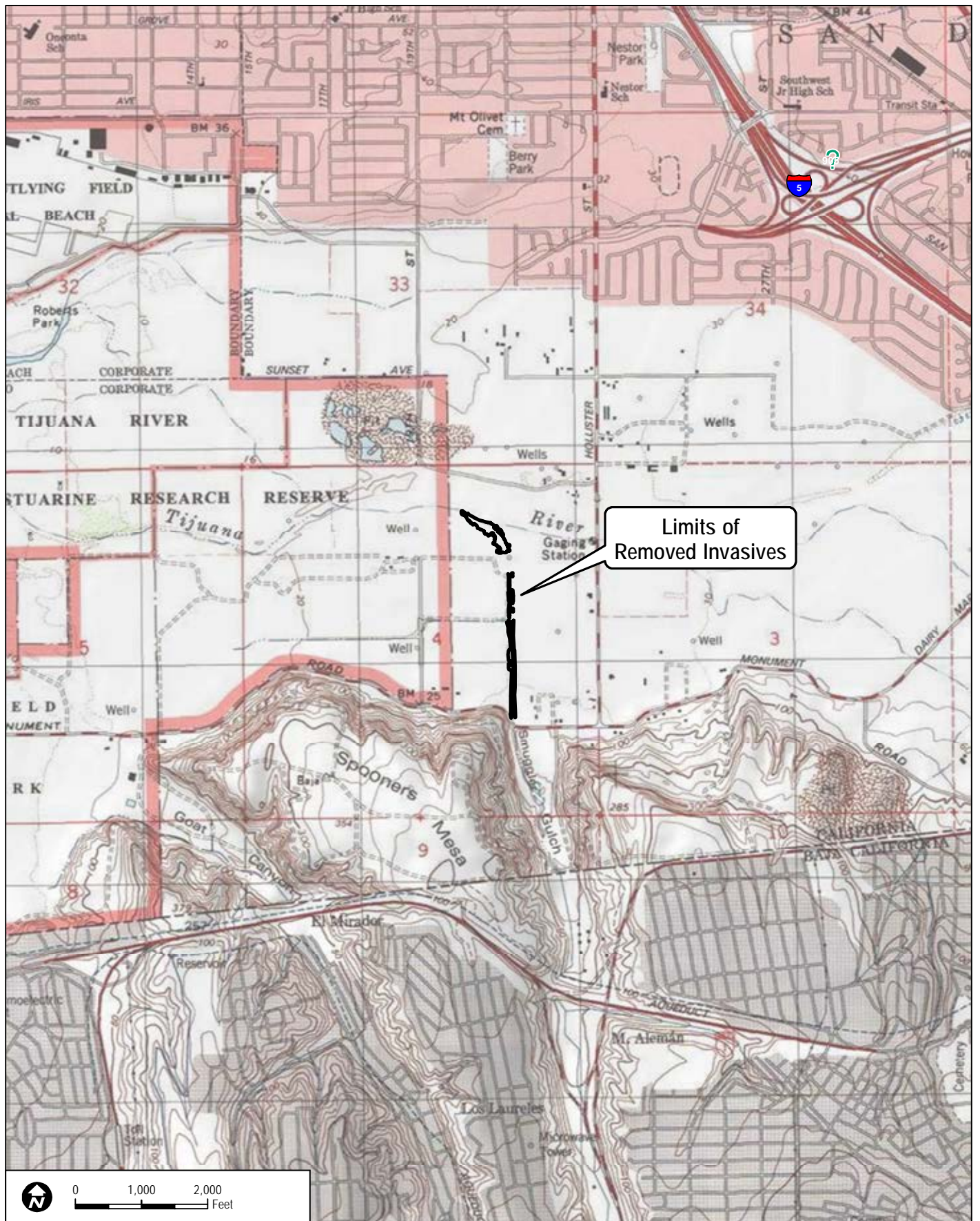
First Annual Mitigation Monitoring Report for the Tijuana River Valley Channel Maintenance Mitigation Project



# **First Annual Mitigation Monitoring Report for the Tijuana River Valley Channel Maintenance Mitigation Project**

---

INTENTIONALLY LEFT BLANK



**DUDEK**

8685-01

SOURCE: USGS 7.5-Minute Series Imperial Beach Quadrangle.

First Annual Mitigation Monitoring Report for the Tijuana River Valley Channel Maintenance Mitigation Project

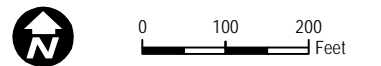
**FIGURE 2**  
**Vicinity Map**

# **First Annual Mitigation Monitoring Report for the Tijuana River Valley Channel Maintenance Mitigation Project**

---

INTENTIONALLY LEFT BLANK





DUDEK

8685-01

SOURCE: City of San Diego 2014; Bing Maps 2014

First Annual Mitigation Monitoring Report for the Tijuana River Valley Channel Maintenance Mitigation Project

FIGURE 3  
Final As-Built Plan



INTENTIONALLY LEFT BLANK

# First Annual Mitigation Monitoring Report for the Tijuana River Valley Channel Maintenance Mitigation Project

---

## 1.5 Mitigation Schedule

Year	J	F	M	A	M	J	J	A	S	O	N	D
2013									S, EB			
2014			SB						EB			R
2015			SB						EB			R
2016			SB						EB			R
2017			SB						EB			R
2018			SB						EB			R
2019	T											

S = Start of both out and in-channel mitigation

SB = Start of bird breeding season (15th)

EB = End of bird breeding season (15th)

R = Report due

T = Scheduled termination of the Five Year maintenance and monitoring period

= Work completed to date

## 1.6 Biological Consultant

### Dudek

605 Third Street

Encinitas, California 92024

Contacts: Christopher Oesch 760.479.4268 or coesch@dudek.com

## 1.7 Mitigation Implementation and Maintenance Contractors

### Southwest Wetlands Interpretive Association (SWIA) (September 2013 through March 2014)

700 Seacoast Drive, #108

Imperial Beach, CA 91932

Contact: John Boland 619.296.5061 or JohnBoland@sbcglobal.net

### HELIX Environmental Construction Group, Inc. (September 2014 through present)

7578 El Cajon Boulevard

Suite 200

La Mesa, CA 91942

Contact: Grant Gramaglia 619.462.1515 or GrantG@helixepi.com

### RECON Environmental, Inc. (September 2014 through present)

1927 Fifth Avenue

San Diego, CA 92101

Contact: Jeannine Ross 619.308.9333 or jross@reconenvironmental.com

# **First Annual Mitigation Monitoring Report for the Tijuana River Valley Channel Maintenance Mitigation Project**

---

## **1.8 Report Preparers**

This report was prepared by Christopher Oesch of Dudek, the project biologist. Publications assistance was provided by Dudek Publications Department, and graphics were prepared by the Dudek GIS department.



# **First Annual Mitigation Monitoring Report for the Tijuana River Valley Channel Maintenance Mitigation Project**

---

## **2 RESULTS OF ANNUAL MONITORING**

Mitigation monitoring observations of mitigation establishment and maintenance activities during Year One for in-channel and out-of-channel mitigation activities are discussed in Sections 2.1 and 2.2 respectively. During year one, Dudek provided biological and compliance monitoring for implementation of the in-channel invasive species removal (maintenance dredge action), in-channel herbicide application, out-of-channel biomass removal and out-of-channel herbicide treatment.

Biological monitoring during year one included the following pre-activity surveys which were permit requirements both for In-Channel and Out-of-Channel mitigation activities:

1. Within 7 days prior to the initial use of mechanized equipment within the Pilot Channel each season, a qualified biologist conducted at least three pre-construction presence/absence surveys for clapper rail. Results of the survey were provided to ACOE at least 24 hours prior to project implementation. No clapper rail were detected, so no agency reporting was required.
2. Any project activity that may disturb nesting birds was scheduled outside of the bird nesting season between January 1 and March 15.
3. The City notified County Parks and Recreation Supervising Park Ranger approximately one week prior to entering the area and RWQCB at least five days prior to the start of mitigation activities.
4. The Project Biologist provided environmental training for all personnel working on the project at “tail-gate” meetings prior to implementation of their specified tasks. This included environmental constraints and permit conditions associated with the project. Copies of applicable environmental permits were kept on site during work activities.
5. The limits of work were appropriately delineated.

In addition to biological and compliance monitoring during active channel, and out-of-channel mitigation site establishment activities, quarterly monitoring was also conducted year-round to observe the condition of the site, and to make recommendations to the City regarding follow-up weed treatment and other maintenance needs.

### **2.1 In-Channel Mitigation Activities During Year One**

The in-channel mitigation consists of removal and subsequent control of target non-native invasive species within the Smugglers Gulch and pilot channel dredge areas. Removal of invasive species within the channel occurs as a byproduct of the maintenance dredge action

# **First Annual Mitigation Monitoring Report for the Tijuana River Valley Channel Maintenance Mitigation Project**

---

itself. Therefore, the project impact action, and in-channel mitigation occurred simultaneously. The dredge action is discussed in further detail in the *Final Monitoring Report for the Tijuana River Valley Channel Maintenance Project, 2013-2014* (Dudek 2014). For channel maintenance areas within the 4.31 acre footprint in which dredging was not completed during year one, non-native invasive control was performed through herbicide application and removal using hand tools following the completion of dredge activities.

The full length of Smuggler's Gulch, was cleared of vegetation and surface sediment through dredging according to the approved maintenance plans during year one. The total cleared acreage for Smuggler's Gulch was 1.306 acres, which occurred entirely within jurisdictional waters of the U.S. limits.

Within the Pilot Channel, only a portion of the permitted length was cleared. This included approximately 5,098 linear feet of the Pilot Channel. Approximately 2.692 acres within the in-channel mitigation area were cleared of target non-native vegetation through clearing (a portion of this area was dredged). Approximately 0.186 acre of the in-channel mitigation area limits (302 linear feet) were not cleared during year one due to standing water in the channel from seasonal rainstorms. For remaining in-channel areas which did not receive target non-native vegetation removal, herbicide treatment was conducted.

The in-channel areas that were cleared and dredged, the segment that was only cleared, and the areas that were not cleared or dredged, received regular, periodic weed control through herbicide application and hand removal throughout year one as part of the mitigation maintenance program. In addition, trash removal was performed by personnel from the Alpha Project, under direction of the City.

## **2.2 Out-of-Channel Mitigation Activities During Year One**

The Out-of-Channel mitigation was initiated concurrently with the channel maintenance activities, which began in September 2013, following the end of the bird breeding season (September 15). The Southwest Wetlands Interpretative Association (SWIA), under the direction of Dr. John Boland, performed herbicide treatment of three target species within the City and County of San Diego parcels adjacent to the channel maintenance areas: giant reed, castor bean, and salt cedar. Giant reed was the most abundant within the out-of-channel mitigation site. The initial herbicide application was completed on October 25, 2013, and approximately three months were allowed for the foliar herbicide application to take effect on the plants before initiating biomass removal.

# **First Annual Mitigation Monitoring Report for the Tijuana River Valley Channel Maintenance Mitigation Project**

---

The second portion of the implementation phase involved the physical removal of the herbicide treated biomass by SWIA. Giant reed canes and the other target species were cut to approximately on-grade, and biomass removed from the sites per the project's permit conditions. This phase was initiated in January 2014, however work was temporarily suspended multiple times due to flooding from precipitation events, which created site access constraints due to flooding and deep mud. Biomass removal was conducted as site conditions permitted through the winter, and was concluded on March 14, 2014 due to the start of the bird breeding season.

Biomass removal and follow-up herbicide treatment resumed after the end of the 2014 bird breeding season (September 15), and was completed by the end of November 2014. Cleared biomass includes the minimum required 4.31 acres of out-of-channel mitigation, plus an extra 0.43 acres has been treated as a contingency to ensure the mitigation requirements for minimum acreage is met, totaling 4.74 acres. The footprint of the completed site was GPSed by Dudek using a sub-meter accuracy hand held GPS unit, and the updated out-of-channel project footprint is shown in Figure 3. This footprint constitutes the final "as-built" footprint of the out-of-channel mitigation site.

Beginning in September of 2014, biomass removal work was performed by Helix Environmental, and herbicide treatment was performed by RECON Environmental. Both the in-channel and out-of-channel sites were treated with herbicide by RECON prior to the end of November. Maintenance follow up treatments are scheduled to occur during year two.

Permit conditions required an "as-built" report be submitted within 60 days of completion of the initial phase of mitigation implementation. This report was generated on May 14, 2014 (*Tijuana River Valley Channel Maintenance Project: Out-of-Channel Mitigation Interim As-Built Submittal, San Diego County, California*) and provided to the agencies. It contained the GPSed footprint of the out-of-channel mitigation areas at that time, with a notation that the as-built map would be updated once the final out-of-channel mitigation boundary was delineation (Figure 3 herein).

## **2.3 Photo Documentation**

Permanent photo-documentation stations were set up throughout the mitigation areas to visually document the site conditions and progress over time. A map of the photo points overlaid on an aerial map, along with photos are presented in Appendix A. Photos documenting the end of the year one monitoring period were taken on December 1, 2014, by Rory Driskell and Christopher Oesch (Dudek). A log of the most recent photopoint collection is shown in Table 3.

# First Annual Mitigation Monitoring Report for the Tijuana River Valley Channel Maintenance Mitigation Project

**Table 3**  
**Established Photopoints Taken 12/1/14**

Photo Point #	Date	Time	Coordinates (Lat/Long,)	Direction	Location Description	Notes/Conditions
PP-1	12/1/14	1044	117° 5' 18.73" W 32° 33' 03.70" N	N	View of out-of-channel mitigation area along access road.	Area which received recent invasive non-native removal and control.
PP-2	12/1/14	1050	117° 5' 20.71" W 32° 33' 06.58" N	NW	View of out-of-channel mitigation area along access road at horse trail crossing at northern end of site.	Area which received recent invasive non-native removal and control.
PP-3	12/1/14	1051	117° 5' 20.99" W 32° 33' 06.83" N	W	View of out-of-channel mitigation area along access road at horse trail crossing at northern end of site.	Area which received recent invasive non-native removal and control.
PP-4	12/1/14	1052	117° 5' 21.12" W 32° 33' 06.91" N	W	View of out-of-channel mitigation area looking down the horse trail at cleared area.	Area which received recent invasive non-native removal and control.
PP-5	12/1/14	1053	117° 5' 21.12" W 32° 33' 06.91" N	S	View of out-of-channel mitigation area looking south along access road at cleared area.	Area which received recent invasive non-native removal and control.
PP-6	12/1/14	1049	117° 5' 20.44" W 32° 33' 06.19" N	SW	View of out-of-channel mitigation area looking southwest at cleared area.	Area which received recent invasive non-native removal and control.
PP-7	12/1/14	1047	117° 5' 19.62" W 32° 33' 05.62" N	N	View of out-of-channel mitigation area looking north at cleared area along access road.	Area which received recent invasive non-native removal and control.
PP-8	12/1/14	1111	117° 5' 17.71" W 32° 32' 47.05" N	SW	View of both the Smuggler's Gulch channel and the out-of-channel mitigation area looking southwest.	Area which received recent invasive non-native removal and control, as well as the Smuggler's Gulch channel which was dredged.

# First Annual Mitigation Monitoring Report for the Tijuana River Valley Channel Maintenance Mitigation Project

**Table 3**  
**Established Photopoints Taken 12/1/14**

Photo Point #	Date	Time	Coordinates (Lat/Long,)	Direction	Location Description	Notes/Conditions
PP-9	12/1/14	1115	117° 5' 17.59" W 32° 32' 40.42" N	NW	View of both the Smuggler's Gulch channel and the out-of-channel mitigation area looking northwest.	Area which received recent invasive non-native removal and control, as well as the Smuggler's Gulch channel which was dredged.
PP-10	12/1/14	1105	117° 5' 18.29" W 32° 32' 53.15" N	S	View of Smuggler's Gulch channel with out-of-channel treatment areas on banks looking south.	Area which received recent invasive non-native removal and control, as well as the Smuggler's Gulch channel which was dredged.
PP-11	12/1/14	1036	117° 5' 25.91" W 32° 33' 08.95" N	W	View of northwestern most end of the out-of-channel mitigation area looking west along the pilot channel.	Area which received recent invasive non-native removal and control.
PP-12	12/1/14	1036	117° 5' 25.91" W 32° 33' 08.95" N	SE	View of northwestern most end of the out-of-channel mitigation area looking southeast along the pilot channel.	Area which received recent invasive non-native removal and control.
PP-13	12/1/14	1057	117° 5' 18.29" W 32° 32' 53.15" N	NE	View of out-of-channel mitigation area looking northeast from the berm running along the southern side of the site.	Area which received recent invasive non-native removal and control.
PP-14	12/1/14	1057	117° 5' 18.29" W 32° 32' 53.15" N	NW	View of out-of-channel mitigation area looking northwest from the berm running along the southern side of the site.	Area which received recent invasive non-native removal and control.

## 2.4 Description of Qualitative Data Collection and Monitoring

In addition to direct compliance monitoring of project implementation, biological monitoring during year one consisted of site walk-throughs with the City, SWIA, Helix and RECON to

## **First Annual Mitigation Monitoring Report for the Tijuana River Valley Channel Maintenance Mitigation Project**

---

evaluate site conditions and identify maintenance progress and provide recommendations to keep the project in compliance and on track to meet its annual performance criteria. Biological and maintenance monitoring noted non-native plant species resprout/presence, soil moisture, hydrologic stability/erosion issues, channel inundation, presence of trash, and site disturbance.

# First Annual Mitigation Monitoring Report for the Tijuana River Valley Channel Maintenance Mitigation Project

---

## 3 COMPARISON OF RESULTS WITH SUCCESS STANDARDS

### 3.1 Performance Criteria

The performance standards from the agency approved *Final Wetlands Mitigation and Monitoring Plan (WMMP) for the Tijuana River Valley Channel Maintenance Project* (Dudek 2013) are shown in Table 3, with the compliance status of the project.

**Table 4**  
**Performance Metrics and Compliance Status**

Year	Performance Metric	Compliance Status
1	At least 75% of the target invasive plants have clearly been treated at least once	In Compliance: 100% of both the in and out of channel target invasives have been treated.
2	100% of the target invasive plants have clearly been treated at least once	In Compliance: See notation above.
3	Fewer than 50% of the initially treated target invasive plants are alive (have resprouts);	--
4	Fewer than 10% of the initially treated target invasive plants are alive (have resprouts);	--
5	Complete kill of initially treated target invasive plants	--

### 3.2 Monitoring Results

Overall, the site is meeting and exceeding its year one mitigation requirement of having at least 75% of the target invasive species treated within the mitigation areas. By the end of year one, the site met the year two performance standard of 100% of the target invasive species being treated within the mitigation area boundaries.

In addition to meeting this metric, work conducted during year one maintained compliance with work restrictions and other permit conditions.



**First Annual Mitigation Monitoring Report for the  
Tijuana River Valley Channel Maintenance Mitigation Project**

---

INTENTIONALLY LEFT BLANK

# **First Annual Mitigation Monitoring Report for the Tijuana River Valley Channel Maintenance Mitigation Project**

---

## **4 MAINTENANCE RECOMMENDATIONS FOR YEAR TWO**

The following maintenance recommendations are intended to keep the project in compliance with its annual performance standards, as well as keep the project progressing on a trajectory that will achieve its ultimate completion by the end of the five year maintenance and monitoring period. Given the persistent nature of the target invasive species, regular and thorough follow-up control efforts are anticipated to be necessary for satisfactory control.

1. Dudek recommends regular follow-up herbicide treatment and/or physical removal of target non-native invasive species which may resprout within the in-channel and out-of-channel mitigation areas.
2. Dudek recommends regular periodic trash removal within the mitigation sites.

**First Annual Mitigation Monitoring Report for the  
Tijuana River Valley Channel Maintenance Mitigation Project**

---

INTENTIONALLY LEFT BLANK

# First Annual Mitigation Monitoring Report for the Tijuana River Valley Channel Maintenance Mitigation Project

---

## 5 REFERENCES

- Dudek. 2013. *Final Wetlands Mitigation and Monitoring Plan (WMMP) for the Tijuana River Valley Channel Maintenance Project*. San Diego, California. February.
- Dudek. 2014. *Tijuana River Valley Channel Maintenance Project: Out-of-Channel Mitigation Interim As-Built Submittal, San Diego County, California*. San Diego, California. May.
- Dudek. 2014. *Final Monitoring Report for the Tijuana River Valley Channel Maintenance Project, 2013-2014*. San Diego, California. May.

**First Annual Mitigation Monitoring Report for the  
Tijuana River Valley Channel Maintenance Mitigation Project**

---

INTENTIONALLY LEFT BLANK

# **APPENDIX A**

## *Site Photopoints*









Photo Point #1 (February 5, 2014).



Photo Point #2 (February 5, 2014).



Photo Point #3 (February 5, 2014).



Photo Point #4 (February 5, 2014).



Photo Point #5 (February 5, 2014).



Photo Point #6 (February 5, 2014).





Photo Point #7 (February 5, 2014).



Photo Point #8 (February 5, 2014).



Photo Point #9 (February 5, 2014).



Photo Point #10 (February 5, 2014).





Photo Point #1 (March 22, 2014).



Photo Point #2 (March 22, 2014).



Photo Point #3 (March 22, 2014).



Photo Point #4 (March 22, 2014).



Photo Point #5 (March 22, 2014).



Photo Point #6 (March 22, 2014).





Photo Point #7 (March 22, 2014).



Photo Point #8 (March 22, 2014).



Photo Point #9 (March 22, 2014).



Photo Point #10 (March 22, 2014).





Photo Point #1 (December 1, 2014).



Photo Point #2 (December 1, 2014).



Photo Point #3 (December 1, 2014).



Photo Point #4 (December 1, 2014).



Photo Point #5 (December 1, 2014).



Photo Point #6 (December 1, 2014).





Photo Point #7 (December 1, 2014).



Photo Point #8 (December 1, 2014).



Photo Point #9 (December 1, 2014).



Photo Point #10 (December 1, 2014).



Photo Point #11 (December 1, 2014).



Photo Point #12 (December 1, 2014).





Photo Point #14 (December 1, 2014).



Photo Point #14 (December 1, 2014).

May 14, 2015

8685

Ms. Stephanie Bracci  
City of San Diego  
Transportation and Storm Water Department  
2781 Caminito Chollas, MS 44  
San Diego, California 92105

***Subject: Current Condition Verification for the Tijuana River Emergency Channel  
Maintenance Wetland Mitigation Project, San Diego County, California***

Dear Ms. Bracci:

This letter report provides a description of the current site status and continued mitigation requirement compliance of the Tijuana River Emergency Channel Maintenance Wetland Mitigation Project, which completed its five year maintenance and monitoring period in May 2001.

The mitigation site is located immediately south of the Tijuana River channel, within the City of San Diego immediately north of the U.S. border in the Tijuana River Valley, as shown in attached Figures 1 through 3 (Dudek 2013). The site is located on USGS Imperial Beach 7.5 minute quad, north of Monument Road, west of Hollister Street, and immediately west of the Saturn Boulevard (19th Street) right-of-way. The site is within the City's Multiple Species Conservation Program's Multi-Habitat Planning Area and County of San Diego Tijuana River Valley Regional Park.

Construction of the emergency channel directly impacted jurisdictional southern willow scrub vegetation and historic nesting territories of the least Bell's vireo (LBV). The City subsequently extended the emergency channel by 400 linear feet causing additional impacts of 0.17 acre to occupied habitat and 0.07 acre of unoccupied but suitable LBV habitat. The mitigation site was also used to mitigate impacts for the Hollister Street Bailey Bridge replacement project. Ultimately, a total of 11.05 acres of wetland mitigation was installed at this mitigation site.

## **PERMITS**

The City of San Diego performed work in the Tijuana River Valley under Emergency Procedures outlined in permits for this project that were issued by the U.S. Army Corps of Engineers (ACOE) (93-966- EW), U.S. Fish & Wildlife Service (USFWS) (Biological Opinion for ACOE

Ms. Stephanie Bracci

*Subject: Current Condition Verification for the Tijuana River Emergency Channel Maintenance Wetland Mitigation Project, San Diego County, California*

---

permit), and California Department of Fish & Game (Wildlife) (CDFW) Streambed Alteration Agreement (5-683-93). Project permits are also shown in Table 1.

**Table 1**  
**Project Permits**

Agency	Permit Number
California Department of Fish and Wildlife (CDFW)	SAA 5-683-93
U.S. Army Corps of Engineers (ACOE)	93-966-EW
U.S. Fish and Wildlife Service (USFWS)	1-6-93-F-35

Per conditions of the Master Storm Water System Maintenance Program, additional mitigation need not be repeated for subsequent maintenance of the same footprint of a project which was previously impacted, so long as performance criteria continue to be met for the site.

In May of 2013, Dudek performed a comprehensive site review, which is outlined in the *Current Condition Verification Report for the Tijuana River Emergency Channel Maintenance Wetland Mitigation Program* (July 2013) report. Dudek performed a follow-up walk through on March 19, 2015 to review the site and confirm continued compliance with performance standards outlined in the U.S. Fish and Wildlife (USFWS) Biological Opinion (BO).

## **AGENCY APPROVED PERFORMANCE STANDARDS**

The USFWS Biological Opinion defined the ultimate performance standards for establishment of LBV quality habitat shown in Tables 2 through 4. Interim performance standards for vegetation establishment were not provided. Per USFWS BO No. 1-6-93-F-35, and as outlined in the agency approved conceptual mitigation plan, fulfillment of any one of the standards in Table 2 indicated that the mitigation area has successfully achieved the intended functions and services which constitute the long-term goals of the mitigation project.

**Table 2**  
**USFWS LBV Performance Standards**

Establishment of suitable LBV habitat has been achieved if one or more of the following criteria is met:		
Vegetation meets quantitative standards stated in USFWS Biological Opinion (Tables 3 and 4)	Vegetation passes a qualitative assessment by a representative of USFWS and the Project Biologist	Presence of LBV territories

Ms. Stephanie Bracci

Subject: Current Condition Verification for the Tijuana River Emergency Channel Maintenance Wetland Mitigation Project, San Diego County, California

---

**Table 3**  
**Transect Data Performance Standards**

<b>Vegetation Strata Layer</b>	<b>Percent Native Coverage Goal</b>	<b>Acceptable Percent Coverage Range</b>
Tree	50	40-60
Shrub	39	30-50
Herbaceous	4	2-9
Open	7	3-9

**Table 4**  
**Stacked Cube Performance Standards**

<b>Cube Height (Meters)</b>	<b>0-1</b>	<b>1-2</b>	<b>2-3</b>	<b>3-4</b>	<b>4-5</b>	<b>5-6</b>	<b>6-8</b>	<b>&gt;8</b>
Average Percent Cover	40	33	27	21	18	15	13	8
Standard Deviation	6.6	7.4	5.9	5.9	5.6	6.5	7.0	6.1
Target Range	30-50	20-45	15-40	10-35	10-25	5-25	5-20	0-20

## **SITE VEGETATION**

Established vegetation remains consistent with what was observed during the 2013 site evaluation, which consists of a mosaic of native vegetation communities throughout the project area. These wetland vegetation communities include herbaceous wetland, southern willow scrub, mulefat/southern willow scrub mix, mulefat scrub/ sandbar willow mix, mulefat scrub, and elderberry-cottonwood-willow woodland. Location and composition of observed vegetation communities is substantially consistent with the project design, exhibiting natural changes occurring over time as dictated by field conditions, favoring certain target native plant species over others. A detailed description of vegetation communities can be found in Section 2.1.1 of the *Current Condition Verification Report for the Tijuana River Emergency Channel Maintenance Wetland Mitigation Program* (July 2013). Site maps from the 2013 report are attached, as Figures 1 through 3.

## **SUMMARY OF MITIGATION COMPLIANCE STATUS**

During the site walk through, LBV were detected through vocalization within the central portion of the site. Given that the site walk-through was performed during the nesting and breeding

Ms. Stephanie Bracci

Subject: *Current Condition Verification for the Tijuana River Emergency Channel Maintenance Wetland Mitigation Project, San Diego County, California*

---

season for LBV, it can be determined that the site is providing suitable functions and services to support forage, nesting and/or breeding.

Results of the monitoring compared with performance standards are shown in Table 5.

**Table 5**  
**2015 Monitoring Results Compared With Final Performance Standards**

<i>Establishment of Suitable LBV Habitat has been achieved <b>one or more</b> of the following criteria:</i>	<b>Performance Standard</b>		
	Vegetation meets quantitative standards stated in USFWS Biological Opinion	Vegetation passes a qualitative assessment by a representative of USFWS and the Project Biologist	Presence of LBV territories
<i>2015 Performance Results</i>	Not sampled.	Not evaluated by USFWS representative.	Yes. During the site walk-through, LBV was detected vocalizing on site.

Based on these observations, and as shown in Table 5, it is determined that the mitigation site continues to meet performance criteria, and remains in compliance with permit conditions for its ultimate success, continuing to function as it was designed.

For any questions or concerns, please contact me at 760.479.4268 or coesch@dudek.com.

Sincerely,



Christopher Oesch, Dudek  
Habitat Restoration Biologist

Attachments:     *Figure 1, Regional Map*  
                          *Figure 2, Vicinity Map*  
                          *Figure 3, Site Map*

## LITERATURE CITED

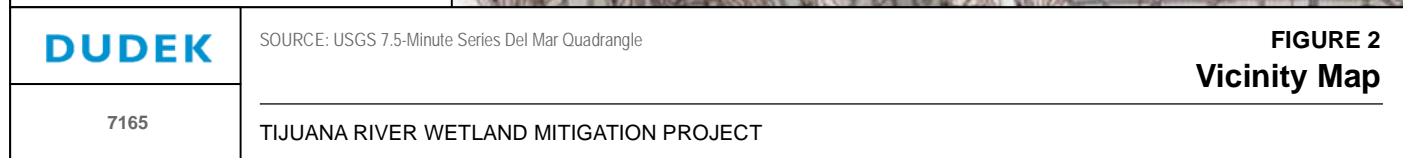
Dudek. 2013. *Current Condition Verification Report for the Tijuana River Emergency Channel Maintenance Wetland Mitigation Program*, City of San Diego, California. Prepared for the City of San Diego, Storm Water Division. July.





**FIGURE 1**  
**Regional Map**









© 2013 Microsoft Corporation