

INDIVIDUAL WATER QUALITY ASSESSMENT REPORT

Site Name/Facility: Mission Bay High School (MBHS) and Pacific Beach Drive/Olney Street (PBO)

Master Program Map No.: 36 & 37

Date: September 24, 2014

Civil Engineer (name, company, phone number):
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Register Civil Engineer
Number & Expiration Date
(place stamp here): **RCE# 62299**
Exp. 09/2015



Instructions: This form must be completed for each facility prior to the completion of the Individual Maintenance Plan and prior to any work being conducted in the facility. Attach additional sheets if needed.

EXISTING CONDITIONS

The City of San Diego (City) has developed the Master Storm Water System Maintenance Program (MMP, Master Maintenance Program) (City 2011a) to govern channel operation and maintenance activities in an efficient, economic, environmentally and aesthetically acceptable manner to provide flood control for the protection of life and property. This document discusses water quality issues related to the proposed maintenance activities within the Mission Bay High School (MBHS) (Map 36) and Pacific Beach Dr./Olney St. (PBO) (Map 37) channels, to comply with the MMP's Programmatic Environmental Impact Report (PEIR) (City 2011b). Map numbers correspond to those contained in the MMP.

Project Location and Description

The purpose of the project is to maintain the existing storm water facilities by restoring the original design capacity to provide public safety and protection of property. The City of San Diego is proposing to routinely maintain the MBHS and PBO channels through periodic removal of trash, debris, vegetation and accumulated sediment.

The MBHS and PBO channels are located west of Interstate 5 in the Pacific Beach community of the City of San Diego (Figure 1), and are situated adjacent to Pacific Beach Drive and Mission Bay High School just north of Mission Bay (Figure 2). The channels are located in un-sectioned lands in Township 16 South, Range 3 West on the San Bernardino Base and Meridian U.S. Geological Survey (USGS) 7.5-minute La Jolla quadrangle map (Figure 3). Kendall-Frost Mission Bay Marsh Reserve is located southwest of the site, along the northern edge of Mission Bay.

The channels are located within the City and California Coastal Commission's Coastal Overlay Zone (Coastal Appealable and Coastal Permit) and Pacific Beach community. The project area is zoned RS-1-7 (Residential-Single Unit), and designated as School (Senior High) and Single-Family (Residential)

in the Pacific Beach Community Plan. According to the Federal Emergency Management Agency (FEMA), the project is located outside of the Special Flood Hazard Areas Subject to Inundation by the 1% Annual Chance Flood as well as the 0.2% Annual Chance Flood areas. The channels are within the Peñasquitos Hydrologic Unit. The site is not located within the City's Multiple Species Conservation Program's (MSCP) Multi-Habitat Planning Area (MHPA). The City's MHPA is mapped within the Kendall-Frost Mission Bay Marsh Reserve which is directly downstream and southwest of the project site.

Proposed Maintenance

Maintenance will involve removal of sediment and vegetation to restore the original capacity of the two channels to convey storm water. Maintenance will begin by removing standing water in the MBHS channel with vactor trucks. Once the standing water has been removed, the vactor trucks will be stationed at the upstream and downstream ends of the MBHS channel and upper end of the PBO channel to capture surface flow if present during maintenance. In addition, sandbags will be placed across the downstream end of the channel.

A skid steer or excavator will be used in the channel to remove sediment and vegetation. This equipment will enter the channel from access points indicated on the Individual Maintenance Plan (IMP). The skid steer/excavator will push sediment and vegetation to central locations where the material will be removed by a gradall stationed outside the channel at areas identified on the IMP. The gradall will scoop up the material, and transfer it directly into a dump truck for disposal at an approved landfill.

Upon completion of the maintenance, the sandbags will be removed. The equipment will be transported back to the City yard.

A more detailed discussion of the maintenance activities is contained in Attachment 1.

Description of creek/channel geometry (length, width, and depth):

MBHS Channel

The MBHS channel runs in a north-south direction for approximately 1,075 feet from the southwesterly corner of the Mission Bay High School bus loading/unloading zone to Pacific Beach Drive, and discharges into the PBO channel. It is bordered by Mission Bay High School to the east and a military single-family residential housing development and Quincy Street to the west.

The MBHS channel is a concrete trapezoidal channel with a 4-foot (ft) bottom width, 10-ft top width, and 2-ft channel depth, with a nearly flat, longitudinal slope (0.25%).

The MBHS channel receives storm flows from:

- a 27-inch reinforced concrete pipe (RCP) at its upstream end,
- a 36-inch RCP located 250 ft south of its upstream end,
- the adjacent Mission Bay High School baseball field and northerly parking lot areas, and
- the adjacent Mission Bay High School tennis court.

PBO Channel

The PBO channel runs in an east-west direction for approximately 897 ft from the southwesterly corner of Mission Bay High School to Olney Street. The channel is bordered by Pacific Beach Drive and Campland on the Bay to the south and a military single-family residential housing development to the north.

The PBO channel is a trapezoidal earthen channel with a bottom width that varies from 3 to 5 feet, a top width that varies from 20 to 26 feet, an average channel depth of 5 to 6 feet, and a nearly flat, longitudinal slope (0.25%).

The PBO channel receives storm flows from:

- the MBHS channel,
- an 18-inch RCP located 245 ft west of its upstream end,
- Mission Bay High School football/baseball fields, and Lee Street, and
- a portion of the Campland at the Bay parking lot.

The PBO channel discharges into a 42-inch RCP projecting barrel culvert that is located at the intersection of Pacific Beach Drive and Olney Street. The culvert conveys storm flows to the south side of Pacific Beach Drive and discharges into a concrete vault known as the Mission Bay Sewage Interceptor System (MBSIS) box. This box was installed as part of the City's efforts to divert dry weather flows into the sewer system. The MBSIS box discharges into a concrete basin where water then flows out of the basin to a natural channel that conveys storm water to Mission Bay.

Note: Attach Chain of Custody Sheet(s), Table of Chemical Analysis Results, and Laboratory Sieve Analysis Results

Description of Sediment Sampling Activities (location(s), depth, shipment/deliverer to laboratory(s)):

The field observation activities (described below) established it can be concluded there are no negative water quality impacts associated with channel maintenance. For this reason sediment sampling activities are unnecessary, and would only serve to prove that channel maintenance has a greater positive impact on water quality than leaving the plants and sediment in place.

Note: Attach Chain of Custody Sheet(s), Table of Chemical Analysis Results, and Laboratory Sieve Analysis Results

Description of Flow Measurement Activities (location(s) and equipment):

Three field visits were made to the MBHS and PBO channels to determine if low flows occurred in either of the channels. The visits took place on May 19, 2014, June 9, 2014, and June 16, 2014. During each of these visits, pockets of standing water were observed in the northern end of the MBHS channel, but no low flow was observed at the southern end of the MBHS channel. Within the PBO channel, no low flow was observed nor was any standing water observed.

The flow chart found on page 2 of the Appendix A, City Master Storm Water System Maintenance Program, “Water Quality Assessment and Qualification Model for Flood Channel Maintenance White Paper” (White Paper) clearly states that if there is no dry weather flow then it can be concluded that maintenance will have no negative impact on water quality, and no further water quality analysis is required. This is discussed in more detail throughout the White Paper and the Standard Operating Procedure (SOP) attached to the White Paper.

Note: Attach Field Notes and Model Calculation Worksheets

Description of Volume Measurement Activities (interval, total number, equipment):

Neither channel was observed to have a dry weather flow. Therefore, the dry weather flow volume of water flowing through the channel cannot be measured.

Note: Attach Field Notes and Model Calculation Worksheets

Description of Water Quality Sampling Activities (location(s), shipment/delivery to laboratory(s)):

Water samples were not taken since there was no observed dry weather flow to be analyzed.

Note: Attach Chain of Custody Sheet(s) and Table of Chemical Analysis Results

Description of Wetland Assessment (Existing) Activities (personnel, general conditions):

Wetland assessment (existing) activities were not performed since the White Paper clearly explains that if there is no dry weather flow then it can be concluded that maintenance will have no negative impact on water quality.

Note: Attach Field Notes and Scoring Sheet(s)

Description of Wetland Assessment (Recovery) Activities (personnel, general conditions):

Wetland assessment (recovery) activities were not performed since the White Paper clearly explains that if there is no dry weather flow then it can be concluded that maintenance will have no negative impact on water quality.

Note: Attach Field Notes and Scoring Sheet(s)

Sediment Pollutant Loading Estimates:

Field observations with no low flows support the conclusion that there are no negative water quality impacts associated with channel maintenance. For this reason sediment pollutant loading estimates are unnecessary, and would only prove that channel maintenance has a greater positive impact on water quality than leaving the plants and sediment in place.

Note: Attach Estimate of Gravel and Cobble Calculations and Sediment Pollutant Loading Calculations

MAINTENANCE IMPACTS

Evaluation of Benefits / Impacts:

Are there constituents that have potential impacts greater than benefits?

Yes No

After analyzing the channel per the SOP in the IWQA, it can be seen that there are no negative water quality impacts associated with channel maintenance.

If so, identify constituents here and compare measured concentrations to thresholds.

Note: Attach Model Calculation Worksheet showing all constituents.

MITIGATION

If impacts are identified, list potential mitigation efforts (e.g., BMPs type(s) and number(s)) that may be implemented in the watershed:

The IWQA has determined there are no negative impacts to water quality associated with channel maintenance.

Note: Attach Model Calculation Worksheet.

ADDITIONAL COMMENTS OR RECOMMENDATIONS

The proposed maintenance activities would result in a pollutant reduction benefit due to sediment removal as a result of the proposed maintenance activities, and therefore no activity-specific, long-term water quality measures must be taken as part of the proposed maintenance. However, the City of San Diego will continue to implement general water quality improvement activities, as required by the Coastal development Permit (CDP).

As required by the CDP, the City will utilize a suite of pollution prevention, source control and treatment BMPs to address sediment and other pollutant inputs to the Mission Bay from upstream drainage areas. The specific actions to be taken within the Mission Bay drainage area, as excerpted from Table ES.1, of the Supplemental Information-Water Quality Submittal (October 2012), associated with the Master Coastal Development Permit (A-6-NOC-11-086), City of San Diego Master Storm Water System Maintenance Program are identified in the table on the following page.

In addition, a dry weather diversion facility is located at the downstream end of the Mission Bay High School and Pacific Beach Drive/Olney Street Channels by the Mission Bay Sewage Interceptor System (MBSIS). The diversion treats 100% of the dry weather runoff by diverting it to the sanitary sewer system.

**TABLE 1: PROPOSED WATER QUALITY IMPROVEMENT ACTIVITIES
IN MISSION BAY**

| Number | Priority Channel Area Drainage | Water Quality Activity Type | Description | Implementation Frequency | Duration |
|---------------|---------------------------------------|------------------------------------|-----------------------------------------------------------------------------------------|---------------------------------|-------------------------------------------------------------|
| 5 | Mission Bay | Pollution prevention | Commercial and residential property sediment reduction outreach distribution. | 152 parcels | Approximately one month prior to maintenance initiation. |
| 6 | | Source Control | Street sweeping improvements - targeted vacuum-assisted/regenerative air machine usage. | 1.0 curb miles | One year subsequent to sediment removal maintenance events. |
| 7 | | Source Control | Street sweeping improvements – targeted median sweeping route addition. | 0.9 curb miles | |
| 8 | | Treatment ¹ | Enhanced catch basin inspection and as-needed cleaning implementation. | 10 inlet locations | |

¹ *The MBSIS dry weather diversion is located at the downstream end of the Mission Bay High School and Pacific Beach Drive/Olney Street Channels. The diversion treats 100% of the dry weather runoff by diverting it to the sanitary sewer system.*

LIST OF ATTACHMENTS (Check All That Apply):

- Site Photos
- Chain of Custody Sheet(s) for Sediment Sampling
- Analytical Results of Sediment Sample(s)
- Chain of Custody Sheet(s) for Water Column Sampling
- Analytical Results of Water Column Sample(s)
- Flow Measurement Model
- Volume Measurement Model (Existing Condition)
- Wetland Land Assessment Scoring Sheet (Existing Condition)
- Wetland Land Recovery Assessment Scoring Sheet (Maintained Storm water facility)
- Sieve Analysis Laboratory Results
- Sediment Pollutant Loading Model (Load Removal in Sediment)
- Potential Water Quality Impacts Model and Comparison to Benefits
- Potential Mitigation Efforts Model
- Figures: Regional Location Map, Project Vicinity Maps (Aerial &USGS)
- Attachment 1: IMP Maintenance Methodology Table

SITE PHOTOS

Date Taken: June 16, 2014

1.



Mission Bay High School Channel with vegetation and some minor standing water, no flow velocity observed. (Photos 1 & 2)

2.



3.



Downstream End of Mission Bay High School Channel, no standing water or flowing water observed. (Photos 3 & 4)

4.



5.



Upstream end of Pacific Beach/Olney Street Channel. No standing or flowing water observed

6.



Downstream end of Pacific Beach/Olney Street Channel. No standing or flowing water observed

7.



Culvert located at downstream end of Pacific Beach/Olney Street Channel. No standing or flowing water observed

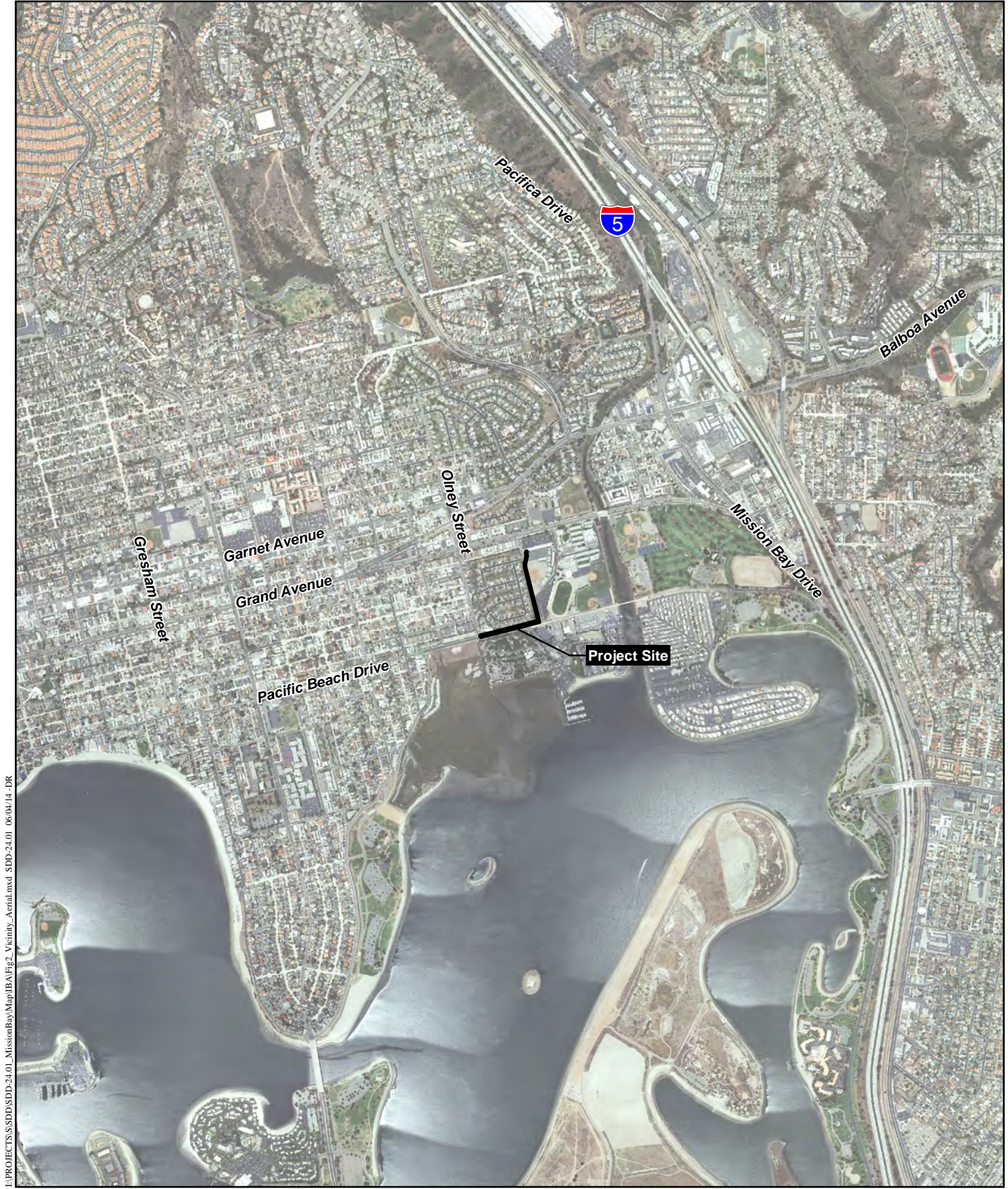
8.



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Regional Location Map

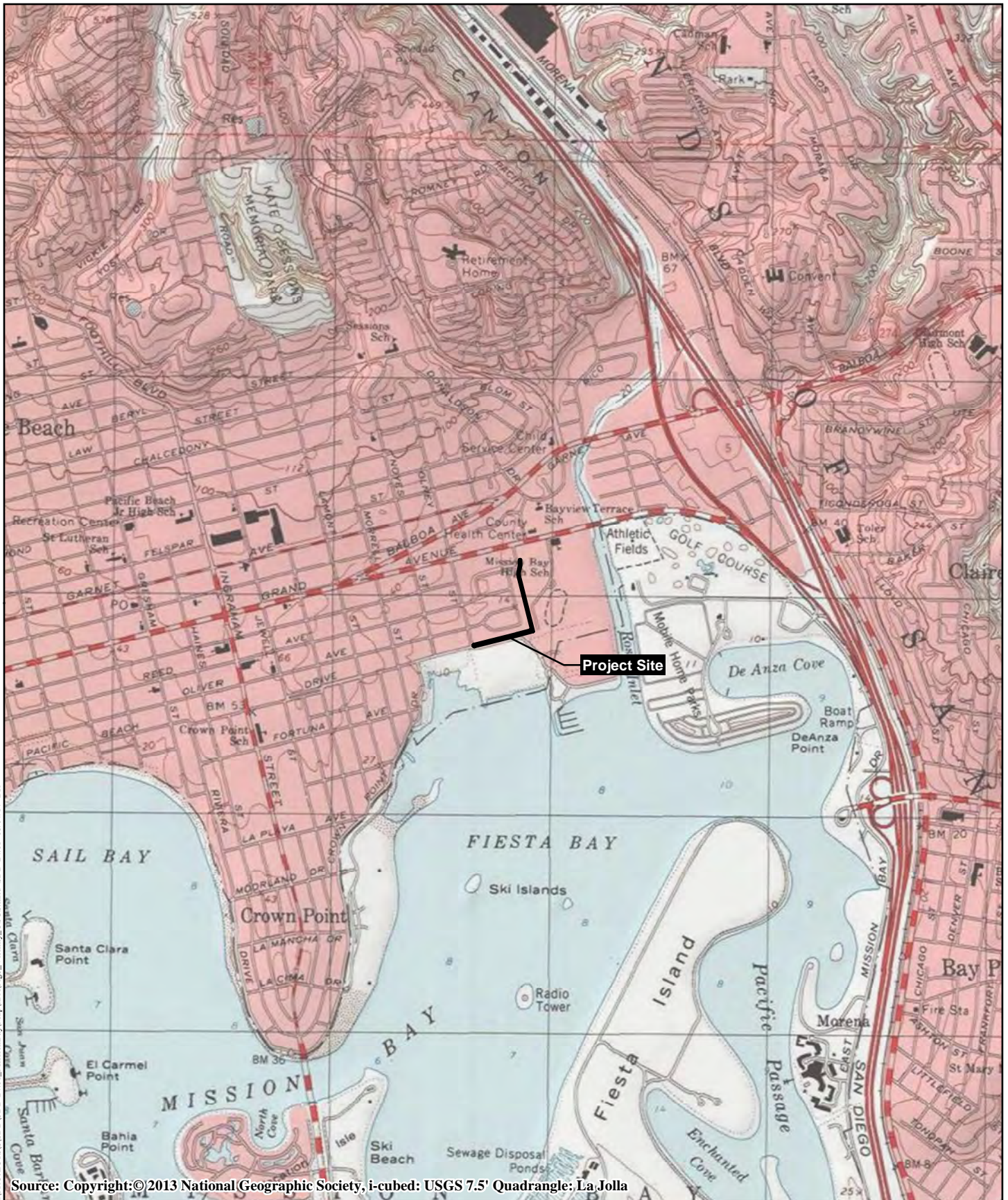
STORM WATER FACILITY MAPS 36 & 37 (MISSION BAY HIGH SCHOOL AND PACIFIC BEACH DRIVE/OLNEY STREET CHANNELS)



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Project Vicinity Map (Aerial Photograph)

STORM WATER FACILITY MAPS 36 & 37 (MISSION BAY HIGH SCHOOL AND PACIFIC BEACH DRIVE/OLNEY STREET CHANNELS)



Project Vicinity Map (USGS Topography)
 STORM WATER FACILITY MAPS 36 & 37 (MISSION BAY HIGH SCHOOL
 AND PACIFIC BEACH DRIVE/OLNEY STREET CHANNELS)

ATTACHMENT 1: IMP MAINTENANCE METHODOLOGY TABLE

**Mission Bay High School and Pacific Beach Drive/Olney Channels –
MMP MAP No. 36 & 37
IMP Maintenance Methodology Table**

| FACILITY/CHANNEL | MISSION BAY HIGH SCHOOL (MBHS) AND PACIFIC BEACH/OLNEY (PB/OLNEY) CHANNELS | |
|----------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DIMENSIONS | <u>MBHS CHANNEL</u> TRAPAZOIDAL, CONCRETE-LINED 1,075' LENGTH APPROX. 10' TOP WIDTH 4' BOTTOM WIDTH 2' IN DEPTH 1/2-1' OF SEDIMENT 40-70 CUBIC YARDS MAXIMUM CUBIC YARDS: 150 | <u>PB/OLNEYCHANNEL</u> EARTHEN 897' LENGTH APPROX. 20-26' TOP WIDTH 3-5' BOTTOM WIDTH 5-6' IN DEPTH 1/2-1' OF SEDIMENT 80-140 CUBIC YARDS MAXIMUM CUBIC YARDS: 250 |
| MAINTENANCE METHOD | MECHANIZED SEDIMENT & VEGETATION REMOVAL | |
| EQUIPMENT (EQUIPMENT WILL BE EQUIVALENT OR SMALLER IN SIZE/TYPE) | <ul style="list-style-type: none"> • GRADALL • SKID STEER (BOBCAT S650) • RUBBER TRACKED SKIDSTEER (JOHN DEERE 333E) • EXCAVATOR (JOHN DEERE 50D) • DUMP TRUCKS(S) (10/12 YD) • BACKHOE (JOHN DEERE 410K) • VACTOR (2100 PLUS PD) | |
| SCHEDULE | IN CHANNEL WORK WILL TAKE 1-2 WEEKS – 7 DAYS A WEEK; 7:00 AM TO 7:00 PM. | |
| STAFFING | MON-FRI – 6 TO 8 PEOPLE SA-SUN – 6 TO 10 PEOPLE (ADDITIONAL TRUCK DRIVERS MAY BE AVAILABLE) | |
| MAINTENANCE PROCEDURE | | |
| CHANNEL SEQUENCE | 1. <u>MBHS CHANNEL</u> STATION 9+97 TO 20+72 2. <u>PB/OLNEY CHANNEL</u> PB 1 (STATION 8+58 TO 9+97) PB 2 (STATION 1+00 TO 8+58) | |
| ACCESS & LOADING AREA(S) | <u>MBHS CHANNEL</u> <i>ACCESS & LOADING AREA – MB1:</i> STATION 10+04 TO 13+09, (305' X 20') - EXCAVATOR & SKID STEER ENTER/EXIT(S) CHANNEL FROM PARKING LOT <i>LOADING AREA – MB2:</i> STATION 20+00 TO 20.72 (72' X 20') – VACTOR TO REMOVE STANDING, INCOMING, OR CONTAINED WATER FROM CHANNEL <u>PB/OLNEY CHANNEL</u> <i>ACCESS & LOADING AREA – PB1:</i> STATION 8+58 TO 8+73, (15' X 20') - RUBBER TRACKED SKID - STEER ENTER/EXIT(S) CHANNEL FROM PACIFIC BEACH DRIVE <i>LOADING AREA – PB2:</i> STATION 1+08 TO 8+58, (750' X 20') - GRADALL LOADS TRUCKS | |

**Mission Bay High School and Pacific Beach Drive/Olney Channels –
MMP MAP No. 36 & 37
IMP Maintenance Methodology Table**

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| STAGING & STOCKPILE AREA | N/A – NO EQUIPMENT WILL BE STAGED ON SITE. ALL MATERIALS WILL BE HAULED IMMEDIATELY TO A LEGAL DISPOSAL SITE (MIRAMAR LANDIFLL). |
| METHODOLOGY | <p><u>MBHS CHANNEL</u></p> <ol style="list-style-type: none"> 1. VACTOR(S) TO REMOVE STANDING WATER FROM CHANNEL AT STA 20+72 & THEN POSITION VACTORS AT STA 20+72 & STA 10+04 TO CAPTURE ANY INCOMING OR CONTAINED FLOWS. 2. CREWS INSTALL TEMPORARY SANDBAG BERM ACROSS CHANNEL AT DOWNSTREAM END OF MBHS CHANNEL. 3. SKID-STEER(S) AND/OR EXCAVATOR ENTER/EXIT(S) CHANNEL AT ACCESS & LOADING AREA-MB1. 4. EXCAVATOR MAY BE UTILIZED IN THE CHANNEL IF NECESSARY TO MOVE VEGETATION TO GRADALL, DUE TO CHANNEL GEOMETRY 5. SKID-STEER(S) PUSH VEGETATION & SEDIMENT TO GRADALL STATIONED OUTISDE OF CHANNEL WITHIN ACCESS & LOADING AREA-MB1. 6. GRADALL STATIONED AT ACCESS & LOADING AREA-MB1 SCOOPS MATERIAL FROM CENTRAL LOCATION WITHIN CHANNEL & LOADS MATERIAL INTO WAITING DUMP TRUCK LOCATED IN EXISTING PAVED PARKING LOT. 7. DUMP TRUCKS HAUL MATERIAL TO LEGAL DISPOSAL SITE. 8. SKID-STEER & EXCAVATOR EXITS CHANNEL. <p><u>PB/OLNEY CHANNEL (PB 1)</u></p> <ol style="list-style-type: none"> 1. VACTOR(S) TO REMOVE STANDING WATER FROM CHANNEL AND CAPTURE ANY INCOMING OR CONTAINED FLOWS AT STA 8+73. 2. CREWS INSTALL TEMPORARY SANDBAG BERM ACROSS PIPE INLET AT DOWNSTREAM END OF PB/OLNEY CHANNEL. 3. RUBBER TRACKED SKID - STEER ENTER/EXIT(S) CHANNEL AT ACCESS POINT WITHIN ACCESS & LOADING AREA-PB1. 4. RUBBER TRACKED SKID - STEER PUSHES MATERIAL TO GRADALL STATIONED ALONG ACCESS & LOADING AREA-PB1 UNTIL IT REACHES EASTERN LIMIT OF WORK (STATION 9+97). 5. GRADALL LOADS MATERIALS FROM PB/ONLEY CHANNEL DIRECTLY INTO DUMP TRUCKS. 6. DUMP TRUCK HAULS MATERIAL TO LEGAL DISPOSAL SITE. <p><u>PB/OLNEY CHANNEL (PB 2)</u></p> <ol style="list-style-type: none"> 1. GRADALL POSITIONS ITSELF ALONG LOADING AREA-PB2 ABOVE CHANNEL BANK & SCOOPS VEGETATION & SEDIMENT FROM CHANNEL INTO DUMP TRUCKS. |

**Mission Bay High School and Pacific Beach Drive/Olney Channels –
MMP MAP No. 36 & 37
IMP Maintenance Methodology Table**

| | |
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| | <ol style="list-style-type: none"> 2. DUMP TRUCK HAULS MATERIAL TO LEGAL DISPOSAL SITE. 3. REMOVE SANDBAG BERM FROM DOWNSTREAM END OF CHANNEL. |
| POST-MAINTENANCE | <ol style="list-style-type: none"> 1. DEMOBILIZE EQUIPMENT. 2. REMOVE TEMPORARY CONSTRUCTION BMPS. |
| OTHER NOTES | <ol style="list-style-type: none"> 1. SWEEPERS WILL SWEEP ADJACENT PUBLIC RIGHTS-OF-WAY AND IMMEDIATE TRUCK LOADING SITES NIGHTLY. 2. REMOVE STANDING WATER (IF ANY) WITHIN DRAINAGE FACILITY WITH VACTOR. 3. EQUIPMENT FUELED OUTSIDE CHANNEL & LOCATED AT LEAST 150' FROM WATERS OF US/STATE. 4. BICYCLE/PEDESTRIAN PATH TO BE CLOSED DURING MAINTENANCE ACTIVITIES. |