

SAN DIEGO BAY WATERSHED URBAN RUNOFF MANAGEMENT PROGRAM



FISCAL YEAR 2012 ANNUAL REPORT

JANUARY 31, 2013

PREPARED AND SUBMITTED BY THE SAN DIEGO BAY WATERSHED
COPERMITTEES

CITY OF CHULA VISTA
CITY OF CORONADO
CITY OF IMPERIAL BEACH
CITY OF LA MESA
CITY OF LEMON GROVE
CITY OF NATIONAL CITY
CITY OF SAN DIEGO
COUNTY OF SAN DIEGO
PORT OF SAN DIEGO
SAN DIEGO COUNTY REGIONAL AIRPORT AUTHORITY

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EXECUTIVE SUMMARY

Since January 2002, the County of San Diego, Port of San Diego, the San Diego County Regional Airport Authority (Airport Authority), and the Cities of Chula Vista, Coronado, Imperial Beach, La Mesa, Lemon Grove, National City, and San Diego (San Diego Bay Copermittees) have been active in developing and implementing watershed-based programs in the San Diego Bay Watershed Management Area (WMA). This Annual Report represents the San Diego Bay Copermittees' efforts during Fiscal Year 2011-2012 (FY 2012) to meet the requirements of Section E of the Municipal Stormwater Permit Order Number R9-2007-0001 (Municipal Permit or Permit) and develop and implement the San Diego Bay Watershed Urban Runoff Management Program (WURMP).

The San Diego Bay Copermittees continue to improve watershed efforts in the San Diego Bay WMA, using innovative methods and new tools as they become available. The overarching goal for the San Diego Bay WURMP is to cooperatively and through collaborative strategic planning, decrease the impacts of potential sources and reduce the discharge of pollutants from the Municipal Separate Storm Sewer System (MS4) that have been identified as potentially causing high priority water quality problems. Using the Watershed Strategy developed in the 2008 San Diego Bay WURMP document for guidance, each Copermittee individually selected activities that were feasible to implement in their jurisdiction, and were appropriate for its relative contribution to the watershed's high priority water quality problems.

The San Diego Bay Watershed Management Area (WMA), as defined by the Municipal Permit, is unique in that there are three major watersheds that comprise the WMA: Pueblo San Diego (908 Hydrologic Unit (HU)), Sweetwater (909 HU), and Otay (910 HU). Each HU is comprised of Hydrologic Areas (HAs). The HUs vary greatly in size, land use, population, and have different water quality issues as a result. The San Diego Bay Copermittees have developed and implemented activities to address the variety of issues throughout the WMA.

During this reporting period, the San Diego Bay Copermittees continued implementation of watershed activities and assessments. The activities and assessments include: (1) a water quality assessment; (2) a pollutant source assessment; (3) planning and implementation of watershed activities; and (4) an assessment of the Copermittees activities in the WMA. An integrated assessment of activity effectiveness within each HA was conducted to determine the collective impact of the activities on the targeted high priority pollutants and/or pollutant sources.

As required, Copermittees implemented activities in the WMA as part of their Jurisdictional Urban Runoff Management Program (JURMP) and WURMP programs. In an effort to report on the Copermittees' actions to improve water quality in the WMA, the Copermittees collected and reported JURMP and WURMP activities performed on a hydrologic area (HA) basis. It should be noted that while the information in this report does not account for all JURMP activities undertaken by each Copermittee, the San Diego Bay Copermittees are utilizing a more holistic approach to evaluate all efforts taken to improve stormwater quality through applicable stormwater programs within the WMA. In addition, estimates were used to generate quantifiable result for some of the reported JURMP activities (this process is explained in [Appendix B](#)). This is an important step to integrate the activities and reporting to best assess and plan for activities that address the identified high priority water quality problems (HPWQPs) on an HA basis.

A summary of the program accomplishments for FY 2012 is found below:

Water Quality and Pollutant Source Assessment

A water quality assessment was performed that includes a summary of analysis of the urban runoff and receiving waters in the San Diego Bay WMA based on data collected and analyzed during the reporting period. In order to assess the water quality of regional WMAs on an annual basis, Regional Copermittees completed the San Diego County Municipal Copermittees Urban Runoff Monitoring Report (Annual Monitoring Report) for FY 2012 in compliance with the Municipal Permit. Assessment of the available water quality data from the Annual Monitoring Report indicated that there were no changes in FY 2012 to the previous year’s HPWQPs.

ES-1: San Diego Bay Baseline High Priority Water Quality Problems

HA	Pollutant Categories						
	Bacteria	Gross Pollutants	Metals	Oil and Grease	Pesticides	Sediment	Trash
Pueblo San Diego HU							
908.1	X	X	X	X	X		
908.2	X		X		X	X	X
908.3	X					X	X
Sweetwater HU							
909.1	X						
909.2					X		
909.3							
Otay HU							
910.1	X	X					
910.2	X						
910.3							

During this reporting period, the Copermittees updated their assessment of potential pollutant generating sources in each hydrologic area in the WMA. The purpose of the assessment was to identify the high priority pollutant sources in each hydrologic area based on the HPWQPs identified and each source category’s likelihood of generating those pollutants. For example, an HA with bacteria as a HPWQP would have sources such as Food Establishments and Animal Facilities included as high priority sources (in addition to others) based on these sources’ potential for generating bacteria as a pollutant.

Implementation of Watershed Activities

WURMP activities required by the Municipal Permit were conducted during the reporting period. Collectively, the San Diego Bay WMA Copermittees implemented eight (8) watershed education activities, 25 water quality activities, and three (3) monitoring or source identification studies during the reporting period. Each WURMP Activity is associated with at least one of the HPWQPs in each HA where the activity is implemented. Table ES-2 provides a summary of the activities, and details of these activities are found in Section 3 and [Appendix C](#) of this Annual Report. Activities selected and conducted by the Copermittees during the reporting period address the overall goal of the WURMP and the Permit by focusing on the HPWQPs within the WMA. In addition, the San Diego Bay WMA Copermittees implemented activities associated

with Total Maximum Daily Loads (TMDLs) in certain HAs which are also detailed in Sections 3, 4 and **Appendices D, F, G, and H**.

ES-2: San Diego Bay WMA Activities Implemented in FY 2012

Activity Implemented in FY 2012	HA Where Implementation Occurred									Pollutants Addressed by Activity									
	908.1	908.2	908.3	909.1	909.2	909.3	910.1	910.2	910.3	Bacteria	Dissolved Minerals	Gross Pollutants	Metals	Nutrients	Oil and Grease	Organics	Pesticides	Sediment	Trash
Watershed Water Quality Activities																			
SDB-001 Pet Waste Bag Collaborative Watershed Activity	X	X	X	X			X	X	X	•				•					
SDB-001A Pet Waste Bag Dispenser Program in County Parks		X		X	X	X		X	X	•				•					
SDB-002B El Cajon Blvd. Storm Drain Inlet Retrofit for Chollas Creek Watershed Protection Project		X	X	X						•								•	•
SDB-004 San Diego Bay Clean-up Events Collaborative Activity		X	X	X			X	X		•									•
SDB-005 Clean Community Program			X	X						•	•								•
SDB-007 Additional Dry Season Construction Inspections			X	X														•	•
SDB-009 Enhanced Construction Inspections		X																•	
SDB-014 Southcrest Park Green Lot Infiltration Project		X								•			•						
SDB-015 Memorial Park Green Lot Infiltration Project		X								•			•						
SDB-035 Update Recycling and Solid Waste Planning Manual				X				X	X	•				•					•
SDB-037 43 rd & Logan Biofiltration Project for Chollas Creek Watershed Protection (Green Street)		X								•			•						
SDB-046 Land Acquisitions San Diego Bay Watershed				X	X			X	X	•	•	•	•	•	•	•	•	•	•
SDB-047 Large Special Event Inspection and Clean-up							X	X		•									
SDB-048 Outdoor Special Event Oversight		X																	•
SDB-049 Maple Street Canyon Water Quality Improvement Project		X								•								•	•
SDB-050 Chollas Creek Runoff Reduction & Groundwater Recharge Project		X											•						

Activity Implemented in FY 2012	HA Where Implementation Occurred									Pollutants Addressed by Activity									
	908.1	908.2	908.3	909.1	909.2	909.3	910.1	910.2	910.3	Bacteria	Dissolved Minerals	Gross Pollutants	Metals	Nutrients	Oil and Grease	Organics	Pesticides	Sediment	Trash
SDB-052 Palm Avenue Storm Water Diverter							X			•			•	•			•	•	
SDB-056 Storm Water Quality Master Plans for Special Drainage Fee Areas		X			X	X		X	X	•	•	•	•	•	•	•	•	•	•
SDB-058 Beta Street Green Ally		X								•		•	•		•		•	•	•
SDB-062 Residential Rain Barrel Subsidies & Distribution		X			X	X		X	X	•	•	•	•	•	•	•	•	•	•
SDB-071 Targeted Catch Basin Cleaning Pilot Study		X								•		•	•					•	•
SDB-072 Municipal Best Management Practices/Irrigation/Xeriscape		X								•			•	•		•	•	•	
SDB-074 National City Multi-Family Residential Property Evaluation			X	X						•	•	•	•	•	•	•	•	•	•
SDB-076 Rainwater Harvesting Rebate Pilot Program	X	X	X	X				X		•		•	•	•	•	•	•	•	
SDB-077 Qualcomm Stadium Drop-off Community Clean-up & Recycling Event Sponsorship	X	X	X	X				X		•									•
Watershed Education Activities																			
SDB-039 Provide Homeowner’s Association Education About Storm Water Pollution Prevention				X				X	X	•									
SDB-040 Storm Water Education Booth at Pet Festival and Doggy Dash				X				X	X	•									
SDB-041 Fats, Oils, and Grease (FOG) Program				X				X	X	•					•				
SDB-045 ILACSD School Watershed Presentations		X	X	X				X		•	•	•	•	•	•	•	•	•	•
SDB-055 San Diego Bay Watershed Brochure	X	X	X	X				X	X	•	•	•	•	•	•	•	•	•	•
SDB-066 Focused Outreach to Equestrian Community				X	X	X		X	X	•				•				•	
SDB-073 Walk the Watershed Otay HU								X		•		•	•		•		•	•	•
SDB-075 Juneteenth		X								•					•		•		•

Activity Implemented in FY 2012	HA Where Implementation Occurred									Pollutants Addressed by Activity									
	908.1	908.2	908.3	909.1	909.2	909.3	910.1	910.2	910.3	Bacteria	Dissolved Minerals	Gross Pollutants	Metals	Nutrients	Oil and Grease	Organics	Pesticides	Sediment	Trash
Watershed Monitoring Activities																			
SDB-020 Enhanced Dry Weather Monitoring Program		X								•	•	•	•	•	•	•	•	•	•
SDB-021 Coordinated Dry Weather Monitoring Program	X	X								•			•	•		•	•	•	•
SDB-025 Regional Harbor Monitoring Program	X	X	X	X			X			•	•	•	•	•	•	•	•	•	•

Effectiveness Assessment

The San Diego Bay WMA Copermittees continue to improve the program's effectiveness assessment by utilizing where appropriate, the six-level assessment framework prepared by the Regional Copermittees in October 2003. This year's assessment continues to not only evaluate the effectiveness of each individual activity implemented during the reporting period, but also the overall program effectiveness. Activities such as public participation at cleanup events, the general public's use of household hazardous waste (HHW) collection facilities and pet waste bags covered multiple levels of assessment resulting in increases in awareness, behavior changes, and load reductions. An increase in knowledge and awareness were demonstrated through various education activities throughout the WMA to a variety of audiences (Level 2). Public participation in trash cleanups and collection events also indicate behavioral change (Level 3). Through inspection activities, Copermittees were able to demonstrate positive changes in behavior (Level 3) as well as abate specific pollutant sources (Level 4). The San Diego Bay Copermittees also achieved load reductions as well as source abatement (Level 4) through various programs that either targeted the pollutants of concern or the pollutant sources. Notably, 238 tons of trash and debris were collected from shorelines, streets, and waterways throughout the WMA during cleanup events this reporting year.

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1 INTRODUCTION

The NPDES Municipal Stormwater Permit, Order No. R9-2007-0001, referred to throughout this document as the “Permit” or “Municipal Permit,” requires the Copermittees within the San Diego Bay Watershed Management Area (WMA) to collaborate on the development and implementation of a Watershed Urban Runoff Management Program (WURMP). Since 2002, the San Diego Bay Watershed Copermittees have worked together to successfully implement the San Diego Bay WURMP, a collaborative effort to address high priority surface water quality issues throughout the San Diego Bay WMA. On March 24, 2008, the San Diego Bay Watershed Copermittees began implementation of the current San Diego Bay WURMP. The program includes identifying and addressing high priority water quality problems in the WMA, developing and implementing activities that include pollutant load reduction and abatement (Watershed Water Quality Activities), Watershed Education Activities, as well as public participation and collaborative land use planning.

This Annual Report reflects the efforts of the San Diego Bay Watershed Copermittees, referred to throughout this document as San Diego Bay Copermittees, during the reporting period from July 1, 2011, through June 30, 2012 (FY 2012). This Annual Report is divided into five sections as presented below.

Section 2 – Water Quality and Pollutant Source Assessment

This section provides an update of water quality throughout the WMA, identifies high priority water quality problems (HPWQP) in each hydrologic area (HA), and provides information about potential pollutant sources causing these problems.

Section 3 – Implementation of Watershed Activities

This section describes the Watershed Water Quality and Watershed Education Activities that occurred during this reporting period, collaborative land use planning, and additional education and public participation activities that took place. As required, Copermittees implemented activities in the WMA as part of their WURMP and Jurisdictional Urban Runoff Management Program (JURMP). In an effort to report on the Copermittees’ actions to improve water quality in the WMA, the Copermittees collected and reported on JURMP and WURMP activities performed on an HA basis. The information does not include all JURMP activities implemented by the Copermittees and for some data sets quantities were estimated ([Appendix B](#)). This is an important step toward integrating activities and reporting to best assess and plan for activities that address the identified HPWQPs on an HA basis. This section also summarizes the Total Maximum Daily Load (TMDL)-related activities implemented by named dischargers of TMDLs within the San Diego Bay WMA. Detailed information on the results and status of each Named Dischargers’ TMDL activities is located in [Appendix D](#).

Section 4 – Effectiveness Assessment

This section discusses WURMP effectiveness as a whole. The main goals of this section are to: 1) assess collaboration among San Diego Bay Copermittees; 2) determine whether watershed activities are focused on appropriate water quality problems; 3) assess whether targeted outcomes are being achieved; and 4) evaluate the collective impact of all WURMP activities on pollutant loads, urban runoff discharge quality, and receiving water quality at the HA scale. This section includes an assessment of compliance with TMDLs in the San Diego Bay WMA and the effectiveness of activities implemented by the Named Dischargers.

Section 5 – Conclusions and Recommendations

This section provides conclusions reached during FY 2012 as well as recommendations for future reporting periods.

Section 6 – References

This section provides information on the sources referenced in this annual report.

In addition, this document functions as the primary reporting mechanism for all TMDL activities implemented for each approved TMDL in the San Diego Bay WMA. TMDL Implementation Plans often integrate existing watershed, regional, and jurisdictional programs (as well as agency-wide programs for state and federal Dischargers) under existing National Pollutant Discharge Elimination System (NPDES) permit requirements. The integration of these activities provides a comprehensive evaluation of watershed-wide efforts to address a particular TMDL. As a result, this Annual Report provides a logical platform for annual reporting of efforts to address TMDLs within the San Diego Bay WMA. There are five approved TMDLs in the San Diego Bay WMA:

- Resolution No. R9-2002-01213 and associated Investigative Order No. R9-2004-0277 (for monitoring and reporting), California Department of Transportation and San Diego Municipal Separate Storm Sewer System Copermittees Responsible for the Discharge of Diazinon into the Chollas Creek Watershed (Chollas Creek Diazinon TMDL);
- Resolution No. R9-2007-0043, A Resolution Adopting An Amendment to the Water Quality Control Plan for the San Diego Basin (9) to Incorporate Total Maximum Daily Loads for Dissolved Copper, Lead, and Zinc in Chollas Creek, Tributary to San Diego Bay (Chollas Creek Dissolved Metals TMDL);
- Resolution No. R9-2005-0019, A Resolution Adopting An Amendment to the Water Quality Control Plan for the San Diego Region to Incorporate a Total Maximum Daily Load for Dissolved Copper in Shelter Island Yacht Basin, San Diego Bay (Shelter Island Yacht Basin (SIYB) Dissolved Copper TMDL);
- Resolution No. R9-2008-0027, A Resolution to Adopt an Amendment to the Water Quality Control Plan for the San Diego Basin (9) to Incorporate Total Maximum Daily Loads for Indicator Bacteria, Baby Beach in Dana Point Harbor and Shelter Island Shoreline Park in San Diego Bay (Baby Beach and Shelter Island Shoreline Park Indicator Bacteria TMDL); and
- Resolution No. R9-2010-0001, A Resolution Amending the Water Quality Control Plan for the San Diego Basin (9) to Incorporate Revised Total Maximum Daily Loads for Indicator Bacteria, Project I – Twenty Beaches and Creeks in the San Diego Region (Including Tecolote Creek) (Revised TMDL for Indicator Bacteria, Project I).

1.1 WURMP COPERMITTEE COLLABORATION

WURMP development and implementation is a collaborative effort by all of the following San Diego Bay Copermittees:

- City of Chula Vista
- City of Coronado
- City of Imperial Beach

- City of La Mesa
- City of Lemon Grove
- City of National City
- City of San Diego
- County of San Diego
- San Diego Unified Port District (Port of San Diego)
- San Diego County Regional Airport Authority (Airport Authority)

The Port of San Diego is the lead Copermittee and continues to serve as both coordinator of collaborative efforts among San Diego Bay Copermittees and liaison between Copermittees and Regional Water Quality Control Board (RWQCB) staff. The San Diego Bay Copermittees met 11 times during this reporting period – [Appendix E](#) provides a summary of the dates and general topics of discussion. The majority of the meetings focused on the implementation of the San Diego Bay WURMP.

During the reporting period, the San Diego Bay Copermittees continued to collaborate extensively on the development of the Watershed Strategy that guides WURMP activity selection. An extensive explanation of the San Diego Bay Watershed Strategy (Watershed Strategy) was presented in the 2008 San Diego Bay WURMP document. The *Water Quality Control Plan for the San Diego Basin* (SDRWQCB, 1994) defines the San Diego Bay WMA as being comprised of three watersheds, or hydrologic units (HUs). They are the Pueblo San Diego Watershed, the Sweetwater Watershed, and the Otay Watershed. These HUs are further divided into hydrologic areas (HAs). The San Diego Bay Copermittees developed a database of baseline information consisting of land use, water quality monitoring data, and other information on potential pollutant sources, and identified the high priority water quality problems on a HA level.

Collaboration on the Watershed Strategy also enabled the San Diego Bay Copermittees to identify data gaps by reviewing existing monitoring and land use data. Such data provided the basis for developing additional water quality monitoring and source identification activities such as the coordinated dry weather monitoring program being implemented by the City of San Diego, the Port of San Diego, and the Airport Authority. Section 3 provides specific detail on each program that was initiated or completed during the FY 2012 reporting period.

1.2 TMDL NAMED DISCHARGERS COLLABORATION

Chollas Creek Dissolved Metals, Diazinon, and Indicator Bacteria TMDLs

This reporting year represents the fourth year the Chollas Creek Dissolved Metals TMDL is in effect. It was approved by the State Board Office of Administrative Law on October 22, 2008. During the reporting period, the permitted Municipal Separate Storm Sewer System (MS4) dischargers named in the TMDL collaborated on a multi-pollutant strategy for addressing the TMDL.

The Implementation Plan was submitted on October 21, 2009, to the RWQCB. The named dischargers include five watershed Copermittees, Cities of San Diego, La Mesa, Lemon Grove, County of San Diego, Port of San Diego, as well as the U.S. Navy and the California Department of Transportation (Caltrans). The named parties under the Diazinon TMDL include the same dischargers under the Chollas Creek Metals TMDL. In addition to the collaborative Implementation Plan, each discharger developed their own list of activities they participated in

or will participate in to address the TMDLs. Dischargers met 11 times during this reporting year:

- July 18, 2011
- September 19, 2011
- October 20, 2011
- November 14, 2011
- December 19, 2011
- January 23, 2012
- February 27, 2012
- March 26, 2012
- April 30, 2012
- May 2, 2012
- June 18, 2012

Additionally, the dischargers began attending joint TMDL meetings for both the Metals TMDL dischargers and the Bacteria TMDL responsible parties. The Bacteria TMDL dischargers include the same five watershed Copermittees (Cities of San Diego, La Mesa, Lemon Grove, County of San Diego, and Port of San Diego) and Caltrans. The Bacteria TMDL responsible parties met weekly for development of the Comprehensive Load Reduction Plan (CLRP) during FY 2012. Further discussion on the efforts made by the dischargers during FY 2012 is provided in Sections 3.5.2 and 4.2.2.

Because the strategy for addressing the Bacteria TMDL is multi-pollutant and watershed based, the reporting of activities under this TMDL incorporates those activities for the Chollas Creek Diazinon and Dissolved Metals TMDLs as well. Investigative Order R9-2004-0277 requires status reports of specific implementation elements. Further information on these specific elements is included in the 2011–2012 Chollas Creek TMDL Compliance Monitoring Report in [Appendix F](#).

Shelter Island Yacht Basin Dissolved Copper TMDL

The named parties in the SIYB Dissolved Copper TMDL include two watershed Copermittees (the Port of San Diego and the City of San Diego), the SIYB marinas and yacht clubs, and hull cleaners. On March 11, 2011, the RWQCB issued Investigative Order No. R9-2011-0036 which directed the Port of San Diego to submit technical reports pertaining to the SIYB Dissolved Copper TMDL. The named parties completed the development of a strategy for addressing the TMDL and submitted the annual report as required during this reporting period. The Port of San Diego and SIYB marinas and yacht clubs coordinated the collection of data summarizing the implementation of BMPs and other activities in the Basin for calendar year 2011. The annual report was submitted on March 31, 2012, as discussed in [Appendix G](#).

The City of San Diego submitted the SIYB Dissolved Copper TMDL 2011-2012 Compliance Monitoring Report focusing on urban runoff discharges into SIYB on May 25, 2012 ([Appendix G](#)).

Further discussion on the efforts made by the named parties is provided in Sections 3.5.2 and 4.2.2.

1.3 SAN DIEGO BAY WATERSHED MAP UPDATES

No updates have been made to the previously submitted Watershed Map. A copy of the most recent Watershed Map can be found in the 2008 San Diego Bay WURMP document.

2 WATER QUALITY AND POLLUTANT SOURCE ASSESSMENT

In accordance with Section J.3.b.2.c. of the Municipal Permit, this section provides a summary assessment of water quality and pollutant sources in the San Diego Bay WMA. The water quality summary assessment is based on the *FY 2012 San Diego County Municipal Copermittee Receiving Waters and Urban Runoff Monitoring Report* [(Regional Monitoring Report), Weston, January 2013]. Where applicable, additional monitoring programs conducted by the San Diego Bay WMA Copermittees with respect to water quality and/or source identification studies are also incorporated into this section.

A complete presentation of the regional monitoring efforts conducted during the reporting period is located in the Regional Monitoring Report. The Regional Monitoring Report includes analysis and discussion of the Core Management Questions as required by the Municipal Permit.

In 2008, the San Diego Bay Copermittees identified HPWQPs in the San Diego Bay WURMP. In accordance with Municipal Permit requirements, monitoring data collected during each reporting period is compared to the established HPWQPs within the 2008 San Diego Bay WURMP document for assessment purposes. The findings of these comparisons are noted in the following sub-sections.

2.1 HIGH PRIORITY WATER QUALITY PROBLEMS

The San Diego Bay WURMP Copermittees developed and presented a Baseline Watershed Evaluation (BWE) which utilized the 2005 Baseline Long-Term Effectiveness Assessment (BLTEA) (MOE, Weston, LWA, August 2005) water quality ratings, monitoring data, and source information to identify HPWQPs. **Table 2-1** presents the HPWQPs by HA within the San Diego Bay WMA.

Table 2-1: San Diego Bay Baseline High Priority Water Quality Problems

HA	Pollutant Categories						
	Bacteria	Gross Pollutants	Metals	Oil and Grease	Pesticides	Sediment	Trash
Pueblo San Diego HU							
908.1	X	X	X	X	X		
908.2	X		X		X	X	X
908.3	X					X	X
Sweetwater HU							
909.1	X						
909.2					X		
909.3							
Otay HU							
910.1	X	X					
910.2	X						
910.3							

Unless there are significant long-term trends or other overwhelming evidence indicating a need for change in HPWQPs, they remain the same throughout the permit cycle. It should be noted that while data for pesticides in 909.2 indicate that pesticides (specifically Diazinon) may no longer be a HPWQP, during FY 2012 there were no changes to the HPWQPs in the WMA. The San Diego Bay Copermittees will review data and information to reassess and determine priorities in the development of a Water Quality Improvement Plan under the new MS4 Permit once it is adopted. At that time, the Copermittees will identify any modifications in priorities within the HAs.

2.2 WATER QUALITY ASSESSMENT

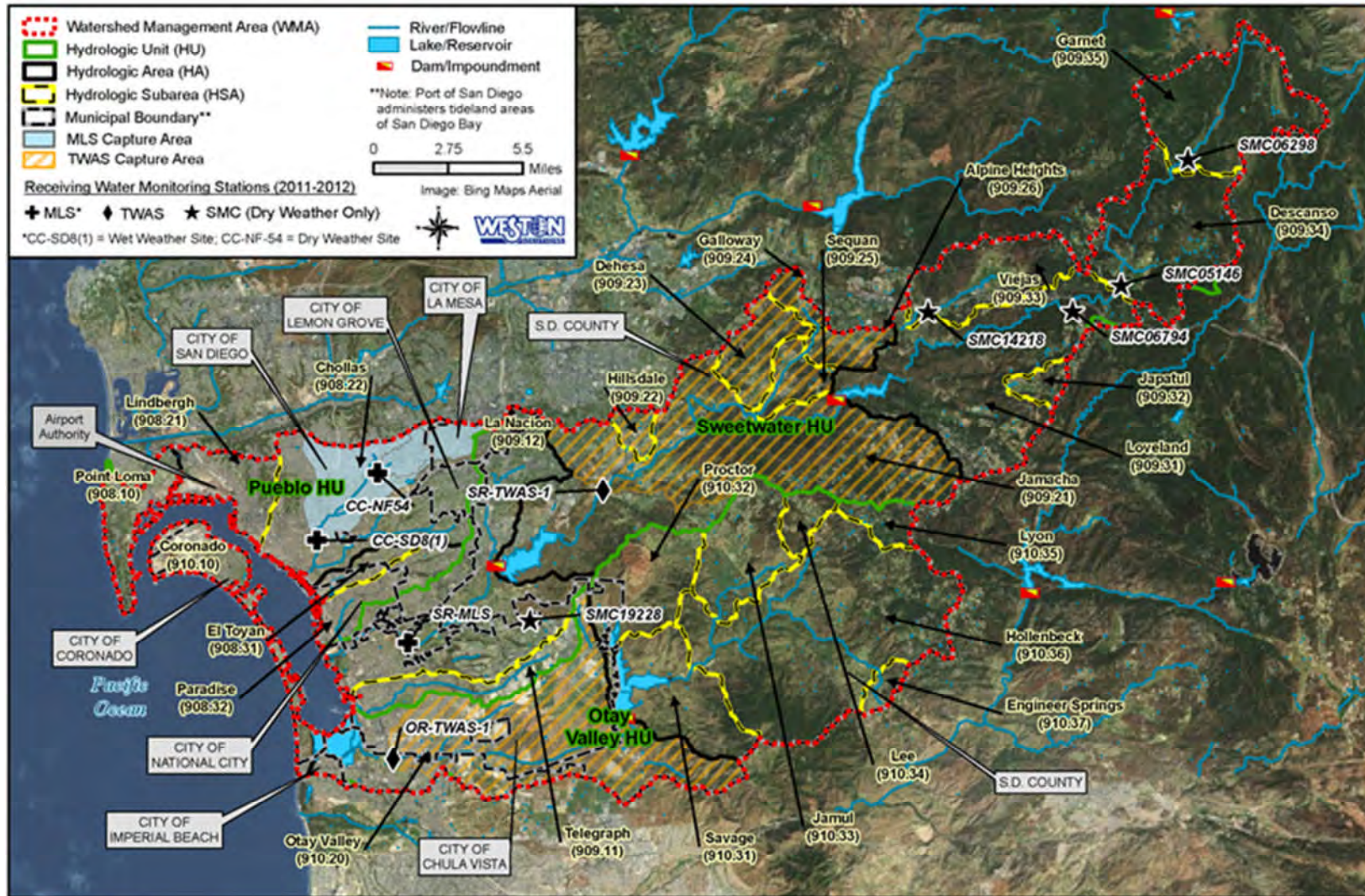
The San Diego Bay WMA consists of three major hydrologic units (HU) in the southern portion of San Diego County: Pueblo San Diego (908), Sweetwater (909), and Otay (910). Each HU varies in terms of size, population, and land use, and each has different water quality issues as a result. Each HU is analyzed independently to provide a more accurate water quality assessment. The following information is presented below for each HU:

- Relative HU characteristics
- Monitoring activities conducted during FY 2012
- Water Quality Assessment

As stated earlier, new data collected and analytical results summarized in this section and in the Regional Monitoring Report (Weston, January 2013) will be taken into consideration as watershed activities are developed, but do not affect the HPWQPs identified in the 2008 San Diego Bay WURMP.

The 2010 SWRCB Section 303(d) list was adopted by the SWRCB on August 4, 2010, and was finalized by the United States Environmental Protection Agency (USEPA) on October 11, 2011. Waterbodies which appear on the 2010 303(d) list are presented within their respective HUs in the sections below. Within each HU, HPWQPs and potential sources of pollutants are presented by HA. Most monitoring programs evaluated in the assessment are conducted jointly by the San Diego County Copermittees in accordance with the Receiving Waters and Urban Runoff Monitoring and Reporting Program of the Municipal Permit (Regional Monitoring Program). **Figure 2-1** provides the monitoring locations for the San Diego Bay WMA. The Regional Monitoring Program has a rotational approach for conducting monitoring, and in FY 2012 the southern portion of the County, including the San Diego Bay WMA, was monitored during the 2011-2012 monitoring season (monitoring is conducted year round; wet weather monitoring was conducted from September 15, 2011 to April 30, 2012). Chollas Creek is monitored on an annual basis regardless of the rotation schedule to meet the requirements of the Chollas Creek Diazinon TMDL. Additional water quality monitoring and source identification studies conducted by San Diego Bay WMA Copermittees are also presented in this section. Activity summary sheets describing additional monitoring programs noted in the HU discussions can be found in **Appendix C** of this WURMP Annual Report.

Figure 2-1: Location of MLS, TWAS, and HAS – San Diego Bay WMA



2.2.1 PUEBLO HYDROLOGIC UNIT ASSESSMENT

This section provides an assessment of the water quality information for the Pueblo Hydrologic Unit and is presented by HA.

2.2.1.1 Pueblo Hydrologic Unit Characteristics

The Pueblo San Diego HU (908) is the smallest of the three San Diego Bay HUs, and is comprised of the Point Loma (908.1), San Diego Mesa (908.2), and National City (908.3) HAs. Chollas Creek, Switzer Creek, Paleta Creek, and the San Diego Bay are the major waterbodies found within the Pueblo San Diego HU.

Table 2-2 presents the 2010 SWRCB Section 303(d) impaired waterbodies list for the Pueblo San Diego HU and their current TMDL status.

Table 2-2: Pueblo HU 2010 303(d) Impaired Waterbodies List and TMDL Status

Water Body	HSA	Pollutant/Stressor	TMDL Status
Pacific Ocean Shoreline, Bermuda Ave	908.10	Total coliform	Expected completion 2019
San Diego Bay Shoreline, Shelter Island Shoreline Park	908.10	Enterococcus, total coliform, fecal coliform	Approved 2009
San Diego Bay Shoreline, America's Cup Harbor	908.10	Copper	Expected completion 2019
San Diego Bay Shoreline, Harbor Island West Basin	908.10	Copper	Expected completion 2019
San Diego Bay Shoreline, near sub base	908.10	Sediment toxicity	Expected completion 2019
		Benthic effects and toxicity	Not applicable*
San Diego Bay, Shelter Island Yacht Basin	908.10	Dissolved copper	Approved 2005
San Diego Bay Shoreline, G Street Pier	908.21	Total coliform	Expected completion 2019
San Diego Bay Shoreline, Harbor Island East Basin	908.21	Copper	Expected completion 2019
San Diego Bay Shoreline, Switzer Creek	908.21	Chlordane and PAHs	Expected completion 2019
San Diego Bay Shoreline, B Street and Broadway Piers	908.21	Total coliform, benthic community effects, sediment toxicity	Expected completion 2019
San Diego Bay Shoreline, Downtown Anchorage	908.21	Benthic community effects and sediment toxicity	Expected completion 2019
San Diego Bay Shoreline, at Marriott Marina	908.21	Copper	Expected completion 2019
San Diego Bay Shoreline, Spanish Landing	908.21	Total coliform	Expected completion 2021
Chollas Creek	908.22	Copper, lead, zinc	Approved 10/2008
		Diazinon	Approved 9/2003
		Indicator bacteria	Approved 4/2011
		Phosphorus and nitrogen	Expected completion 2019
		Trash	Expected completion 2021
San Diego Bay Shoreline, near Chollas Creek	908.22	Benthic community effects and sediment toxicity	Expected completion 2010 ¹
San Diego Bay Shoreline, 32 nd Street Naval Station	908.22	Benthic community effects and sediment toxicity	Expected completion 2019

Table 2-2: Pueblo HU 2010 303(d) Impaired Waterbodies List and TMDL Status

Water Body	HSA	Pollutant/Stressor	TMDL Status
San Diego Bay Shoreline, between Sampson Street and 28 th Street	908.22	Mercury, PAHs, PCBs, and zinc	Expected completion 2013
		Copper	Expected completion 2015
San Diego Bay Shoreline, Near Coronado Bridge	908.22	Benthic community effects and sediment toxicity	Expected completion 2019
Switzer Creek	908.22	Copper, lead, zinc	Expected completion 2021 ¹
Paleta Creek	908.31	Copper and lead	Expected completion 2021 ¹
San Diego Bay Shoreline, Seventh Street Channel	908.31	Benthic community effects and sediment toxicity	Expected completion 2008 ¹
San Diego Bay Shoreline, north of 24 th Street Marine Terminal	908.32	Benthic community effects and sediment toxicity	Expected completion 2019
Paradise Creek	908.32	Selenium	Expected completion 2021

Source: SWRCB, 2010.

HU – Hydrologic Unit

PAH - polycyclic aromatic hydrocarbon

PCB - polychlorinated biphenyl

TMDL - total maximum daily load

*The TMDL cannot be completed for benthic community effects alone. Source: SWRCB, 2010.

¹Due date published on 2010 303(d) list; TMDLs are in development.

2.2.1.2 Pueblo Hydrologic Unit Monitoring Activities

Table 2-3 provides a summary of monitoring activities conducted in the Pueblo HU during FY 2012.

Table 2-3: FY 2012 Monitoring Activities in Pueblo HU

Program Data Set	Data Assessed	Number of Sites Assessed
Receiving Water Monitoring		9
Ambient Monitoring	Water chemistry, toxicity, bacteria, and trash	1-MLS
SMC Regional Monitoring	Water chemistry, toxicity, bacteria, rapid stream bioassessment	0
Wet Weather Monitoring	Water chemistry, bacteria, toxicity, and trash	1-MLS
Post-Storm Sediment Pyrethroid Monitoring	Grain size, synthetic pyrethroid pesticides, and TOC	1-MLS
Third-Party Data (Coastkeeper and Chollas TMDL)	General chemistry and bacteria	2 -Coastkeeper
Chollas Creek TMDL Compliance Monitoring (SDB-018)	Metals, pesticides, bacteria	2-MLS
Chollas Creek TMDL Special Studies (Appendix H)	Metals, pesticides, bacteria	4
Urban Runoff Monitoring		328
Jurisdictional Dry Weather Monitoring	Field and analytical chemistry	116
Jurisdictional Dry Weather Monitoring - Trash	Trash	193
MS4 Outfall Random Dry Weather Monitoring	Chemistry and bacteria	0
MS4 Outfall Random Wet Weather Monitoring	Chemistry and bacteria	2
MS4 Outfall Targeted Dry Monitoring	Chemistry, metals, pesticides, and bacteria	7
MS4 Outfall Targeted Wet Monitoring	Chemistry, metals, pesticides, and bacteria	0
Regional Source Identification Monitoring	General chemistry, metals, bacteria, and pesticides	0
CSDM Program	Coastal outfall and receiving waters	9
Shelter Island Yacht Basin Urban Runoff Monitoring Study (SDB-053)	Metals	1

CSDM - Coastal Storm Drain Monitoring
 MLS - mass loading station
 MS4 - municipal separate storm sewer systems
 HU – Hydrologic Unit
 SMC - Stormwater Monitoring Coalition
 TOC - total organic carbon
 TMDL – Total Maximum Daily Load

2.2.1.3 Pueblo Hydrologic Unit Integrated Assessment

Tables 2-4 and 2-5 present integrated assessments of the ambient and wet weather conditions monitoring results for the areas tributary to each mass loading station. The comparison of receiving water and urban runoff results helps to understand the potential influence of urban runoff to water quality problems within receiving waters. Priority constituents which overlap between receiving waters and urban runoff are identified. It is important to note that the MLS and TWAS data was collected within the Chollas Creek HSA (908.22), and is therefore not representative of the entire HU.

Table 2-4 FY 2012 Summary of Drainage Area Assessment Findings in Pueblo HU (Chollas Creek)

CC-SD8(1) MLS Chollas Creek just east of I-15 and Steel ST, and Chollas Pkwy N.		
System Assessed	FY 2012 Dry Weather Priority Constituents ¹	FY 2012 Wet Weather Priority Constituents ¹
Receiving Water Monitoring	Not Applicable – no measurable flow for sample	<u>NPDES Program</u> <ul style="list-style-type: none"> • Chemistry – COD, TSS, Turbidity, Bifenthrin, Permethrin • BOD (Med), Dissolved Copper (Med) • Toxicity – <i>H. azteca</i> acute (Med) • Biology – Very Poor IBI² • Bacteria – Fecal Coliform • Nutrients – No priority constituents identified • TDS – Not Applicable <u>Synthetic Pyrethroids in Sediment*</u> <ul style="list-style-type: none"> • No priority constituents identified
Urban Runoff Monitoring	Not Applicable – no measurable flow for sample	<u>MS4 Program</u> <ul style="list-style-type: none"> • No samples collected upstream of CC-SD8(1) MLS
Trends ⁵		
Increasing ^{3,4}	Fecal Coliform, Total Coliform, Nitrite as N, Total Kjeldahl Nitrogen, Turbidity, Total Copper, Total Zinc	
Decreasing ⁴	<i>H. azteca</i> acute toxicity	

Note: All results included in this table reflect data collected above the receiving water station.

Priority constituents that are common to both the MS4 outfall monitoring and receiving water results are shown in blue.

¹ Priority constituents are determined using the WMA Assessment Methodology (SDCRC, 2010a). High-priority and medium-priority constituents are defined for each monitoring program. When no priority constituents were identified for a constituent group, “no priority constituents identified” was stated to allow clear and consistent comparisons between assessment tables. In the case of toxicity, “no observed toxicity” was stated.

² One Index of Biotic Integrity (IBI) bioassessment sample is collected each year during ambient (dry) conditions and is used for both the dry and wet assessment.

³ Nitrite as N concentrations have consistently been below the water quality benchmark (WQB) for this site.

⁴ Fecal coliform, turbidity, and *H. azteca* have consistently not met the WQB at this site.

*One sample used in analysis.

BOD – biochemical demand
 COD – chemical oxygen demand
 Med - medium-priority constituent
 TDS - total dissolved solids
 NPDES - National Pollutant Discharge Elimination System

MLS - mass loading station
 MS4 - municipal separate storm sewer system
 TSS - total suspended solids
 WQB – Water Quality Benchmark
 IBI – Index of Biotic Integrity

Table 2-5: FY 2012 Summary of Drainage Area Assessment Findings in Pueblo HU (Chollas Creek)

CC-NF54 MLS Chollas Creek southwest of 54 th St and Chollas Pkwy		
System Assessed	FY 2012 Dry Weather Priority Constituents ¹	FY 2012 Wet Weather Priority Constituents ¹
Receiving Water Monitoring	<p><u>NPDES Program</u></p> <ul style="list-style-type: none"> • Chemistry – No priority constituents identified • Toxicity – <i>C. dubia</i> reproduction (Med) • Biology – Very Poor IBI* • Bacteria – <i>Enterococcus</i> • Nutrients – Total Nitrogen (Med), Total Phosphorous (Med) • TDS – Not applicable due to no defined standard <p><u>SMC Program</u></p> <ul style="list-style-type: none"> • No samples collected upstream of CC-NF54 MLS <p><u>Third-Party Data</u></p> <ul style="list-style-type: none"> • No samples collected upstream of CC-NF54 MLS 	Not Applicable – Due to no measurable dry weather flows at site CC-SD8 (1) this site was selected as a replacement site. Only dry weather monitoring was conducted.
Urban Runoff Monitoring	<p><u>MS4 Program</u></p> <ul style="list-style-type: none"> • Chemistry – No priority constituents identified • Bacteria – <i>Enterococcus</i> • Nutrients – No data • TDS – No data 	Not Applicable - - Due to no measurable dry weather flows at site CC-SD8 (1) this site was selected as a replacement site. Only dry weather monitoring was conducted.

Trends

Not Applicable at this time

Note: All results included in this table reflect data collected above the receiving water station. Priority constituents that are common to both the MS4 outfall monitoring and receiving water results are shown in blue.

¹ Priority constituents are determined using the WMA Assessment Methodology (SDCRC, 2010a). High-priority and medium-priority constituents are defined for each monitoring program. When no priority constituents were identified for a constituent group, “no priority constituents identified” was stated to allow clear and consistent comparisons between assessment tables. In the case of toxicity, “no observed toxicity” was stated.

² One Index of Biotic Integrity (IBI) bioassessment sample is collected each year during ambient (dry) conditions and is used for both the dry and wet assessment.

Med - medium-priority constituent	MLS - mass loading station
IBI - Index of Biotic Integrity	MS4 - municipal separate storm sewer system
TDS - total dissolved solids	SMC - Stormwater Monitoring Coalition
NPDES - National Pollutant Discharge Elimination System	WMA – Watershed Management Area
LTEA – Long Term Effectiveness Assessment	HU – Hydrologic Unit

The assessment of data collected in FY 2012 presented above supports the existing HPWQPs within the Pueblo HU. Other identified constituents may be further analyzed and addressed in future years.

2.2.1.4 TMDLs in Pueblo HU

Chollas Creek Dissolved Metals and Diazinon TMDLs Compliance Monitoring:

In accordance with the TMDL (State Board Resolution No. 2008-0054 and Investigation Order No. R9-2004-0277), wet weather water quality monitoring was conducted at the mass loading stations (MLSS) SD8(1) in the north fork of Chollas Creek and at DPR3 in the south fork of Chollas Creek during three wet weather events. Compliance with the TMDLs was determined by wet weather water quality monitoring at these two locations. Samples were analyzed for the

compliance constituents dissolved metals, toxicity, and Diazinon along with additional constituents selected by the Dischargers. Additional constituents include general chemistry, total metals, indicator bacteria, chlorinated pesticides, organophosphorus pesticides, polynuclear aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), chloride, and sulfate. The data collected for the 2011-2012 compliance monitoring season as presented in the *Final Chollas Creek Total Maximum Daily Load 2011-2012 Water Quality Compliance Monitoring Report* (Compliance Monitoring Report) [Appendix F](#) is summarized below.

- The dissolved copper, lead, and zinc analytical results were compared to the hardness-dependent California Toxics Rule (CTR) based numeric targets set forth in the Chollas Creek Dissolved Metals TMDL. Dissolved copper concentrations at DPR3 were above chronic Water Quality Objectives (WQOs) for the three monitored wet weather events and above acute criteria during Wet Weather Event 2. Results for dissolved lead and zinc were below acute and chronic WQOs. Dissolved copper concentrations at SD8(1) were above chronic WQOs for Wet Weather Event 1 and above acute and chronic WQOs for Wet Weather Event 2. Dissolved copper concentrations at SD8(1) were below acute and chronic WQOs during Wet Weather Event 3.
- For comparison purposes only, site specific objective (SSO) water effect ratios (WERs) for Chollas Creek were used to calculate separate metals criteria. The dissolved metals WQOs for both sites were higher than the WQOs developed using the default WER of 1. When compared to WQOs developed using site specific WERs, all dissolved copper concentrations were below acute and chronic WQOs.
- Diazinon was not detected in any of the samples collected from DPR3 and SD8(1) during the three monitored wet weather events.
- Malathion and methyl parathion were the only organophosphorus pesticides detected above the reporting limit (RL). Malathion concentrations during Wet Weather Event 3 at SD8(1) exceeded the CDFG acute criteria of 0.43 micrograms per liter ($\mu\text{g/L}$).
- Enterococcus, fecal coliform and total coliform counts from grab samples collected at DPR3 and SD8(1) were above indicator bacteria criteria.
- Low concentrations of PAHs were detected in the composite samples collected from both SD8(1) and DPR3. The majority of the results for all three wet weather monitored events were below RLs.
- PCB concentrations were not detected above the RL at both MLSs for all monitored wet weather events.
- Chlorinated pesticide concentrations were not detected with the exception of DDT(p,p') at SD8(1) for Wet Weather Event 1. The pesticide DDT was banned by the USEPA in 1972 due to adverse environmental and human health effects. DDT is known to be persistent in the environment and can take many years to break-down (USEPA, 2012a). Without a source identification study, potential sources could include legacy storage from a Chollas Creek watershed resident or sources outside the United States.
- No acute or chronic toxicity was observed in any of the DPR3 or SD8(1) wet weather water quality samples collected in the 2011-2012 wet weather season.

Based on the TMDL compliance monitoring results from the 2011–2012 monitoring season, the following program modifications are recommended in the Compliance Monitoring Report ([Appendix F](#)):

- Continue to evaluate compliance with the Diazinon and Dissolved Metals TMDLs and assess long term trends in monitoring data.
- Continue to incorporate an alternative assessment of compliance with the TMDL waste load allocations (WLAs) using the site specific objective (SSO) water-effect ratios (WERs) identified in the Chollas Creek Copper, Lead and Zinc Water Effect Ratio Study (Weston 2011).
- Use the data gathered as part of this monitoring program to enhance monitoring for the Bacteria TMDL.
- Include additional constituents as part of the compliance monitoring program as deemed appropriate by the Dischargers.

Dissolved copper trends throughout the compliance monitoring seasons have generally exceeded both acute and chronic WQOs using the default Water Effects Ratio (WER) of 1. However, based on Site Specific Objectives WERs dissolved copper concentrations did not exceed the acute and chronic dissolved copper WQOs. It should be noted that the WER, because it incorporates site-specific data, improves the Dissolved Metals TMDL by providing a more accurate calculation of the levels of dissolved metals that Chollas Creek is able to assimilate before beneficial uses would be impaired. The City of San Diego submitted the WER to the Regional Board in June 2011 and November 2011, but to date the WER has not been reviewed by the Regional Board. The Chollas Creek Dischargers plan to meet with the Regional Board to discuss the WER during the upcoming fiscal year, as they believe the WER is a valuable tool in calculating compliance. However, at this time, the Chollas Creek Dischargers are compliant with the Dissolved Metals TMDL's WLA requirements. These WLAs will also be met using the Site Specific Objectives as identified in the WER Study, which is pending Regional Board review and approval.

Shelter Island Yacht Basin Dissolved Copper TMDL:

The Port of San Diego and the City of San Diego conducted compliance water quality monitoring during this reporting period. The Port of San Diego conducted water quality sampling to determine dissolved copper concentrations within the basin, test for acute and chronic toxicity, and assess water quality trends over time within SIYB. Monitoring was completed at six stations within SIYB and one reference station in the main channel of San Diego Bay adjacent to SIYB. The SIYB Dissolved Copper Total Maximum Daily Load 2012 Monitoring and Progress Final Report ([Appendix G](#)) provides further detail on the compliance monitoring results. Key findings include:

- Dissolved copper concentrations at all stations exceeded the numeric water quality objective (WQO) of 3.1 µg/L; however, there was very little evidence of toxicity (i.e., only one station exhibited during the October 2011 survey showed evidence of chronic toxicity to mussel larvae);
- While not shown to be statistically significant, monitoring showed that there has been an approximately 15% reduction in the average dissolved copper concentration measured in 2011 surveys (7.01 µg/L) from the baseline average dissolved copper concentration (8.28 µg/L) as described in the SIYB TMDL Monitoring Plan.

The City of San Diego collected water quality and hydrologic data to verify that the copper loading from its MS4 is within the TMDL waste load allocation. The City's Final Shelter Island

Dissolved Copper Total Maximum Daily Load 2011-2012 Compliance Monitoring Report (SIYB Compliance Monitoring Report) ([Appendix G](#)) summarizes the water quality and hydrologic data collected from wet weather and dry weather monitoring during the 2011-2012 season (6/1/2011-5/3/2012) and presents data analysis methodologies and results. The report also summarizes comparisons between the result from the 2011-2012 season and results from the previous seasons. A brief summary of the City of San Diego’s MS4 monitoring is presented below:

- The average dissolved copper event mean concentration (EMC) for wet weather for Outfall 2 is 17.08 micrograms per liter (µg/L), which is lower than those from the 2008-2009 season and 2010-2011 season, but slightly higher than that from the 2009-2010 season.
- The average dissolved copper EMC for dry weather for Outfall 2 is 3.64 µg/L, which is lower than those from the 2009-2010 season and 2010-2011 season. It appears there is a downward trend based on the data sets collected from the past three seasons
- The total annual dissolved copper load from the City’s MS4 (consisting primarily of three outfalls) into the SIYB is 2.058 kilograms (kg), which is well below the WLA of 30 kg/yr as identified in the TMDL. This result is comparable to the reported results for the 2008-2009 season and 2009-2010 season; however, is much lower than the reported result for the 2010-2011 season.
- Of the total annual dissolved copper load from the MS4, wet weather runoff contributes approximately 89% while dry weather runoff contributes only 11%.
- Of the total annual dissolved copper load from the MS4, runoff from Outfall 2 contributes approximately 75%, Outfall 3 contributes approximately 20%, and Outfall 1 only contributes 5%.

2.2.2 SWEETWATER HYDROLOGIC UNIT ASSESSMENT

This section provides an assessment of the water quality information for the Sweetwater Hydrologic Unit and is presented by HA.

2.2.2.1 Sweetwater Hydrologic Unit Characteristics

The Sweetwater HU (909) is the largest of the three HUs within the San Diego Bay WMA. This HU is comprised of the Lower Sweetwater (909.1), Middle Sweetwater (909.2), and Upper Sweetwater (909.3) HAs. The Sweetwater River, Sweetwater Reservoir, Loveland Reservoir, and San Diego Bay are the major waterbodies found within Sweetwater HU.

Table 2-6 presents the 2010 SWRCB Section 303(d) impaired waterbodies list for the Sweetwater HU and their current TMDL status.

Table 2-6: Sweetwater HU 2010 303(d) Impaired Waterbodies List and TMDL Status

Water Body	HSA	Pollutant/Stressor	TMDL Status
San Diego Bay Shoreline, at Bayside Park (J Street)	909.11	Total coliform	Expected completion 2019
		Enterococcus	Expected completion 2021
Telegraph Canyon Creek	909.11	Selenium	Expected completion 2021
San Diego Bay Shoreline, Chula Vista Marina	909.12	Copper	Expected completion 2019

Table 2-6: Sweetwater HU 2010 303(d) Impaired Waterbodies List and TMDL Status

Water Body	HSA	Pollutant/Stressor	TMDL Status
Lower Sweetwater River, below Sweetwater Reservoir	909.12	Enterococcus, fecal coliform, phosphorus, selenium, TDS, nitrogen, toxicity	Expected completion 2021
Sweetwater Reservoir	909.21	DO	Expected completion 2019
Loveland Reservoir	909.31	Aluminum, manganese, DO, pH	Expected completion 2019

Source: SWRCB, 2010.

TMDL - total maximum daily load.

HU – Hydrologic Unit

HSA – hydrologic subarea

TDS – total dissolved solids

DO – dissolved oxygen

2.2.2.2 Sweetwater Hydrologic Unit Monitoring Activities

Table 2-7 provides a summary of monitoring activities conducted in the Sweetwater HU during FY 2012.

Table 2-7: FY 2012 Monitoring Activities in Sweetwater HU

Program Data Set	Data Assessed	Number of Sites Assessed
Receiving Water Monitoring		14
Ambient Monitoring	Water chemistry, toxicity, bacteria, rapid stream bioassessment, and trash	1-MLS, 1-TWAS
SMC Regional Monitoring Participation	Benthic macroinvertebrates, periphyton, and physical habitat	5-SMC*
Wet Weather Monitoring	Water chemistry, bacteria, toxicity, and trash	1-MLS, 1-TWAS
Post-Storm Sediment Pyrethroid Monitoring	Grain size, synthetic pyrethroid pesticides, and TOC	1-MLS, 1-TWAS
Third-Party Data (Coastkeeper)	General chemistry and bacteria	3-Coastkeeper
Urban Runoff Monitoring		167
Jurisdictional Dry Weather Monitoring	Field and analytical chemistry	68
Jurisdictional Dry Weather Monitoring – Trash Assessment	Trash	76
MS4 Outfall Random Dry Weather Monitoring	Chemistry and bacteria	5
MS4 Outfall Random Wet Weather Monitoring	Chemistry and bacteria	2
MS4 Outfall Targeted Dry Monitoring	Chemistry, metals, pesticides, and bacteria	15
MS4 Outfall Targeted Wet Monitoring	Chemistry, metals, pesticides, and bacteria	0
CSDM Program	Coastal outfall and receiving waters	1

SMC - Stormwater Monitoring Coalition

TOC - total organic carbon

MS4 - municipal separate storm sewer systems

MLS – Mass Loading Station

TWAS – Temporary Watershed Assessment Station

CSDM - Coastal Storm Drain Monitoring

* The SMC Monitoring Program uses a random stratified program design and is one sample from a 425 sample point program to be collected over 5 years (<http://socalsmc.org/ProjectThree.aspx>).

2.2.2.3 Sweetwater Hydrologic Unit Integrated Assessments

Tables 2-8 and 2-9 present integrated assessments of the ambient and wet weather conditions monitoring results for the areas tributary to each mass loading station. The integrated assessments also identify which priority constituents overlap between receiving waters and

urban runoff. The comparison of receiving water and urban runoff results helps to understand the potential influence of urban runoff to water quality problems within receiving waters. Priority constituents which overlap between receiving waters and urban runoff are identified.

Table 2-8: FY 2012 Summary of Drainage Area Assessment Findings in Sweetwater River MLS

Sweetwater River MLS		
Sweetwater River at Plaza Bonita Rd and Sweetwater County Park		
System Assessed	FY 2012 Dry Weather Priority Constituents ¹	FY 2012 Wet Weather Priority Constituents ¹
Receiving Water Monitoring	<p><u>NPDES Program</u></p> <ul style="list-style-type: none"> Chemistry – No priority constituents identified Toxicity – <i>C. dubia</i> reproduction, <i>S. capricornutum</i> growth Biology – Very Poor IBI² Bacteria – <i>Enterococcus</i> (Med) Nutrients – Total Phosphorous, Dissolved Phosphorous (Med) TDS - TDS <p><u>SMC Program (one sample, SMC19228)*</u></p> <ul style="list-style-type: none"> Chemistry – Chloride Toxicity – <i>C.dubia</i> acute survival, <i>C. dubia</i> chronic survival, <i>C. dubia</i> reproduction (Med) Biology – Poor IBI Bacteria – Not analyzed Nutrients – Total Nitrogen, Total Phosphorus TDS – TDS <p><u>Third-Party Data – (Coastkeeper)³</u> The following constituents did not meet Basin Plan benchmarks:</p> <ul style="list-style-type: none"> Chemistry – Dissolved Oxygen Bacteria – <i>Enterococcus</i> 	<p><u>NPDES Program</u></p> <ul style="list-style-type: none"> Chemistry – No priority constituents identified Toxicity – <i>S. capricornutum</i> growth, <i>C. dubia</i> reproduction (Med) Biology – Very Poor IBI² Bacteria – Fecal Coliform (Med) Nutrients – No priority constituents identified TDS – TDS <p><u>Synthetic Pyrethroids in Sediment*</u></p> <ul style="list-style-type: none"> No priority constituents identified
	Urban Runoff Monitoring	<p><u>MS4 Program</u></p> <ul style="list-style-type: none"> Chemistry – No priority constituents identified Bacteria – <i>Enterococcus</i> Nutrients – Total Nitrogen, Total Phosphorus TDS – TDS
Trends		
Increasing	-	
Decreasing	Total Lead	

Note: All results included in this table reflect data collected above the receiving water station and below the Sweetwater Reservoir.

Priority constituents that are common to both the MS4 outfall monitoring and receiving water results are shown in blue.

¹ Priority constituents are determined using the WMA Assessment Methodology (SDCRC, 2010a). High-priority and medium-priority constituents are defined for each monitoring program. When no priority constituents were identified for a constituent group, “no priority constituents identified” was stated to allow clear and consistent comparisons between assessment tables. In the case of toxicity, “no observed toxicity” was stated.

² One Index of Biotic Integrity (IBI) bioassessment sample is collected each year during ambient (dry) conditions and is used for both the dry and wet assessment.

³ For third-party data, underlined constituents did not meet the Basin Plan water quality benchmark (WQB) for >50% of samples. Constituents that are not underlined did not meet the WQB for >25% to 50% of samples. Constituent list for third-party data is provided in Appendix M of the FY 2012 Regional Annual Monitoring Report. Indicator bacteria analyzed include *E. coli*, *Enterococcus*, total coliform.

*One sample used in analysis

Med - medium-priority constituent

IBI - Index of Biotic Integrity

TDS - total dissolved solids

NPDES - National Pollutant Discharge Elimination System

MLS - mass loading station

MS4 - municipal separate storm sewer system

SMC - Stormwater Monitoring Coalition

DO - dissolved oxygen

Table 2-9 FY 2012 Summary of Drainage Area Assessment Findings in Sweetwater River TWAS-1

Sweetwater River TWAS-1 Sweetwater River at Campo Rd (CA-94), west of Steel Canyon County Park		
System Assessed	FY 2012 Dry Weather Priority Constituents ¹	FY 2012 Wet Weather Priority Constituents ¹
Receiving Water Monitoring	<p><u>NPDES Program</u></p> <ul style="list-style-type: none"> • Chemistry – No priority constituents identified • Toxicity – <i>S. capricornutum</i> growth • Biology – Very Poor IBI² • Bacteria – <i>Enterococcus</i> (Med) • Nutrients – Total Phosphorus • TDS – TDS <p><u>SMC Program</u></p> <ul style="list-style-type: none"> • No samples collected upstream of SR-TWAS-1 <p><u>Third-Party Data – (Coastkeeper)</u></p> <ul style="list-style-type: none"> • No priority constituents identified 	<p><u>NPDES Program</u></p> <ul style="list-style-type: none"> • Chemistry – TSS (Med), Turbidity (Med) • Toxicity – No toxicity observed • Biology – Very Poor IBI² • Bacteria – Fecal Coliform (Med) • Nutrients – No priority constituents identified • TDS – TDS (Med) <p><u>Synthetic Pyrethroids in Sediment*</u></p> <ul style="list-style-type: none"> • No priority constituents identified
Urban Runoff Monitoring	<p><u>MS4 Program</u></p> <ul style="list-style-type: none"> • Chemistry – No priority constituents identified • Bacteria – Fecal Coliform (Med), <i>Enterococcus</i> (Med) • Nutrients – Total Nitrogen, Dissolved Phosphorus*, Total Phosphorus (Med) • TDS – TDS 	<p><u>MS4 Program</u></p> <ul style="list-style-type: none"> • No samples collected upstream of SR-TWAS-1

Note: All results included in this table reflect data collected above the receiving water station. Priority constituents that are common to both the MS4 outfall monitoring and receiving water results are shown in blue.

¹ Priority constituents are determined using the WMA Assessment Methodology (SDCRC, 2010a). High-priority and medium-priority constituents are defined for each monitoring program. When no priority constituents were identified for a constituent group, “no priority constituents identified” was stated to allow clear and consistent comparisons between assessment tables. In the case of toxicity, “no observed toxicity” was stated.

² One Index of Biotic Integrity (IBI) bioassessment sample is collected each year during ambient (dry) conditions and is used for both the dry and wet assessment.

*One sample used in analysis.

Med - medium-priority constituent	TWAS - temporary watershed assessment station
TDS - total dissolved solids	MS4 - municipal separate storm sewer system
NPDES - National Pollutant Discharge Elimination System	SMC - Stormwater Monitoring Coalition
LTEA – Long Term Effectiveness Assessment	IBI – Index of Biotic Integrity

Past monitoring data along with the Long-Term Effectiveness Assessment (MOE, LWA, Weston, June 2011) support the existing HPWQPs within the Sweetwater HU. Other identified constituents may be further analyzed and addressed in future years.

2.2.3 OTAY HYDROLOGIC UNIT ASSESSMENT

The Otay HU (910) is comprised of the Coronado (910.1), Otay Valley (910.2), and (910.3) Dulzura HAS. Upper and Lower Otay Reservoirs, Otay River, and San Diego Bay are the major waterbodies found within the Otay HU, whereas the principal aquifer in the watershed is the San Diego Formation.

Table 2-10 presents the 2010 SWRCB Section 303(d) impaired waterbodies list for the Otay HU and their current TMDL status.

Table 2-10: Otay HU 2010 303(d) Impaired Waterbodies List and TMDL Status

Water Body	HSA	Pollutant/Stressor	TMDL Status
Pacific Ocean Shoreline, Silver Strand	910.10	Enterococcus	Expected completion 2019
Pacific Ocean Shoreline, Imperial Beach Pier	910.10	Total coliform, fecal coliform, PCBs	Expected completion 2019
Pacific Ocean Shoreline, Carnation Ave and Camp Surf Jetty	910.10	Total coliform	Expected completion 2019
San Diego Bay	910.10	PCBs	Expected completion 2019
San Diego Bay Shoreline, Tidelands Park	910.10	Total coliform	Expected completion 2019
		Enterococcus	Expected completion 2021
San Diego Bay Shoreline, at Coronado Cays	910.10	Copper	Expected completion 2019
San Diego Bay Shoreline, at Glorietta Bay	910.10	Copper	Expected completion 2019
Poggi Canyon Creek	910.20	Toxicity	Expected completion 2021
Lower Otay Reservoir	910.31	Ammonia, color, iron, manganese, pH (high)	Expected completion 2019
		Nitrogen	Expected completion 2021
Jamul Creek	910.33	Toxicity	Expected completion 2019

Source: SWRCB, 2010.

HSA – hydrologic subarea

PCB - polychlorinated biphenyl

TMDL - total maximum daily load

2.2.3.1 Otay Hydrologic Unit Monitoring Activities

Table 2-11 provides a summary of monitoring activities conducted in the Otay HU during FY 2012.

Table 2-11: FY 2012 Monitoring Activities in Otay HU

Program Data Set	Data Assessed	Number of Sites Assessed
Receiving Water Monitoring		5
Ambient Monitoring	Water chemistry, toxicity, bacteria, trash	1-TWAS
SMC Regional Monitoring	Water chemistry, toxicity, bacteria, rapid stream bioassessment	0
Wet Weather Monitoring	Water chemistry, bacteria, toxicity, trash	1-TWAS
Post-Storm Sediment Pyrethroid Monitoring	Grain size, synthetic pyrethroid pesticides, and TOC	1-TWAS
Third-Party Data (Coastkeeper)	General chemistry and bacteria	2-Coastkeeper
Urban Runoff Monitoring		137
Jurisdictional Dry Weather Monitoring	Field and analytical chemistry	47
Jurisdictional Dry Weather Monitoring – Trash Assessment	Trash	79
MS4 Outfall Random Dry Weather Monitoring	Chemistry and bacteria	1
MS4 Outfall Random Wet Weather Monitoring	Chemistry and bacteria	2
MS4 Outfall Targeted Dry Monitoring	Chemistry, metals, pesticides, and bacteria	7
MS4 Outfall Targeted Wet Monitoring	Chemistry, metals, pesticides, and bacteria	0
CSDM Program	Coastal outfall and receiving waters	1

SMC - Stormwater Monitoring Coalition

TOC - total organic carbon

TWAS – Temporary Watershed Assessment Station

MS4 - municipal separate storm sewer systems

CSDM - Coastal Storm Drain Monitoring

2.2.3.2 Otay Hydrologic Unit Integrated Assessments

Table 2-12 presents an integrated assessment of the ambient and wet weather conditions monitoring results for the areas tributary to each mass loading station. The integrated assessments also identify which priority constituents overlap between receiving waters and urban runoff.

Table 2-12: FY 2012 Summary of Drainage Area Assessment Findings in Otay River TWAS-1

Otay River TWAS-1 Otay River at Beyer Blvd, less than one mile east of I-5		
System Assessed	FY 2012 Dry Weather Priority Constituents ¹	FY 2012 Wet Weather Priority Constituents ¹
Receiving Water Monitoring	<p><u>NPDES Program</u></p> <ul style="list-style-type: none"> • Chemistry – No priority constituents identified • Toxicity – <i>C. dubia</i> reproduction (Med) • Biology – Very Poor IBI² • Bacteria – <i>Enterococcus</i> (Med) • Nutrients – Dissolved Phosphorous, Total Phosphorous, Total Nitrogen (Med) • TDS – TDS <p><u>SMC Program</u></p> <ul style="list-style-type: none"> • No samples collected upstream of OR-TWAS-1 <p><u>Third-Party Data – (Coastkeeper)³</u> The following constituents did not meet Basin Plan benchmarks:</p> <ul style="list-style-type: none"> • Bacteria – <i>Enterococcus</i>, <i>E-coli</i> 	<p><u>NPDES Program</u></p> <ul style="list-style-type: none"> • Chemistry – MBAS (Med), Turbidity (Med), Malathion (Med), Bifenthrin (Med), Permethrin (Med) • Toxicity – <i>C. dubia</i> acute survival (Med), <i>C. dubia</i> chronic survival (Med), <i>C. dubia</i> reproduction (Med), <i>H. azteca</i> acute (Med), <i>S. capricornutum</i> growth (Med) • Biology – Very Poor IBI² • Bacteria – Fecal Coliform (Med) • Nutrients – No priority constituents identified • TDS – TDS (Med) <p><u>Synthetic Pyrethroids in Sediment*</u> Bifenthrin</p>
Urban Runoff Monitoring	<p><u>MS4 Program</u></p> <ul style="list-style-type: none"> • Chemistry – TSS* • Bacteria – <i>Enterococcus</i> • Nutrients – Total Nitrogen* • TDS – No priority constituents identified 	<p><u>MS4 Program</u></p> <ul style="list-style-type: none"> • Chemistry – No priority constituents identified • Bacteria – No priority constituents identified • Nutrients – No priority constituents identified • TDS – No priority constituents identified

Note: All results included in this table reflect data collected above the receiving water station and below Upper and Lower Otay Reservoirs.

Priority constituents that are common to both the MS4 outfall monitoring and receiving water results are shown in blue.

¹ Priority constituents are determined using the WMA Assessment Methodology (SDCRC, 2010a). High-priority and medium-priority constituents are defined for each monitoring program. When no priority constituents were identified for a constituent group, “no priority constituents identified” was stated to allow clear and consistent comparisons between assessment tables. In the case of toxicity “no observed toxicity” was stated.

² One Index of Biotic Integrity (IBI) bioassessment sample is collected each year during ambient (dry) conditions and is used for both the dry and wet assessment.

³ For third-party data, underlined constituents did not meet the Basin Plan water quality benchmark (WQB) for >50% of samples. Constituents that are not underlined did not meet the WQB for >25% to 50% of samples. Constituent list for third-party data is provided in Appendix M of the FY 2012 Regional Annual Monitoring Report. Indicator bacteria analyzed include *E. coli*, *Enterococcus*, total coliform.

*One sample used in analysis.

Med - medium-priority constituent	TWAS - temporary watershed assessment station
TDS - total dissolved solids	MS4 - municipal separate storm sewer system
NPDES - National Pollutant Discharge Elimination System	SMC - Stormwater Monitoring Coalition
TSS – Total Suspended Solids	IBI – Index of Biotic Integrity

Monitoring data along with the 2011 LTEA support the existing HPWQPs within the Otay HU. Other identified constituents may be further analyzed and addressed in future years.

2.2.4 SAN DIEGO BAY SPECIAL STUDIES

Copermittees conducted monitoring as part of special studies in the San Diego Bay WMA in order to address specific questions. The following sections provide information on monitoring conducted during the reporting period.

Chollas Creek TMDL Special Study

As presented in the *Final Chollas Creek Total Maximum Daily Load 2011-2012 Special Studies Report* (Special Studies Report), (**Appendix H**), monitoring was conducted in the upper Chollas Creek Watershed during the 2011-2012 wet weather monitoring season. It should be noted that this study goes above and beyond the TMDL compliance monitoring required by the RWQCB. The monitoring was conducted at the jurisdictional boundary of the City of San Diego and City of La Mesa (LM-1) as well as the jurisdictional boundary of the City of San Diego and the City of Lemon Grove (LG-1). This study was performed as part of the Dissolved Metals and Diazinon TMDL Implementation Plan. The special study was collaboratively designed by the Dischargers involved to fill data gaps regarding priority water problems and potential pollutant sources in the Chollas Creek Watershed.

Samples were analyzed for general chemistry, bacteria, total and dissolved metals, chlorinated pesticides (chlordane) organophosphorus pesticides (Diazinon), polynuclear aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs) and toxicity during two wet weather events. Analytical results were compared to applicable water quality criteria set forth in the approved TMDLs for the Chollas Creek Watershed and California Department of Fish and Game (CDFG) pesticide criteria.

The results from the Special Studies Report are presented below.

- Dissolved metal concentrations were compared to the acute and chronic water quality objectives (WQOs) set forth in the Chollas Creek Dissolved Metals TMDL. At LG-1 dissolved copper, lead, and zinc concentrations were below acute and chronic WQOs during both wet weather events. At LM-1 dissolved copper concentrations were above acute and chronic WQOs during both wet weather events. Dissolved lead and zinc concentrations at LM-1 were below acute and chronic WQOs.
- For comparison purposes only, site specific objective (SSO) water effect ratios (WERs) for Chollas Creek were used to calculate separate metals criteria. The dissolved metals WQOs for both sites were higher than the WQOs developed using the default WER of 1. When compared to WQOs developed using site specific WERs, all dissolved copper concentrations were below acute and chronic WQOs.
- Diazinon was not detected in samples collected from LG-1 and LM-1.
- Malathion was the only organophosphorus pesticide detected above the reporting limit (RL). During Wet Weather Event 2 Malathion concentrations at LM-1 exceeded the CDFG acute criteria.
- Chlorinated pesticides at LG-1 were not detected above the RL during both wet weather events. DDT(p,p') and alpha-chlordane were detected at LM-1 during Wet Weather Event 1 only at 7 ng/L and 5.6 ng/L, respectively.

- All bacteria grab samples collected exceeded Enterococcus, fecal coliform and total coliform WQOs.
- PAHs were measured below the RL for LG-1 and LM-1. The majority of the results were not detected.
- PCB concentrations at LG-1 and LM-1 for both monitored wet weather events were not measured above the RL.
- There was no acute or chronic toxicity observed in either of the two samples collected from the LG-1 site during the 2011-2012 wet weather monitoring season. There was also no toxicity in the LM-1 site collected during Wet Weather Event 1. However, toxicity was observed in both the acute and chronic test for the LM-1 site from Wet Weather Event 2. A toxicity identification evaluation (TIE) was not performed; therefore, the causative agent could not be identified.

Additionally, the Special Studies Report provided the following recommendations based on the monitoring conducted:

- Continue to monitor jurisdictional boundary sites based on the objectives outlined in the Implementation Plan.
- Continue to incorporate an alternative assessment of compliance with the TMDL waste load allocations (WLAs) using the site specific objective (SSO) water-effect ratio (WERs) for dissolved copper, lead, and zinc.
- Use the data gathered as part of this monitoring program to help implement compliance monitoring for the Bacteria TMDL.
- Include additional constituents as part of the compliance monitoring program as the Dischargers see fit.

2.2.4.1 Regional Harbor Monitoring

The Regional Harbor Monitoring Program (RHMP) conducted two focused special studies during this reporting period. The first involved performing a confirmatory sediment and water toxicity identification evaluations (TIEs) at locations within SIYB and Dana Point Harbor which exhibited substantial chronic toxicity during the RHMP 2008 core monitoring program. The TIEs were proposed to determine the contributions of the major constituent classes to toxicity. The second focused special study was a sediment copper flux study. This study was initiated in 2011-2012. The sediment copper flux study is in progress and the conclusions will be reported during the 2012-2013 reporting period. A description of each special study is presented below and on activity sheet SDB-025.

Toxicity Identification Evaluation:

During this reporting period, a special study was concluded to perform confirmatory sediment and water TIEs at locations which exhibited substantial chronic toxicity during the RHMP 2008 core monitoring program. The TIEs were proposed to determine the contributions of the major constituent classes to toxicity.

The special study began in the previous, 2010-2011 WURMP reporting period. Sediment and receiving water samples were collected from six stations representing marina, industrial, and deep water strata. These strata exhibited toxicity during the 2008 RHMP core monitoring program. Five stations were located in San Diego Bay and one station within Dana Point Harbor.

The findings of the study are currently being reviewed. The initial results include the following:

- TIEs could not be performed in any sample collected because the corresponding screening bioassays indicated that the toxicity measurements in the samples were below the threshold required to run the evaluation.
- In response to the toxicity findings, the objectives of the study were modified to assess the potential differences in chemical and physical conditions of receiving waters and sediment that could help to explain the decrease in toxic conditions from 2008 to 2011.
- Although there was a substantial decrease in toxicity, the concentrations of chemicals of concern in receiving waters and sediment were largely consistent between 2008 and 2011.
- Dissolved copper was the only chemical of concern in receiving waters to exceed regulatory thresholds. Within sediments, copper, arsenic, lead, mercury, zinc, PAHs and PCBs exceeded regulatory thresholds.

Sediment Copper Flux Study:

A sediment copper flux study was initiated in 2011-2012. Work is in progress and the conclusions will be reported during the 2012-2013 WURMP reporting period. This special study will involve laboratory and field studies to assess the potential for copper-laden sediments to serve as a net source or sink for copper into and from the water column depending on the concentration of the copper within the sediment, porewater, and overlying water. The results of this focused special study will be available during the next reporting period.

2.3 POLLUTANT SOURCE ASSESSMENT

This section identifies, to the extent possible, the potential sources, pollutant discharges, and/or other factors causing the San Diego Bay WMA's HPWQPs. The pollutant source assessment is based on currently available data associated with the urban runoff management programs and is presented by HA.

2.3.1 POLLUTANT SOURCE IDENTIFICATION

The San Diego Bay WURMP Document Section 3.3. discusses potential sources of the baseline HPWQPs that may impact water quality throughout the San Diego Bay WMA. Since the development of the WURMP document, the San Diego Bay Watershed Copermittees have conducted additional source identification programs to help refine that information. The San Diego Bay Watershed Copermittees participated in the Regional Source Identification Program noted below during the FY 2012 reporting period. The San Diego Bay Copermittees will continue compiling information from monitoring and source identification studies in order to effectively select and implement source appropriate activities to reduce pollutant discharges.

Regional Source Identification Program

The San Diego Municipal Copermittees developed a Bacteria Source Prioritization Process during the 2011-2012 Monitoring Season. The Copermittees held four workshops that focused on the completion of the following components:

- Develop a conceptual model for bacteria sources, fate, and transport
- Conduct a literature review and discussed methods and applications
- Develop a prioritization process and conducted test runs
- Review test results and made decisions on process and format

The Bacteria Source Prioritization Process document is present in the 2011-2012 Receiving Waters and Urban Runoff Monitoring Report's Appendix R. This report can be found at www.projectcleanwater.org.

2.3.2 POLLUTANT SOURCE ASSESSMENT BY HYDROLOGIC AREA

This section identifies, to the extent possible, the potential sources, pollutant discharges, and/or other factors causing the San Diego Bay WMA's HPWQPs. The pollutant source assessment is based on currently available data associated with the urban runoff management programs. The pollutant source assessment is presented by Hydrologic Area.

Table 2-13 summarizes the land use in each of the Hydrologic Areas. Runoff during wet weather mobilizes and transports pollutants from areas that are collectively associated with particular land uses. This is opposed to the pollutants found in dry weather urban runoff that are generally associated with identifiable dischargers such as residences, commercial facilities, etc. Urban runoff and illegal discharges to the MS4 associated with dry weather are usually the result of specific activities such as over-irrigation, surface washing, spills, etc.

Tables 2-14 through **2-22** represent the inventoried sources that the Copermittees currently track. The highest threat-to-water-quality (TTWQ) rated sources within each HA based on the HPWQPs are identified in each table (yellow highlight). This HPWQP is then associated with the sources that are likely to generate those pollutants. The process used to develop the tables was taken directly from the 2005 BLTEA (Gross Pollutants) and 2011 LTEA (all other HPWQPs). The data used for the process includes the following:

1. Results in the FY 2012 Regional Annual Monitoring Report (Weston Solutions, 2013);
2. FY 2012 JURMP Annual Reports and current inventory information from all watershed Copermittees; and
3. Source Loading Potential (SLP) ratings from the 2005 BLTEA (Gross Pollutants) and 2011 LTEA (all other HPWQPs).

Table 2-13: Land Use Acreage by Hydrologic Area

Land Use	Hydrologic Area (acres)									Land Use Totals (acres)
	Pueblo			Sweetwater			Otay			
	908.1	908.2	908.3	909.1	909.2	909.3	910.1	910.2	910.3	
Agricultural	-	14.8	-	68.6	584.7	2,163.2	-	429.8	759.2	4,020.3
Automotive and Transportation	36.4	1140.5	134.8	166.2	11.5	10.6	6.8	166.1	55.9	1,728.8
Beach, Bay and Lagoon	7.3	34.2	17.9	66.2	-	-	363.5	11.6	-	500.7
Commercial	240.1	1647.9	244.3	1,024.1	227.4	129.7	125.7	750.5	83.5	4,473.2
Health Services	16.4	131.6	27.7	62.4	11.4	10.1	16.4	71.5	-	347.5
Industrial	6	634.6	276.2	413.6	341.1	-	.1	1,778.6	56.9	3,507
Institutional	166.3	1,060.7	328.3	1,242.4	565.8	15.1	47.8	1,906.7	73.2	5,406.3
Junkyard, Dump, Landfill	-	14.3	-	-	77.3	-	-	785.3	-	876.9
Lake, Reservoir, Large Pond	3.4	14	-	54.6	946.7	427.9	8.3	-	1,040.5	2,495.4
Military	602.8	542.2	400.4	-	-	-	2,837.4	-	-	4,382.8
Mixed Use	-	4.6	1.7	.7	-	-	-	-	-	7
Mobile Home Park	-	121.2	4.6	228.5	139.5	99.8	2.1	383.2	-	978.9
Multi-Family Residential	84.8	1,644.2	305.9	1,033.2	277.9	117.1	121.3	765	14	4,363.4
Municipal	24.9	248.7	22.5	113.8	25.8	2.9	8.9	45.7	14.1	507.3
Open Space	207.2	1,534.7	207.3	4,842.3	14,233.6	19,533.2	77.6	9,903.3	37,127.3	87,666.5
Parks, Golf Courses, Cemeteries	122.3	1,038.2	138.9	1,101.6	923.6	1	367.1	655.3	12.9	4,360.9
Recreation	11.4	90	11.5	125.1	166	146.8	65.2	130.7	370.1	1,116.8
Residential	1	5.7	1.1	5.2	72	10.2	.6	45.9	27.2	168.9
Roads and Freeways	722.1	6,890	1,536	5,829.3	1,794.7	1,182.5	630.7	3,028	616.6	22,229.9
Single Family Residential	1,376	8,929.5	2,421	12,094.8	5,223.4	530.2	735.5	4,198.9	346.6	35,855.9
Spaced Rural Residential	-	14.9	7.9	453.3	10,202.2	7,361.4	-	26.6	7,094.3	25,160.6
Storage and Warehousing	-	75.4	113.8	99.3	31.5	-	.1	105.7	-	425.8
Utilities	50	168.5	16.9	431.9	121	6.5	14.8	338.9	32.1	1,180.6
Vacant and Undeveloped	709.3	618	156.2	1,092.2	17,510.8	30,997.8	111.8	4,043.3	15,532.7	70,772.1
TOTALS	4,388	26,619	6,375	30,549	53,488	62,746	5,542	29,571	63,257	282,533.5

Source: SANDAG 2009

Table 2-14: Pollutant Generating Sources – 908.1 Point Loma Hydrologic Area*

Inventory Sites/Facilities**	Quantities			Pollutant Source Loading Potential***							
				Heavy Metals	Organics	Oil & Grease	Sediment	Pesticides	Nutrients	Gross Pollutants	Bacteria
Agriculture	0			L	UL	UL	L	L	L	UK	L
Animal	13			N	L	UL	L	UK	L	UK	L
Automotive	61			L	L	L	UL	UL	UK	L	UL
Cemetery	0			N	N	UL	L	L	L	L	L
Contractor	97			UL	UL	UL	L	UL	UL	L	UL
Food Establishment	174			N	L	L	UL	UK	UK	L	L
Equipment	20			L	L	L	UL	UL	UK	L	UL
Fueling	7			UK	L	L	UK	N	N	UK	N
General Industrial	18			L	L	L	UK	UK	UK	UK	UK
General Retail	38			UL	UL	UL	L	UL	UL	L	UL
Golf	1			N	N	UL	L	L	L	L	L
Health Services	1			N	L	UL	L	UK	L	UK	UL
Institutional	2			L	UK	UK	UK	UK	UK	UK	UL
Manufacturing	4			L	UK	UK	UK	UK	UK	UK	UL
Metal	4			L	L	L	UK	UK	UK	UK	UL
Nursery	2			L	UL	UL	L	L	L	UK	L
Stone	1			L	UK	UK	UK	UK	UK	UK	UL
Storage & Warehousing	61			L	UK	UK	UK	UK	UK	UK	UL
Municipal	High	Non-High		L	L	L	L	UK	UK	UK	UL
	15	0									
Construction	High	Medium	Low	UL	UL	UL	L	UL	UL	L	UL
	8	5	207								
Residential	1,462 acres			L	L	L	L	L	L	UK	L

The highest threat-to-water-quality (TTWQ) rated sources within each HA based on the HPWQPs are identified in the table (yellow highlight signifies HPWQP). The HPWQP is associated with the sources that are likely to generate those pollutants (green highlight).

*Prepared based on the WURMP Copermittees FY 2012 JURMP Annual Reports. The methodology for developing the tables is included as **Appendix B** to this report

**Other sources are not reported in this table including: Land Development and Non-inventoried Businesses

***Pollutant Source Loading Potential taken from BLTEA 2005 and LTEA 2011; N = None, UK = Unknown, UL = Unlikely, L = Likely

Table 2-15: Pollutant Generating Sources – 908.2 San Diego Mesa Hydrologic Area*

Inventory Sites/Facilities**	Quantities			Pollutant Source Loading Potential***								
				Heavy Metals	Organics	Oil & Grease	Sediment	Pesticides	Nutrients	Gross Pollutants	Bacteria	Trash
Agriculture	1			L	UL	UL	L	L	L	UK	L	L
Animal	82			N	L	UL	L	UK	L	UK	L	L
Automotive	876			L	L	L	UL	UL	UK	L	UL	L
Contractor	389			UL	UL	UL	L	UL	UL	L	UL	L
Food Establishment	2,316			N	L	L	UL	UK	UK	L	L	L
Equipment	91			L	L	L	UL	UL	UK	L	UL	L
General Industrial	95			L	L	L	UK	UK	UK	UK	UK	L
General Retail	260			UL	UL	UL	L	UL	UL	L	UL	L
Health Services	18			N	L	UL	L	UK	L	UK	UL	L
Institutional	68			L	UK	UK	UK	UK	UK	UK	UL	L
Manufacturing	57			L	UK	UK	UK	UK	UK	UK	UL	L
Metal	40			L	L	L	UK	UK	UK	UK	UL	L
Nursery	18			L	UL	UL	L	L	L	UK	L	L
Stone	9			L	UK	UK	UK	UK	UK	UK	UL	L
Storage & Warehousing	210			L	UK	UK	UK	UK	UK	UK	UL	L
Municipal	High	Non-High		L	L	L	L	UK	UK	UK	UL	L
	259	39										
Construction	High	Medium	Low	UL	UL	UL	L	UL	UL	L	UL	L
	4	18	1,066									
Residential	10,716 acres			L	L	L	L	L	L	UK	L	L

The highest threat-to-water-quality (TTWQ) rated sources within each HA based on the HPWQPs are identified in the table (yellow highlight signifies HPWQP). The HPWQP is associated with the sources that are likely to generate those pollutants (green highlight).

*Prepared based on the WURMP Copermittees FY 2012 JURMP Annual Reports. The methodology for developing the tables is included as **Appendix B** to this report.

**Other sources are not reported in this table including: Land Development and Non-inventoried Businesses

***Pollutant Source Loading Potential taken from BLTEA 2005 and LTEA 2011; N = None, UK = Unknown, UL = Unlikely, L = Likely

Table 2-16: Pollutant Generating Sources – 908.3 National City Hydrologic Area*

Inventory Sites/Facilities**	Quantities			Pollutant Source Loading Potential***								
				Heavy Metals	Organics	Oil & Grease	Sediment	Pesticides	Nutrients	Gross Pollutants	Bacteria/Pathogens	Trash
Agriculture	0			L	UL	UL	L	L	L	UK	L	L
Animal	3			N	L	UL	L	UK	L	UK	L	L
Automotive	234			L	L	L	UL	UL	UK	L	UL	L
Contractor	82			UL	UL	UL	L	UL	UL	L	UL	L
Food Establishment	233			N	L	L	UL	UK	UK	L	L	L
Equipment	45			L	L	L	UL	UL	UK	L	UL	L
General Industrial	36			L	L	L	UK	UK	UK	UK	UK	L
General Retail	30			UL	UL	UL	L	UL	UL	L	UL	L
Health Services	0			N	L	UL	L	UK	L	UK	UL	L
Manufacturing	10			L	UK	UK	UK	UK	UK	UK	UL	L
Metal	19			L	L	L	UK	UK	UK	UK	UL	L
Nursery	0			L	UL	UL	L	L	L	UK	L	L
Stone	17			L	UK	UK	UK	UK	UK	UK	UL	L
Storage & Warehousing	69			L	UK	UK	UK	UK	UK	UK	UL	L
Municipal	High	Non-High		L	L	L	L	UK	UK	UK	UL	L
	23	10										
Construction	High	Medium	Low	UL	UL	UL	L	UL	UL	L	UL	L
	3	11	230									
Residential	2,741 acres			L	L	L	L	L	L	UK	L	L

The highest threat-to-water-quality (TTWQ) rated sources within each HA based on the HPWQPs are identified in the table (yellow highlight signifies HPWQP). The HPWQP is associated with the sources that are likely to generate those pollutants (green highlight).

*Prepared based on the WURMP Copermittees FY 2012 JURMP Annual Reports. The methodology for developing the tables is included as **Appendix B** to this report

**Other sources are not reported in this table including: Land Development and Non-inventoried Businesses

***Pollutant Source Loading Potential taken from BLTEA 2005 and LTEA 2011; N = None, UK = Unknown, UL = Unlikely, L = Likely

Table 2-17: Pollutant Generating Sources – 909.1 Lower Sweetwater Hydrologic Area*

Inventory Sites/Facilities**	Quantities			Pollutant Source Loading Potential****							
				Heavy Metals	Organics	Oil & Grease	Sediment	Pesticides	Nutrients	Gross Pollutants	Bacteria/Pathogens
Agriculture	0			L	UL	UL	L	L	L	UK	L
Animal	28			N	L	UL	L	UK	L	UK	L
Automotive	452			L	L	L	UL	UL	UK	L	UL
Contractor	113			UL	UL	UL	L	UL	UL	L	UL
Food Establishment	491			N	L	L	UL	UK	UK	L	L
Equipment	40			L	L	L	UL	UL	UK	L	UL
General Industrial	29			L	L	L	UK	UK	UK	UK	UK
General Retail	74			UL	UL	UL	L	UL	UL	L	UL
Manufacturing	3			L	UK	UK	UK	UK	UK	UK	UL
Metal	15			L	L	L	UK	UK	UK	UK	UL
Nursery	9			L	UL	UL	L	L	L	UK	L
Stone	12			L	UK	UK	UK	UK	UK	UK	UL
Storage & Warehousing	46			L	UK	UK	UK	UK	UK	UK	UL
Municipal	High	Non-High		L	L	L	L	UK	UK	UK	UL
	69	27									
Construction	High	Medium	Low	UL	UL	UL	L	UL	UL	L	UL
	12	26	264								
Residential	13,815 acres			L	L	L	L	L	L	UK	L

The highest threat-to-water-quality (TTWQ) rated sources within each HA based on the HPWQPs are identified in the table (yellow highlight signifies HPWQP). The HPWQP is associated with the sources that are likely to generate those pollutants (green highlight).

*Prepared based on the WURMP Copermittees FY 2012 JURMP Annual Reports. The methodology for developing the tables is included as [Appendix B](#) to this report

**Other sources are not reported in this table including: Land Development and Non-inventoried Businesses

***Pollutant Source Loading Potential taken from BLTEA 2005 and LTEA 2011; N = None, UK = Unknown, UL = Unlikely, L = Likely

Table 2-18: Pollutant Generating Sources – 909.2 Middle Sweetwater Hydrologic Area*

Inventory Sites/Facilities**	Quantities			Pollutant Source Loading Potential***							
				Heavy Metals	Organics	Oil & Grease	Sediment	Pesticides	Nutrients	Gross Pollutants	Bacteria/Pathogens
Agriculture	0			L	UL	UL	L	L	L	UK	L
Animal	8			N	L	UL	L	UK	L	UK	L
Automotive	33			L	L	L	UL	UL	UK	L	UL
Contractor	1			UL	UL	UL	L	UL	UL	L	UL
Food Establishment	76			N	L	L	UL	UK	UK	L	L
Equipment	1			L	L	L	UL	UL	UK	L	UL
General Industrial	0			L	L	L	UK	UK	UK	UK	UK
General Retail	5			UL	UL	UL	L	UL	UL	L	UL
Health Services	0			N	L	UL	L	UK	L	UK	UL
Institutional	0			L	UK	UK	UK	UK	UK	UK	UL
Manufacturing	0			L	UK	UK	UK	UK	UK	UK	UL
Metal	0			L	L	L	UK	UK	UK	UK	UL
Nursery	6			L	UL	UL	L	L	L	UK	L
Stone	0			L	UK	UK	UK	UK	UK	UK	UL
Storage & Warehousing	0			L	UK	UK	UK	UK	UK	UK	UL
Municipal	High		Non-High	L	L	L	L	UK	UK	UK	UL
	2		28								
Construction	High		Medium	UL	UL	UL	L	UL	UL	L	UL
	23		10								
Residential	15,915 acres			L	L	L	L	L	L	UK	L

The highest threat-to-water-quality (TTWQ) rated sources within each HA based on the HPWQPs are identified in the table (yellow highlight signifies HPWQP). The HPWQP is associated with the sources that are likely to generate those pollutants (green highlight).

*Prepared based on the WURMP Copermittees FY 2012 JURMP Annual Reports. The methodology for developing the tables is included as [Appendix B](#) to this report

**Other sources are not reported in this table including: Land Development and Non-inventoried Businesses

***Pollutant Source Loading Potential taken from BLTEA 2005 and LTEA 2011; N = None, UK = Unknown, UL = Unlikely, L = Likely

Table 2-19: Pollutant Generating Sources – 909.3 Upper Sweetwater Hydrologic Area*

Inventory Sites/Facilities**	Quantities			Pollutant Source Loading Potential***							
				Heavy Metals	Organics	Oil & Grease	Sediment	Pesticides	Nutrients	Gross Pollutants	Bacteria/Pathogens
Animal	6			N	L	UL	L	UK	L	UK	L
Automotive	0			L	L	L	UL	UL	UK	L	UL
Contractor	0			UL	UL	UL	L	UL	UL	L	UL
Food Establishment	0			N	L	L	UL	UK	UK	L	L
Equipment	0			L	L	L	UL	UL	UK	L	UL
General Industrial	0			L	L	L	UK	UK	UK	UK	UK
General Retail	1			UL	UL	UL	L	UL	UL	L	UL
Manufacturing	0			L	UK	UK	UK	UK	UK	UK	UL
Metal	0			L	L	L	UK	UK	UK	UK	UL
Nursery	0			L	UL	UL	L	L	L	UK	L
Stone	0			L	UK	UK	UK	UK	UK	UK	UL
Storage & Warehousing	0			L	UK	UK	UK	UK	UK	UK	UL
Municipal	High		Non-High	L	L	L	L	UK	UK	UK	UL
	1		3								
Construction	High		Medium	UL	UL	UL	L	UL	UL	L	UL
	0		4								
Residential	8,119 acres			L	L	L	L	L	L	UK	L

The highest threat-to-water-quality (TTWQ) rated sources within each HA based on the HPWQPs are identified in the table (there are no HPWQP identified for this HA at this time). The HPWQP is associated with the sources that are likely to generate those pollutants (green highlight).

*Prepared based on the WURMP Copermittees FY 2012 JURMP Annual Reports. The methodology for developing the tables is included as **Appendix B** to this report

**Other sources are not reported in this table including: Land Development and Non-inventoried Businesses

***Pollutant Source Loading Potential taken from BLTEA 2005 and LTEA 2011; N = None, UK = Unknown, UL = Unlikely, L = Likely

Table 2-20: Pollutant Generating Sources – 910.1 Coronado Hydrologic Area*

Inventory Sites/Facilities**	Quantities			Pollutant Source Loading Potential***							
				Heavy Metals	Organics	Oil & Grease	Sediment	Pesticides	Nutrients	Gross Pollutants	Bacteria/Pathogens
Animal	4			N	L	UL	L	UK	L	UK	L
Automotive	14			L	L	L	UL	UL	UK	L	UL
Contractor	0			UL	UL	UL	L	UL	UL	L	UL
Food Establishment	118			N	L	L	UL	UK	UK	L	L
Equipment	1			L	L	L	UL	UL	UK	L	UL
General Industrial	0			L	L	L	UK	UK	UK	UK	UK
General Retail	47			UL	UL	UL	L	UL	UL	L	UL
Manufacturing	1			L	UK	UK	UK	UK	UK	UK	UL
Metal	0			L	L	L	UK	UK	UK	UK	UL
Nursery	0			L	UL	UL	L	L	L	UK	L
Stone	0			L	UK	UK	UK	UK	UK	UK	UL
Storage & Warehousing	0			L	UK	UK	UK	UK	UK	UK	UL
Municipal	High		Non-High	L	L	L	L	UK	UK	UK	UL
	77		23								
Construction	High		Medium	UL	UL	UL	L	UL	UL	L	UL
	52		3								
Residential	860 acres			L	L	L	L	L	L	UK	L

The highest threat-to-water-quality (TTWQ) rated sources within each HA based on the HPWQPs are identified in the table (yellow highlight signifies HPWQP). The HPWQP is associated with the sources that are likely to generate those pollutants (green highlight).

*Prepared based on the WURMP Copermittees FY 2012 JURMP Annual Reports. The methodology for developing the tables is included as [Appendix B](#) to this report

**Other sources are not reported in this table including: Land Development and Non-inventoried Businesses

***Pollutant Source Loading Potential taken from BLTEA 2005 and LTEA 2011; N = None, UK = Unknown, UL = Unlikely, L = Likely

Table 2-21: Pollutant Generating Sources – 910.2 Otay Hydrologic Area*

Inventory Sites/Facilities**	Quantities			Pollutant Source Loading Potential***							
				Heavy Metals	Organics	Oil & Grease	Sediment	Pesticides	Nutrients	Gross Pollutants	Bacteria/Pathogens
Animal	6			N	L	UL	L	UK	L	UK	L
Automotive	420			L	L	L	UL	UL	UK	L	UL
Contractor	71			UL	UL	UL	L	UL	UL	L	UL
Food Establishment	314			N	L	L	UL	UK	UK	L	L
Equipment	26			L	L	L	UL	UL	UK	L	UL
General Industrial	79			L	L	L	UK	UK	UK	UK	UK
General Retail	163			UL	UL	UL	L	UL	UL	L	UL
Manufacturing	15			L	UK	UK	UK	UK	UK	UK	UL
Metal	17			L	L	L	UK	UK	UK	UK	UL
Nursery	3			L	UL	UL	L	L	L	UK	L
Stone	5			L	UK	UK	UK	UK	UK	UK	UL
Storage & Warehousing	70			L	UK	UK	UK	UK	UK	UK	UL
Municipal	High		Non-High	L	L	L	L	UK	UK	UK	UL
	45		11								
Construction	High		Medium	UL	UL	UL	L	UL	UL	L	UL
	14		14								
Residential	5,036 acres			L	L	L	L	L	L	UK	L

The highest threat-to-water-quality (TTWQ) rated sources within each HA based on the HPWQPs are identified in the table (yellow highlight signifies HPWQP). The HPWQP is associated with the sources that are likely to generate those pollutants (green highlight).

*Prepared based on the WURMP Copermittees FY 2012 JURMP Annual Reports. The methodology for developing the tables is included as **Appendix B** to this report

**Other sources are not reported in this table including: Land Development and Non-inventoried Businesses

***Pollutant Source Loading Potential taken from BLTEA 2005 and LTEA 2011; N = None, UK = Unknown, UL = Unlikely, L = Likely

Table 2-22: Pollutant Generating Sources – 910.3 Dulzura Hydrologic Area*

Inventory Sites/Facilities**	Quantities			Pollutant Source Loading Potential***							
				Heavy Metals	Organics	Oil & Grease	Sediment	Pesticides	Nutrients	Gross Pollutants	Bacteria/Pathogens
Animal	2			N	L	UL	L	UK	L	UK	L
Automotive	1			L	L	L	UL	UL	UK	L	UL
Contractor	0			UL	UL	UL	L	UL	UL	L	UL
Food Establishment	1			N	L	L	UL	UK	UK	L	L
Equipment	0			L	L	L	UL	UL	UK	L	UL
General Industrial	0			L	L	L	UK	UK	UK	UK	UK
General Retail	0			UL	UL	UL	L	UL	UL	L	UL
Manufacturing	0			L	UK	UK	UK	UK	UK	UK	UL
Metal	0			L	L	L	UK	UK	UK	UK	UL
Nursery	1			L	UL	UL	L	L	L	UK	L
Stone	0			L	UK	UK	UK	UK	UK	UK	UL
Storage & Warehousing	0			L	UK	UK	UK	UK	UK	UK	UL
Municipal	High		Non-High	L	L	L	L	UK	UK	UK	UL
	3		2								
Construction	High	Medium	Low	UL	UL	UL	L	UL	UL	L	UL
	8	2	17								
Residential	7,482 acres			L	L	L	L	L	L	UK	L

The highest threat-to-water-quality (TTWQ) rated sources within each HA based on the HPWQPs are identified in the table (there are no HPWQP for this HA identified at this time). The HPWQP is associated with the sources that are likely to generate those pollutants (blue highlight).

*Prepared based on the WURMP Copermittees FY 2012 JURMP Annual Reports. The methodology for developing the tables is included as **Appendix B** to this report

**Other sources are not reported in this table including: Land Development and Non-inventoried Businesses

***Pollutant Source Loading Potential taken from BLTEA 2005 and LTEA 2011; N = None, UK = Unknown, UL = Unlikely, L = Likely

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3 IMPLEMENTATION OF WATERSHED ACTIVITIES

This Annual Report follows the standardized format developed by the San Diego Regional Copermittees to provide the necessary information required by sections E, H, I.2 and 4, and J.3.b of the Permit. Watershed Activity Implementation Summary Sheets for all watershed activities implemented during this reporting period, including activities implemented in compliance with a TMDL, are located in [Appendix C](#) of this Annual Report. The format of the activity summary template utilized by the San Diego Bay Copermittees is presented in the 2008 San Diego Bay WURMP document.

3.1 WATERSHED AND JURMP ACTIVITIES

The San Diego Bay WMA Copermittees implemented activities in the watershed as part of the WURMP and JURMP programs during this reporting period. The San Diego Bay WURMP Copermittees are responsible for identifying and implementing watershed water quality and education activities that address the HPWQPs in the WMA. These activities may be implemented individually or collectively at the regional, watershed, or jurisdictional level. The activity selection process is described fully in the March 2008 San Diego Bay WURMP document. The Copermittees believe it is an important step towards integrating jurisdictional and watershed activities and reporting to best assess and plan for activities that address the identified HPWQPs on an HA basis.

Copermittees are also responsible for implementing JURMP activities throughout their jurisdictions in an effort to improve the water quality of urban runoff. Many of these activities have historically been reported only in jurisdictional annual reports. The Copermittees recognize that in order to assess the effectiveness of urban runoff management programs, it is important to track and report the data and information on a watershed basis.

In an effort to report on the Copermittees' jurisdictional activities performed in the WMA, data was collected for these activities on an HA basis. The data and information is not comprehensive and for some data sets, estimates were used to generate quantities for the activities – this is explained in [Appendix B](#) of the report.

The tables below represent the Copermittees' efforts towards reporting urban runoff management activities on a watershed basis, e.g., reporting of Copermittee activities regardless of jurisdiction-specific program labels. Reporting as many jurisdictional and watershed urban runoff management activities as feasible on a watershed basis will assist in the effectiveness assessment when attempting to connect sources to urban runoff water quality problems and activities to urban runoff water quality improvements.

The effectiveness assessments for these activities are presented on the Activity Implementation Sheets ([Appendix C](#)) and are summarized in the Section 4 – Effectiveness Assessment.

Table 3-1: Watershed and JURMP Activities – 908.1 Point Loma Hydrologic Area

Activity	Results # of Inspections: (Inventory #)			High Priority Water Quality Problem(s)					
				Bacteria	Gross Pollutants	Metals	Oil and Grease	Pesticides	
Inspections	Municipal	High		Non-High			X	X	X
		28: (15)		0: (0)					
	Construction	High	Med	Low		X			
		125:(8)	71:(5)	1,099: (207)					
	Agriculture	0: (0)			X				X
	Animal	6: (13)			X				X
	Automotive	28: (61)				X	X	X	
	Contractors	4: (97)				X			
	Food Establishment	71: (174)			X	X		X	
	Equipment	5: (20)				X	X	X	
	General Industrial	6: (18)					X	X	
	Institutional	2: (2)					X		
	Marina	18: (19)					X	X	
	Metal	1: (4)					X		
	Nursery	0: (2)			X		X		X
	Stone	0: (1)					X		
	Storage and Warehousing	2: (61)					X		
Street Sweeping (Tons Collected)	121.97			X					
Basins/Inlets/Ditches/MS4 (Tons Removed)	5.13			X					
Watershed Activities									
Activity No.	Type	Activity Name			Bacteria	Gross Pollutants	Metals	Oil and Grease	Pesticides
SDB-001	Water Quality	Pet Waste Bag Collaborative Watershed Activity			X				
SDB-076	Water Quality	Rainwater Harvesting Rebate Pilot Program			X				
SDB-077	Water Quality	Qualcomm Stadium Drop-off Community Clean-up and Recycling Event Sponsorship			X				
SDB-045	Education	ILACSD High School Watershed Presentations			X			X	X
SDB-055	Education	San Diego Bay Watershed Brochure			X	X	X	X	X
SDB-075	Education	Juneteenth			X			X	X
SDB-025	Monitoring	Regional Harbor Monitoring Program			X	X	X	X	X

Table 3-2: Watershed and JURMP Activities – 908.2 San Diego Mesa Hydrologic Area¹

Activity		Results # of Inspections: (Inventory #)			High Priority Water Quality Problem(s)				
					Bacteria	Metals	Pesticides	Sediment	Trash
Inspections	Construction	High	Med	Low				X	X
		554: (14)	495: (18)	5,756: (1,066)					
	Municipal	High		Non-High		X	X	X	X
		532: (259)		65: (39)					
	Agriculture	1: (1)			X	X	X	X	X
	Animal	28: (82)			X		X		X
	Automotive	463: (876)				X			X
	Contractor	89: (389)						X	X
	Food Establishment	883: (2,316)			X				X
	Equipment	51: (91)				X			X
	General Industrial	85: (95)				X			X
	General Retail	104: (260)						X	X
	Health Services	14: (18)						X	X
	Institutional	31: (68)				X			X
	Manufacturing	28: (57)				X		X	X
	Metal	17: (40)				X			X
	Nursery	7: (18)			X	X	X	X	X
	Stone	3: (9)				X		X	X
Storage and Warehousing	71: (210)				X		X	X	
Street Sweeping (Tons Collected)		1,148.94			X	X		X	X
Basins/Inlets/Ditches/MS4 (Tons Removed)		428.88			X	X		X	X
Watershed Activities									
Activity No.	Type	Activity Name			Bacteria	Metals	Pesticides	Sediment	Trash
SDB-001	Water Quality	Pet Waste Bag Collaborative Watershed Activity			X				
SDB-002B	Water Quality	El Cajon Boulevard Storm Drain Inlet Retrofit for Chollas Creek Watershed Protection Project			X			X	X
SDB-004	Water Quality and Education	San Diego Bay Watershed Cleanup Events Collaborative Activity			X				X
SDB-009	Water Quality	Enhanced Construction Oversight						X	

¹Watershed activities highlighted in bold address the Chollas Creek Metals and Diazinon TMDLs in Chollas Creek HSA (908.22). All activities implemented by the Copermitees, U.S. Navy, and Caltrans during this period to address the Chollas Creek Metals and Diazinon TMDLs are provided in [Appendix D](#).

Table 3-2 (cont.): Watershed and JURMP Activities – 908.2 San Diego Mesa Hydrologic Area²

Watershed Activities							
Activity No.	Type	Activity Name	Bacteria	Metals	Pesticides	Sediment	Trash
SDB-014	Water Quality	Southcrest Park Green Lot Infiltration Project	X	X			
SDB-015	Water Quality	Memorial Park Green Lot Infiltration Project	X	X			
SDB-037	Water Quality	43rd and Logan Biofiltration Project for Chollas Creek Watershed Protection (Green Street)	X	X			
SDB-048	Water Quality	Outdoor Special Event Oversight					X
SDB-049	Water Quality	Maple Street Canyon Water Quality Improvement Project	X			X	X
SDB-050	Water Quality	Chollas Creek Runoff Reduction and Groundwater Recharge Project		X		X	
SDB-058	Water Quality	Beta Green Alley	X	X	X		X
SDB-062	Water Quality and Education	Residential Rain Barrel Subsidies and Distributions	X	X	X	X	X
SDB-071	Water Quality	Targeted Catch Basin Cleaning Pilot Study	X	X		X	X
SDB-072	Water Quality	Municipal Best Management Practices/Irrigation/Xeriscape			X	X	
SDB-076	Water Quality	Rainwater Harvesting Rebate Pilot Program	X				
SDB-077	Water Quality	Qualcomm Stadium Drop-off Community Clean-up and Recycling Event Sponsorship	X				X
SDB-045	Education	I Love a Clean San Diego High School Watershed Presentations	X	X	X	X	X
SDB-055	Education	San Diego Bay Watershed Brochure	X	X	X	X	X
SDB-075	Education	Juneteenth	X		X		X
SDB-020	Monitoring	Enhanced Dry Weather Monitoring Program	X	X	X	X	X
SDB-025	Monitoring	Regional Harbor Monitoring Program	X	X	X	X	

²Watershed activities highlighted in bold address the Chollas Creek Metals and Diazinon TMDLs in Chollas Creek HSA (908.22). All activities implemented by the Copermitttees, U.S. Navy, and Caltrans during this period to address the Chollas Creek Metals and Diazinon TMDLs are provided in [Appendix D](#).

Table 3-3: Watershed and JURMP Activities – 908.3 National City Hydrologic Area

Activity		Results # of Inspections: (Inventory #)			High Priority Water Quality Problem(s)		
					Bacteria	Sediment	Trash
Inspections	Construction	High	Medium	Low		X	X
		56: (3)	132: (11)	833: (230)			
	Municipal	High		Non-High		X	X
		37: (23)		0: (10)			
	Agriculture	0: (0)			X	X	X
	Animal	1: (3)			X	X	X
	Automotive	83: (234)					X
	Contractor	15: (82)				X	X
	Food Establishment	139: (233)			X		X
	Equipment	25: (45)				X	X
	General Industrial	7: (36)					X
	Institutional	1: (2)					X
	Manufacturing	4: (10)				X	X
	Metal	1: (5)					X
	Nursery	0: (0)			X	X	X
	Stone	4: (7)					X
Storage and Warehousing	17: (69)				X	X	
Street Sweeping (Tons Collected)		796.23			X	X	X
Basins/Inlets/Ditches/MS4 (Tons Removed)		12.76			X	X	X
Watershed Activities							
Activity No.	Type	Activity Name			Bacteria	Sediment	Trash
SDB-001	Water Quality	Pet Waste Bag Collaborative Watershed Activity			X		
SDB-004	Water Quality and Education	San Diego Bay Watershed Cleanup Events Collaborative Activity			X		X
SDB-005	Water Quality	Clean Community Program			X		
SDB-007	Water Quality	Additional Dry Season Construction Inspections				X	X
SDB-074	Water Quality	National City Multi-Family Residential Property Evaluation			X	X	X
SDB-076	Water Quality	Rainwater Harvesting Rebate Pilot Program			X		
SDB-077	Water Quality	Qualcomm Stadium Drop-off Community Clean-up and Recycling Event Sponsorship			X		X
SDB-075	Education	Juneteenth			X		X

Table 3-4: Watershed and JURMP Activities – 909.1 Lower Sweetwater Hydrologic Area

Activity		Results # of Inspections: (Inventory #)	High Priority Water Quality Problem(s)
			Bacteria
Inspections	Agriculture	0: (0)	X
	Animal	4: (28)	X
	Food Establishment	160: (491)	X
	Nursery	6: (9)	X
Street Sweeping (Tons Collected)		854.46	X
Basins/Inlets/Ditches/MS4 (Tons Removed)		248.78	X
Watershed Activities			
Activity No.	Type	Activity Name	Bacteria
SDB-001	Water Quality	Pet Waste Bag Collaborative Watershed Activity	X
SDB-004	Water Quality and Education	San Diego Bay Watershed Cleanup Events Collaborative Activity	X
SDB-005	Water Quality	Clean Community Program	X
SDB-007	Water Quality	Additional Dry Season Construction Inspections	
SDB-035	Water Quality	Update Recycling and Solid Waste Planning Manual	X
SDB-046	Water Quality	Land Acquisitions San Diego Bay Watershed	X
SDB-074	Water Quality	National City Multi-Family Residential Property Evaluation	X
SDB-076	Water Quality	Rainwater Harvesting Rebate Pilot Program	X
SDB-077	Water Quality	Qualcomm Stadium Drop-off Community Clean-up and Recycling Event Sponsorship	X
SDB-039	Education	Provide Homeowner’s Association Education About Stormwater Pollution Prevention	X
SDB-040	Education	Stormwater Education Booth at Pet Festival and Doggy Dash	X
SDB-041	Education	Fats, Oils, and Grease (FOG) Program	X
SDB-066	Education	Focused Outreach to Equestrian Community	X
SDB-075	Education	Juneteenth	X
SDB-025	Monitoring	Regional Harbor Monitoring Program	X

Table 3-5: Watershed and JURMP Activities – 909.2 Middle Sweetwater Hydrologic Area

Activity		Results # of Inspections: (Inventory #)		High Priority Water Quality Problem(s)
				Pesticides
Inspections	Municipal	High	Non-High	X
		2: (2)	28: (28)	
	Agriculture	0: (0)		X
	Animal	3: (8)		
	Nursery	1: (6)		X
Street Sweeping (Tons Collected)		309.73		
Basins/Inlets/Ditches/MS4 (Tons Removed)		275.08		

Watershed Activities

Activity No.	Type	Activity Name	Pesticides
SDB-001	Water Quality	Pet Waste Bag Collaborative Watershed Activity	
SDB-001A	Water Quality	Pet Waste Bag Dispenser Program in County Parks	
SDB-004	Water Quality and Education	San Diego Bay Watershed Cleanup Events Collaborative Activity	
SDB-046	Water Quality	Land Acquisitions San Diego Bay Watershed	X
SDB-056	Water Quality	Stormwater Quality Master Plans for Special Drainage Fee Areas	X
SDB-062	Water Quality and Education	Residential Rain Barrel Subsidies and Distributions	X
SDB-046	Water Quality	Land Acquisitions San Diego Bay Watershed	X
SDB-025	Monitoring	Regional Harbor Monitoring Program	X

Table 3-6: Watershed and JURMP Activities – 909.3 Upper Sweetwater Hydrologic Area

Activity	Results # of Inspections: (Inventory #)	High Priority Water Quality Problem(s)	
		None Identified at this time	
Street Sweeping (Tons Collected)	363.34	N/A	
Basins/Inlets/Ditches/MS4 (Tons Removed)	322.69	N/A	
Watershed Activities			
Activity No.	Type	Activity Name	None Identified at this time
SDB-001	Water Quality	Pet Waste Bag Collaborative Watershed Activity	N/A
SDB-001A	Water Quality	Pet Waste Bag Dispenser Program in County Parks	N/A
SDB-056	Water Quality	Stormwater Quality Master Plans for Special Drainage Fee Areas	N/A
SDB-062	Water Quality and Education	Residential Rain Barrel Subsidies and Distributions	N/A
SDB-066	Education	Focused Outreach to Equestrian Community	N/A

Table 3-7: Watershed and JURMP Activities – 910.1 Coronado Hydrologic Area

Activity	Results # of Inspections: (Inventory #)	High Priority Water Quality Problem(s)				
		Bacteria	Gross Pollutants			
Inspections	Construction	High 112: (52)	Med 167: (3)	Low 302: (334)		X
	Agriculture	0: (0)			X	
	Animal	3: (4)			X	
	Automotive	10: (12)				X
	Equipment	0: (0)				X
	Food Establishment	94: (118)			X	X
	Nursery	0: (0)			X	
Street Sweeping (Tons Collected)	179.69			X		
Basins/Inlets/Ditches/MS4 (Tons Removed)	1,261.95			X		
Watershed Activities						
Activity No.	Type	Activity Name			Bacteria	Gross Pollutants
SDB-001	Water Quality	Pet Waste Bag Collaborative Watershed Activity			X	
SDB-004	Water Quality	San Diego Bay Watershed Cleanup Events Collaborative Activity			X	X
SDB-047	Water Quality	Large Special Event Inspection and Clean-up			X	
SDB-052	Water Quality	Palm Avenue Stormwater Diverter			X	X
SDB-045	Education	ILACSD High School Watershed Presentations			X	
SDB-025	Monitoring	Regional Harbor Monitoring Program			X	X

Table 3-8: Watershed and JURMP Activities – 910.2 Otay Hydrologic Area

Activity		Results # of Inspections: (Inventory #)	High Priority Water Quality Problem(s)
			Bacteria
Inspections	Agriculture	0: (0)	X
	Animal	2: (6)	X
	Food Establishment	146: (314)	X
Street Sweeping (Tons Collected)		649.87	X
Basins/Inlets/Ditches/MS4 (Tons Removed)		159.43	X
Watershed Activities			
Activity No.	Type	Activity Name	Bacteria
SDB-001	Water Quality	Pet Waste Bag Collaborative Watershed Activity	X
SDB-001A	Water Quality	Pet Waste Bag Dispenser Program in County Parks	X
SDB-004	Water Quality	San Diego Bay Watershed Cleanup Events Collaborative Activity	X
SDB-035	Water Quality	Update Recycling and Solid Waste Planning Manual	X
SDB-046	Water Quality	Land Acquisitions in the San Diego Bay Watershed	X
SDB-076	Water Quality	Rainwater Harvesting Rebate Pilot Program	X
SDB-077	Water Quality	Qualcomm Stadium Drop-off Community Clean-up and Recycling Event Sponsorship	X
SDB-062	Water Quality and Education	Residential Rain Barrel Subsidies and Distributions	X
SDB-073	Water Quality and Education	Walk the Watershed	X
SDB-039	Education	Provide Homeowner's Association Education About Stormwater Pollution Prevention	X
SDB-040	Education	Stormwater Education Booth at Pet Festival and Doggy Dash	X
SDB-041	Education	Fats, Oils, and Grease (FOG) Program	X
SDB-045	Education	ILACSD High School Watershed Presentations	X
SDB-066	Education	Focused Outreach to Equestrian Community	X
SDB-075	Education	Juneteenth	X
SDB-025	Monitoring	Regional Harbor Monitoring Program	

Table 3-9: Watershed and JURMP Activities – 910.3 Dulzura Hydrologic Area

Activity	Results # of Inspections: (Inventory #)	High Priority Water Quality Problem(s)	
		None Identified at this time	
Street Sweeping (Tons Collected)	399.41	N/A	
Basins/Inlets/Ditches/MS4 (Tons Removed)	328.35	N/A	
Watershed Activities			
Activity No.	Type	Activity Name	None Identified at this time
SDB-001	Water Quality	Pet Waste Bag Collaborative Watershed Activity	N/A
SDB-001A	Water Quality	Pet Waste Bag Dispenser Program in County Parks	N/A
SDB-004	Water Quality	San Diego Bay Watershed Cleanup Events Collaborative Activity	N/A
SDB-046	Water Quality	Land Acquisitions San Diego Bay Watershed	N/A
SDB-062	Water Quality and Education	Residential Rain Barrel Subsidies and Distributions	N/A
SDB-039	Education	Provide Homeowner’s Association Education About Stormwater Pollution Prevention	N/A
SDB-040	Education	Stormwater Education Booth at Pet Festival and Doggy Dash	N/A
SDB-041	Education	Fats, Oils, and Grease (FOG) Program	N/A
SDB-066	Education	Focused Outreach to Equestrian Community	N/A

3.2 SAN DIEGO BAY EDUCATION PROGRAM

The San Diego Bay Education Program is outlined in the San Diego Bay WURMP document. The focus of the education program is to provide useful information to the public about the San Diego Bay WMA and the high priority water quality problems within the watershed. The San Diego Bay Copermittees have committed to implementing several short and long-term educational activities that address watershed concepts and watershed pollutants. These tasks also overlap several programs that are required for NPDES Permit compliance on jurisdictional, watershed, or regional levels.

In addition to the watershed education activities included in Section 3.1, each jurisdiction also implemented targeted education programs within the San Diego Bay WMA that were part of other existing stormwater or environmental programs. The education programs implemented by the San Diego Bay Copermittees are further summarized and described because they contribute to the overall increase in knowledge and behavior change within the WMA. **Table 3-10** below provides a summary of all the education activities implemented during the reporting period, and **Appendix I** provides a complete tabulation by jurisdiction of the watershed.

Table 3-10: San Diego Bay Education Program Summary

Activity Type	General Description of Activity Type	Topics Addressed	Number*
Informational Kiosks	Watershed focused educational displays typically located at parks or municipal facilities	Stormwater BMPs, Water Conservation, Waste Storage, Handling, Disposal, Source Reduction Methods	36 displays
Municipal Staff Trainings	Watershed training provided to jurisdictional staff	General stormwater/watershed topics; BMP implementation; Park Maintenance; Inspection Procedures	22 trainings held and 640 municipal staff trained
Presentations	Presenting watershed information to an organization or group of people	Recycling Outreach; Watershed Education; TMDLs; Water Conservation	13 presentations reaching over an estimated 697 individuals
Print Media	The use of print media coverage (also includes Public Service Announcements (PSAs) for watershed education or information (i.e. newspaper articles; advertisement for events, etc.)	Watershed Pollution Prevention; BMP Implementation; Recycling Information; Community Event Information; Street Sweeping; Rainy Season BMP Information; Environmental Awareness;	24 Print Media methods utilized with the ability to reach over an estimated 179,649 individuals in the San Diego Bay WMA
School Programs (K-12 Children)	Any watershed education efforts focused on school children (i.e. Project SWELL ³ , field trips, classroom presentations, etc.)	Watershed Education; Pollution Preventions; BMP Implementation;	134 school program events reaching over 21,000 school-aged children

* These totals do not include the numbers for some events for which attendance was not recorded.

³ Project SWELL is a collaborative effort between San Diego City Schools, the City of San Diego, the Port of San Diego, Airport Authority, other municipalities, and non-profit organizations to establish comprehensive water quality and pollution prevention curricula in City schools. Started in May 2003, Project SWELL seeks to educate local school children about our region’s watersheds while also fostering a sense of stewardship in these future leaders that will provide long-term solutions to the region’s water quality problems.

3.3 SAN DIEGO BAY PUBLIC PARTICIPATION ACTIVITIES

The following section summarizes the activities and efforts made by the San Diego Bay Copermittees to encourage public participation during this reporting period. A complete list of public participation activities conducted within the watershed is included in [Appendix I](#). Please note that this section only discusses the activities that were identified in the Public Participation section of the WURMP and relate to the San Diego Bay WMA. The San Diego Bay Copermittees have also conducted a number of regional programs and events involving the public in general water quality issues. Many municipalities have worked with stakeholders on efforts such as grant applications and water quality data collection.

3.3.1 STORMWATER COPERMITTEE COLLABORATION AND COMMUNITY WORKSHOPS

Stakeholder participation is vital to the success of watershed activities. The San Diego Bay Copermittees provided several forums during the year that allowed various stakeholder groups to participate in WURMP activities. Community workshops and activities that enhanced collaboration among San Diego Bay Copermittees are discussed below.

San Diego Bay WURMP Meetings

San Diego Bay WURMP Workgroup met eleven (11) times during the reporting period to enhance communication among San Diego Bay Copermittees and other interested stakeholders. These meetings provided a venue to inform, consult, and involve Copermittees on local watershed efforts. [Appendix E](#) presents a summary of the meetings held by the workgroup during the reporting period, including an outline of the principal agenda items.

Workshops and Conferences

San Diego Bay Copermittees conducted 21 educational workshops addressing stormwater issues to inform and involve the public during the reporting period. These workshops reached approximately 1,217 individuals and targeted representatives from businesses and the general public. The topics for the workshops included Total Maximum Daily Loads, composting, BMP Implementation, invasive species, IPM practices, and green businesses. During the workshops, those in attendance were given opportunities to ask questions about the topics and provided with educational materials.

Presentations

As noted in [Table 3-10](#) above, the San Diego Bay Copermittees conducted approximately 180 informational presentations⁴ during the reporting period, targeting many different types of audiences including schools, community groups, and tour groups. These educational presentations provided educational media as well as a venue for questions about stormwater issues to be discussed. The total number of persons attending presentations is estimated at 11,625.

Community Events

During this reporting period, the San Diego Bay Copermittees participated in 63 watershed related community special events such as the Jazz Festival, Walk the Watershed, Otay Valley Regional Park Day, Juneteenth, and Day at the Docks. There were over approximately 3 million community event participants during FY 2012. Collectively, the community events assisted in addressing all five public participation objectives presented in the San Diego Bay WURMP: to inform, consult, involve, collaborate, and empower the public. Many of the community events

⁴ This number includes both presentations and school children presentations from Table 3-10

in FY 2012 also addressed regional water quality issues that spanned several watersheds. The San Diego Bay Copermittees feel such broad based activities play an important role in engaging the public on important water quality issues and that such public participation does positively impact water quality both in the San Diego region as a whole and in San Diego Bay.

Cleanup Events and Waste Collection

The San Diego Bay Copermittees identified trash as a constituent of concern for the Pueblo HU and, as a proactive measure, implemented a variety of activities to address this issue throughout the entire San Diego Bay WMA. Cleanup events are an effective means of not only involving the community in protecting water quality, but also specifically removing trash from water bodies in urban settings. During cleanup events, participants are provided with educational material regarding watershed concepts and have the opportunity to discuss stormwater issues with city staff and knowledgeable volunteers. There were over 60 clean-up locations within the San Diego Bay WMA during the reporting period and an estimated 5,957 individuals assisted in the clean-up activities. The clean-up activities range from individuals collecting litter to organized larger scale clean-up events.

Free collection of household hazardous waste (HHW), electronic, and universal waste also occurred during FY 2012. Residents illegally dump these materials due to a combination of economic pressures, inconvenience, and/or lack of knowledge regarding where to go to dispose of the items. There were 12 waste collection events held during FY 2012 in the San Diego Bay WMA providing an avenue for the public to properly dispose of used oil, appliances, and other items for which they might otherwise have had to pay fees or transport for long distances.

3.3.2 WEBSITES

During the reporting period, the Project Clean Water (PCW) website continued to successfully provide a means of public participation by informing and involving the public on San Diego Bay water quality issues (www.projectcleanwater.org). Each of the three HUs which drain to San Diego Bay—Otay, Pueblo, and Sweetwater—have pages devoted to them that are available for both the San Diego Bay Copermittees and public viewing. The San Diego Bay WURMP page includes downloadable WURMP and WURMP Annual Report documents, as well as land use and MS4 maps. The page specifically states that the San Diego Bay Copermittees are seeking public comment on the program and provides mail, email, and telephone contact information for the Lead Copermittee. The PCW website received 35,229 visitors during the reporting period. The PCW website was updated and as a result visits to individual watershed pages can no longer be tracked.

In addition to the PCW website, the Port of San Diego continues to display the Project ORCA (Online Research Coastal Academy) site, which provides interactive, San Diego Bay focused, environmental education targeted at children (www.projectorca.org). The Copermittees' regional website (www.thinkbluesdregion.org) also serves as a web portal that provides stormwater educational information and links to each member agency's website.

3.3.3 DIRECT INTERACTION

In addition to the specific activities and programs described above, the San Diego Bay Copermittees' staff continued to interact with the public on a daily basis during FY 2012. Municipal employees receive stormwater training on an ongoing basis, as described in each Copermittee's JURMP. Staff with program implementation responsibilities receives the most intensive training, but other employees are educated about stormwater issues as well. Municipal employees interact with the public in their jurisdictions through a variety of avenues, such as the discretionary permit review process, building permit process, building inspections,

public presentations, and outreach campaigns. These activities allow municipal staff to receive public comments about stormwater issues and regulations, as well as answer questions and provide guidance. This day-to-day personal interaction is an important component of the San Diego Bay Copermittees public participation activities.

3.4 COLLABORATIVE LAND-USE PLANNING EFFORTS

In recent years, water quality management efforts have become increasingly watershed-focused, and the San Diego Bay Copermittees are working to integrate watershed management concepts into programs that can be implemented across jurisdictional boundaries. In general, this effort includes participation in watershed management plans, utilizing regional guidance documents, and increasing public participation. Long-term planning ensures the protection of beneficial uses, preservation of open space lands, and a balance of land uses when planning future development.

Several planning activities have been initiated including the Otay River Watershed Management Plan (ORWMP) and the Otay River Special Area Management Plan (SAMP). Links to pages discussing the ORWMP and the Otay River Watershed SAMP are included on the Project Clean Water website. The sites include a variety of plan-related documents for public review and announcements of public meetings.

The ORWMP has been approved by the Port of San Diego, the County of San Diego, Imperial Beach and the City of San Diego. The City of Chula Vista has yet to determine whether to approve the ORWMP. Therefore, there are no new action items to report for this reporting period. An interim Watershed Council will be established once the ORWMP has been approved.

The County met with the Army Corps of Engineers (ACOE) regarding the draft Otay River Watershed SAMP in spring 2012. The draft SAMP that was submitted to the ACOE in 2010 is currently being revised and will be resubmitted to the ACOE in January 2013. The ACOE may complete the SAMP or may use the draft SAMP and its associated documents to support a regional section 404 permit for the Otay River Watershed. Additional information will be provided in the next WURMP Annual Report.

3.5 UPDATED FIVE-YEAR SAN DIEGO BAY WURMP STRATEGIC PLAN

The San Diego Bay WURMP's Strategic Plan is assessed on an annual basis and may be updated to reflect the current status of watershed activities and any modifications to previous versions of the Strategic Plan. The updated Implementation Plan Schedule of San Diego Bay WURMP is presented in **Table 3-11** and is intended to supersede the previous version presented in the 2008 San Diego Bay WURMP document. It is important to note, that the WURMP activity process and implementation is subject to change in the near future based on a new Municipal Permit. Tentative Order R9-2013-0001 National Pollutant Discharge Elimination System Permit and Waste Discharge Requirements for Discharges from the MS4s Draining the Watershed within the San Diego Region (Tentative Order) has been released by the RWQCB and may result in program changes and activity implementation changes in future fiscal years. The Copermittees are progressing towards making a more efficient and effective watershed program through modifications to the San Diego Bay WURMP and through their involvement in the dialogue between the San Diego Regional Copermittees and the RWQCB regarding permit language.

3.5.1 NEW ACTIVITIES

The San Diego Bay Copermittees added new watershed activities to the San Diego Bay WURMP Strategic Plan during FY 2012 which included three (3) new water quality activities (SDB-074 National City Multi-Family Residential Property Evaluation; SDB-076 Rainwater Harvesting Rebate Pilot Program; SDB-077 Qualcomm Stadium Drop-off Community Clean-up and Recycling Event Sponsorship) and one (1) new education activity (SDB-075 Juneteenth). The activity summary sheets for these activities are presented in [Appendix C](#).

3.5.2 UPDATES TO TMDL IMPLEMENTATION PLAN ACTIVITIES

As noted in the introduction, there are currently five adopted TMDLs in the San Diego Bay WMA: the Chollas Creek Diazinon TMDL, the Chollas Creek Dissolved Metals TMDL, SIYB Dissolved Copper TMDL, the Baby Beach and Shelter Island Shoreline Park Indicator Bacteria TMDL, and the Revised TMDL for Indicator Bacteria, Project I. This section will provide updates to the TMDL implementation plans. An assessment of the efforts to address TMDL compliance during this reporting period is presented in Section 4.2 of this Annual Report.

Chollas Creek Diazinon TMDL, Chollas Creek Dissolved Metals TMDL, and Revised TMDL for Indicator Bacteria, Project I Updates

The seven named dischargers developed an Implementation Plan which presents the strategy, framework, and activities for the first five years under the TMDL using a multi-pollutant approach. The dischargers have been implementing activities as part of their comprehensive Stormwater Programs that will help in meeting TMDL compliance for both the Metals TMDL and the Diazinon TMDL. The five Copermittees, Caltrans and Navy have implemented seventy-one activities (18 water quality, 7 education, 8 monitoring and thirty-eight ongoing agency-wide activities) in FY 2012. Further details on all of the activities the dischargers implemented to address the Chollas Creek Diazinon and Dissolved Metals TMDL are included in tabular format in [Appendix D](#).

While activities implemented to address the Chollas Creek Diazinon TMDL are referenced in the discussion above, the dischargers that are responsible under the Diazinon TMDL must report on specific implementation elements. These updates are included in [Appendices F and H](#), as part of the annual response to monitoring report. However, specific activities referenced as part of the implementation elements discussion in [Appendices F and H](#) are also included in the Metals TMDL dischargers' tables in [Appendix D](#).

In FY 2012, the Responsible Parties for Chollas Creek segment of the Revised TMDL for Indicator Bacteria, Project 1 began the development of a comprehensive load reduction plan (CLRP). This integrated water quality plan addressing multiple pollutants supersedes the implementation plan previously submitted in 2009. The CLRP for Chollas Creek will be submitted in the next reporting period.

SIYB Dissolved Copper TMDL Implementation Plan Activities

The Port of San Diego, SIYB marinas and yacht clubs, and hull cleaners implemented activities as part of the TMDL Implementation Plan and initiated TMDL compliance monitoring during this reporting period. The implementation plan identified how loading reductions may be achieved, such as through conversion of vessels to non-copper-based hull paints, reductions of inputs via hull cleaning, and control of upstream inputs. Therefore, the named parties identified BMPs and other activities that can be best implemented within their given facility/operations in order to collectively achieve compliance with TMDL loading targets for the entire basin. The status of these efforts were provided in the annual report submitted as required by Investigative Order R9-2011-0036 to the RWQCB on March 31, 2012 and is included in [Appendix G](#).

The City of San Diego also conducted urban runoff monitoring for SIYB to identify spatial or temporal patterns in dissolved copper loads. The waste load allocation (WLA) of dissolved copper from the City of San Diego's municipal separate storm sewer system (MS4) via urban runoff is approximately 1% of the total load (based on the model used to develop the TMDL). Because of this relatively small contribution, urban runoff from the City of San Diego MS4 has not been assigned a load reduction in the TMDL. Future activities implemented in response to the results of the monitoring study will be reported as separate activities.

Baby Beach (Dana Point Harbor) and Shelter Island Shoreline Park (San Diego Bay) Indicator Bacteria TMDL Activities

The RWQCB adopted the Baby Beach (Dana Point Harbor) and Shelter Island Shoreline Park (San Diego Bay) Indicator Bacteria TMDL as a Basin Plan Amendment (BPA) on June 11, 2008. The Port of San Diego and the City of San Diego are responsible for monitoring Shelter Island Shoreline Park for Indicator Bacteria (Total Coliform, Fecal Coliform, Enterococci).

During this reporting period, the Port of San Diego initiated an internal work plan to compile and summarize available bacteriological data collected from Shelter Island Shoreline Park, assess the data with respect to listing guidelines established by the State Water Resources Control Board (SWRCB), and identify data gaps. While no load reduction is required under the TMDL, this effort will help to verify that the existing waste load allocation has not been exceeded and identify additional actions that may need to be taken. SISP will remain on the 303(d) List until enough data are collected to support removal from the 303(d) List. Data will be provided to the State Water Resources Control Board during the next Public Solicitation of Water Quality Data and Information for the California Integrated Report of Surface Water Quality Assessment and List of Impaired Waters [Clean Water Act Sections 303(d) and 305(b)].

Table 3-11: Updated Implementation Plan Schedule

San Diego Bay Watershed	Hydrologic Area									Pollutants Addressed								FY 07-08	FY08-09	FY 09-10	FY 10-11	FY 11-12	FY 12-13			
	908.1	908.2	908.3	909.1	909.2	909.3	910.1	910.2	910.3	Bacteria	Dissolved Minerals	Gross Pollutants	Metals	Nutrients	Oil & Grease	Organics	Pesticides							Sediment	Trash	
LOAD REDUCTION AND SOURCE ABATEMENT ACTIVITIES																										
Trash and Debris Related Activities																										
Pet Waste Bag Collaborative Watershed Activity (SDB-001)	X	X	X	X			X	X	X	•				•						I	I	I	I	I	I	
Pet Waste Bag Dispenser Program in County Parks (SDB-001A)		X		X	X	X		X	X	•				•						I	I	I	I	I	I	
Storm Drain Litter Control Techniques Collaborative Watershed Activity (SDB-002a)		X	X	X														•	•	I	Completed					
Storm Drain Litter Control Techniques Collaborative Watershed Activity – El Cajon Boulevard Storm Drain Inlet Retrofit for Chollas Creek Watershed Protection Project (SDB-002b)		X	X	X														•	•	P	P	P	I	I/A	Completed	
Enhanced Street Sweeping Collaborative Watershed Activities (SDB-003)	X	X	X	X			X							•				•	•	I	I	I	No activity sheet-Now in Sections 3 & 4			
Median Sweeping Pilot Study (SDB-003a)		X												•						-	P	I/Completed				
Sweeper Speed Efficiency Study (SDB-003b)		X												•						-	-	P	I	Completed		
San Diego Bay Cleanup Events Collaborative Activity (SDB-004)		X	X	X			X	X											•	I	I	I	I	I	I	
Clean Community Program (SDB-005)			X	X						•		•							•	I	I	I	I	I	I	
Trash Containment Boom Cleaning Agreement with US Navy (SDB-006)		X	X							•									•	I	I/Completed					
Chollas Creek Family Stream Team Initiative Partnership (SDB-051)		X												•					•	P	I	I	I	Completed		
Multi-Family Residential Trash Area Pilot Program (SDB-070)		X																	•	-	-	-	P	I	I	
Targeted Catch Basin Cleaning Pilot Study (SDB-071)		X								•		•	•						•	-	-	-	P	I/A	I/A	
Qualcomm Stadium Drop-off Community Clean-up and Recycling Event Sponsorship (SDB-077)	X	X	X	X				X		•									•	-	-	-	-	P/I	I	
Enhanced Inspection Activities																										
Additional Dry Season Construction Inspections (SDB-007)			X	X															•	•	I	I	I	I	I	I
San Diego Bay Watershed Targeted Facility Inspections – Automotive (SDB-008)		X												•						P	I	I	Completed			
Enhanced Construction Oversight (SDB-009)		X																	•	I	I	I	I	I	I	
Targeted Municipal Facility Inspections (SDB-036)		X								•			•	•						I	Discontinued					
Large Special Event Inspection and Clean-Up (SDB-047)										•										I	I	A	I	I	I	
Outdoor Special Event Oversight (SDB-048)		X																	•	I	I	I	I	I	I	
Rainwater Harvesting Rebate Pilot Program (SDB-076)	X	X	X	X				X		•		•	•	•	•	•	•	•	•	-	-	-	P	I/A	I/A	
Targeted Special Studies																										
Chollas Creek Water Quality Protection & Habitat Enhancement Project (SDB-011)		X								•	•	•	•	•	•	•	•	•		I	Completed					
Municipal Rain Barrel Installation and Downspout Disconnects (SDB-012)	X	X	X	X				X		•				•	•				•	P	I	I/A	Completed			

San Diego Bay Watershed	Hydrologic Area									Pollutants Addressed								FY 07-08	FY08-09	FY 09-10	FY 10-11	FY 11-12	FY 12-13
	908.1	908.2	908.3	909.1	909.2	909.3	910.1	910.2	910.3	Bacteria	Dissolved Minerals	Gross Pollutants	Metals	Nutrients	Oil & Grease	Organics	Pesticides						

Targeted Special Studies

Dalbergia "Green Mall" Infiltration Retrofit Project (SDB-013)		X								•			•							P	P	P	Cancelled		
Southcrest Park "Green Lot" Infiltration Project (SDB-014)		X								•			•							P	P	P	P	P	P
Memorial Park "Green Lot" Infiltration Retrofit Activity (SDB-015)		X								•			•							P	P	P	I	I/A	A
43 rd and Logan Biofiltration Project for Chollas Creek Watershed Protection (SDB-037)		X								•			•							P	P	P	I	I	I
Maple Canyon Water Quality Improvement (SDB-049)		X								•								•	•	P	P	P	P	P	P
Chollas Creek Runoff Reduction and Groundwater Recharge Project (SDB-050)		X											•							P	I	A	I/A	I/A	A
Treatment Control BMP Pilot Projects (SDB-034)		X											•							P	I	A	Completed		
Beta Alley Green Street Filtration (SDB-058)		X								•	•	•	•	•	•	•	•	•	•	-	-	P	P	P	P

Other Water Quality Activities

Shelter Island Yacht Basin Dissolved Copper TMDL (SDB-016)	X												•							Activity Summary sheets will no longer be submitted for TMDL efforts - will now be discussed in Sections 3 and 4.					
Chollas - Switzer - Paleta Creek Mouths TMDL (SDB-017)	X	X											•		•										
Chollas Creek Diazinon TMDL (SDB-018)	X	X															•								
Chollas Creek Dissolved Metals TMDL (SDB-019)		X											•												
Update Recycling and Solid Waste Planning Manual (SDB-035)				X				X	X	•			•						•	P	I	I	I	I	I
City of San Diego Strategic Plan Implementation (SDB-038)	X	X	X	X				X		•	•	•	•	•	•	•	•	•	•	I	I	I	I	No longer included in this report	
Land Acquisitions – San Diego Bay Watershed (SDB-046)				X	X	X		X		•	•	•	•	•	•	•	•	•	•	I	I	I	I	I	I
Palm Avenue Stormwater Diverter (SDB-052)							X			•			•	•			•	•		P	I	I	I	I	I
Stormwater Quality Master Plans for Special Drainage Fee Areas (SDB-056)		X			X	X		X	X	•	•	•	•	•	•	•	•	•	•	P	P	I	I	I	I
Commercial BMP Self Certification Pilot Program (SDB-059)		X								•			•	•			•	•		-	-	P	I	No longer included in this report	
Source Control of Copper Water Pollutants, Senate Bill 346: Motor Vehicle Brake Friction Materials (SDB-060)	X	X	X	X	X	X	X	X	X				•							-	P	P	P	No longer included in this report	
SDBay Vista Wildlife Reserve Restoration and Enhancement Project (SDB-061)				X				X		•							•	•		-	P	P	P	No longer included in this report	
Residential Rain Barrel Subsidies & Distributions (SDB-062)		X			X	X		X	X	•	•	•	•	•	•	•	•	•	•	-	-	P	I	I	I
Municipal Best Management Practices/Irrigation/Xeriscape (SDB-072)		X								•			•	•		•	•	•					I	I	I
National City Multi-Family Residential Property Evaluation (SDB-074)			X	X						•	•	•	•	•	•	•	•	•	•	-	-	-	-	P/I	I

ADDITIONAL MONITORING AND SOURCE IDENTIFICATION ACTIVITIES

Enhanced Dry Weather Monitoring Program (SDB-020)		X								•	•	•	•	•	•	•	•	•	•	I	I	I	I	I	I
Coordinated Dry Weather Monitoring Programs (SDB-021)	X	X								•			•	•		•	•	•	•	I	I	I	I	I	I
La Mesa Additional Water Quality Monitoring Program (SDB-022)		X								•	•	•	•	•	•	•	•	•		I	I	A	A	No longer included in this report	
BMP Effectiveness Monitoring Program (SDB-023)		X										•	•		•			•		I	I	I	I	No longer included in this report	

San Diego Bay Watershed	Hydrologic Area									Pollutants Addressed								FY 07-08	FY08-09	FY 09-10	FY 10-11	FY 11-12	FY 12-13
	908.1	908.2	908.3	909.1	909.2	909.3	910.1	910.2	910.3	Bacteria	Dissolved Minerals	Gross Pollutants	Metals	Nutrients	Oil & Grease	Organics	Pesticides						

ADDITIONAL MONITORING AND SOURCE IDENTIFICATION ACTIVITIES

Dry Weather Aerial Deposition Study – Phase I (SDB-024a)		X																		I	Completed				
Dry Weather Aerial Deposition Study – Phase II (SDB-024b)		X																		P	I/Completed				
Dry Weather Aerial Deposition Study – Phase III (SDB-024c)		X																		P	I/Completed				
Regional Harbor Monitoring Program (SDB-025)	X	X	X	X				X												I	I	I	I	I	I/A
Chollas Creek Design Storm Study and Sediment and Bacteria Relationship Source Study (SDB-026)		X																		I	Completed				
Chollas Creek Beneficial Use Designation Attainability Study and Mouth of Chollas Creek Bacteria Source ID Study (SDB-027)		X																		I	I/Completed				
Shelter Island TMDL Urban Runoff Monitoring Study (SDB-053)	X																			P	I/No longer included as an activity sheet - information can be found in Sections 2, 3, and 4				
Switzer Creek Pesticide Source Monitoring Study (SDB-054)		X																		P	I/Completed				
Water Quality Monitoring at Additional Mass Loading Stations (SDB-057)					X	X			X											P	I/Completed				
B Street/Broadway Piers, Downtown Anchorage and Mouth of Switzer Creek Characterization Study (SDB-063)		X																		-	-	P/I	Completed		
Chollas and Paleta Creeks Characterization Study (SDB-064)		X	X																	-	-	P/I	Completed		
Chollas Creek Copper, Lead And Zinc Water-Effects Ratio Study (SDB-065)		X																		-	-	P/I	I	Completed	

Educational Activities

La Mesa Business Inspection Supplemental Watershed Questionnaire (SDB-010)			X	X																	I	I	A	A	Complete - no longer included in this report	
Storm Drain Stenciling (SDB-028)				X				X	X												P	I/A	I/A	Discontinued		
Public Service Announcements: Karma/Karma Second Chance (SDB-029)	X	X	X	X				X	X												P/I	I	No longer reporting on this activity			
Outdoor Transit Shelters and Billboards Advertisements (SDB-030)	X	X	X	X				X	X												P/I	I/Completed				
Mobile Advertising (SDB-031)	X	X	X	X				X	X												P/I	I/A	Discontinued			
Community Based Social Marketing Outreach Pilot Project—Chollas Creek Community (SDB-032)	X	X	X	X				X	X												P	I	I	I	No longer reporting on this activity	
City of Coronado Fire Department Open House (SDB-033)							X														I	I	No longer reporting on this activity			
Provide Homeowner's Association Education About Pet Waste Disposal (SDB-039)				X				X	X												P	I	I	I	I	I
Stormwater Education Booth at Annual Pet Festival & Doggy Dash (SDB-040)				X				X	X												P	I	I	I/A	I/A	I/A
Fats, Oils, and Grease (FOG) Program (SDB-041)				X				X	X												P	I	A	I	I	I
La Mesa Park Kiosk (SDB-042)		X																			P	I	A	I	No longer included in this report	

San Diego Bay Watershed	Hydrologic Area									Pollutants Addressed									FY 07-08	FY08-09	FY 09-10	FY 10-11	FY 11-12	FY 12-13		
	908.1	908.2	908.3	909.1	909.2	909.3	910.1	910.2	910.3	Bacteria	Dissolved Minerals	Gross Pollutants	Metals	Nutrients	Oil & Grease	Organics	Pesticides	Sediment							Trash	
Educational Activities																										
LID and Watershed Planning Education for Community Planning and Sponsor Groups (SDB-043)				X	X	X			X	•	•	•	•	•	•	•	•	•	•	•	P	I/Completed				
ILACSD Elementary School Watershed Presentations (SDB-044)		X	X	X				X		•	•	•	•	•	•	•	•	•	•	•	P	I/Completed				
ILACSD High School Watershed Presentations (SDB-045)		X	X	X				X		•	•	•	•	•	•	•	•	•	•	•	-	P	I	I/A	I/A	I/A
San Diego Bay Watershed Brochure (SDB-055)	X	X	X	X				X	X	•	•	•	•	•	•	•	•	•	•	•	-	P	P	P	P/I	I
Focused Outreach to Equestrian Community (SDB-066)				X	X	X		X	X	•				•				•		-	P	I	I	I	I	
Intergenerational Games (SDB-067)		X		X						•			•		•		•		•	I	I	I	I	No longer included in this report		
Stream Team Stewards (SDB-068)		X								•	•	•	•	•	•	•	•	•	•	-	I	I/Completed				
Walk the Watershed Event – Otay HU (SDB-073)								X		•		•	•		•		•	•	•	-	-	-	P	I	Completed	
Juneteenth (SDB-075)		X								•					•		•		•	-	-	-		P/I/A	I/A	

P=Planning Phase; I=Implementation Phase; A=Assessment Phase

4 EFFECTIVENESS ASSESSMENT

The following section presents the effectiveness assessment of the WURMP by the San Diego Bay Copermittees as required by Section J.1.b. of the Municipal Permit. An effectiveness assessment is an integral part of WURMP implementation that enhances program planning by: providing feedback on activities and strategies; and identifying program areas that may need improvement. The activity summary sheets presented in [Appendix E](#) include individual effectiveness assessment summaries for each water quality and education activity as required in the Permit, I.2.a.(1). This section evaluates progress of the San Diego Bay WURMP toward meeting Target Outcome Levels 1 through 6 and summarizes the effectiveness of WURMP Activities.

4.1 ASSESSMENT OF OVERALL WURMP EFFECTIVENESS

Effective implementation of the WURMP is dependent on the establishment of comprehensive and program-wide goals as well as objectives and tasks. Programmatic assessment provides mechanisms to determine whether the Copermittees are compliant with the Permit and are continuing to progress towards the long-term goal of abating pollutant sources and reducing the discharge of pollutants from the MS4.

The San Diego Bay Copermittees have also included some data and information from jurisdictional program activities that address the HPWQPs in the watershed. The Copermittees are presenting this jurisdictional information to demonstrate the overall activities conducted in the watershed's hydrologic areas to address HPWQPs and provide a more holistic evaluation of the activities the Copermittees are implementing that address HPWQPs. The jurisdictional information presented here is not intended to be used for compliance with watershed activity requirements of the Municipal Permit. However, reporting jurisdictional and watershed urban runoff management activities on a watershed basis will develop a nexus between Copermittee activities and potential pollutant sources and urban runoff water quality improvements.

Overall, the San Diego Bay Copermittees were effective in implementing the WURMP during FY 2012 and went above and beyond compliance with the watershed activity implementation component of the Permit. During the reporting period the San Diego Bay Copermittees implemented eight (8) watershed education activities, 25 watershed water quality activities (in planning or implementation phases), and three (3) monitoring or source identification studies.

Level 1 Effectiveness Assessment

A Level 1 assessment addresses the fundamental requirements prescribed in the Permit, including programs and activities that are intended to benefit water quality. [Table 4-1](#) lists how the San Diego Bay Copermittees have met Level 1 objectives and maintained compliance with the Permit requirements.

Table 4-1: Permit Component Compliance (Level 1 Outcome)

Targeted Outcome	Confirmation	Report Section/Appendix
Update any watershed maps.	No changes	2008 WURMP
Update assessments and analyses of the WMA's current and past applicable water quality data, reports, analyses, and other information, including identification of the watershed's water quality problems and high priority water quality problem(s) during the reporting period.	Completed	2
Identify the likely sources, pollutant discharges, and/or other factors causing the high priority water quality problems within the watershed.	Completed	2.2
Identify and describe the Watershed Water Quality Activities implemented by Copermittees during the reporting period.	Completed	3.1
Update list of potential Watershed Water Quality Activities.	Completed	3.5
Identify and describe the Watershed Education Activities implemented by Copermittees during the reporting period.	Completed	3.1, 3.2 and Appendices C and I
Update list of potential Watershed Education Activities.	Completed	3.5
Describe the public participation mechanisms used during the reporting period.	Completed	3.3 and Appendix I
A description of Copermittee collaboration efforts including meeting as the San Diego Bay WMA WURMP Workgroup.	Completed	3.3.1
Describe the efforts implemented to encourage collaborative, watershed-based, land use planning.	Completed	3.4
Describe all TMDL activities implemented for each approved TMDL in the watershed. The description shall include: any additional source identification information; the number, type, location, and other relevant information about BMP implementation; updates in the BMP implementation prioritization and schedule; an assessment of the effectiveness of the BMP Implementation Plan; and a discussion of the progress to date, incorporating the results of the effectiveness assessment, compliance monitoring, and an evaluation of additional efforts needed to date.	Completed	3.5.2 and 4.2 and Appendices C, D, F, G, and H

As shown in **Table 4-1**, the San Diego Bay WURMP Copermittees were in compliance with all Level 1 WURMP related Municipal Permit requirements during FY 2012.

Level 2 Outcome – Changes in Knowledge and Awareness; Level 3 – Outcome – Changes in Behavior or BMP Implementation; Level 4 Outcome – Load Reduction/Source Abatement

The San Diego Bay Copermittees implemented many activities that resulted in Levels 2, 3, and 4 effectiveness assessments such as: the Watershed Copermittees collectively conducted over 490 education and public participation events/mechanisms reaching over an estimated 3 million individuals (Level 2); conducted enhanced inspections of facilities which demonstrated positive changes in behavior (Level 3); and conducted clean-up events resulting in the removal of over 238 tons of debris from the WMA. Additionally, the San Diego Bay Copermittees' jurisdictional

programs resulted in the removal of approximately 4,799 tons of debris from street sweeping activities and approximately 3,042 tons of debris from MS4 cleaning during FY 2012. This resulted in load reductions for many of the HPWQPs (i.e. sediment, trash, gross pollutants, bacteria, metals, etc.). Levels, 2, 3, and 4 are best discussed on the watershed activity level and are included in Section 4.2.1 below and the individual Activity Sheets included in [Appendix C](#).

Level 5 Outcome – Changes in Urban Runoff and Discharge Quality

The results from the FY 2012 *San Diego County Municipal Copermittees Urban Runoff Receiving Waters and Monitoring Report*, as discussed in Section 2, indicate that urban runoff water quality remained similar to conditions reported in the 2008 WURMP Document. Changes in urban runoff and discharge quality are difficult to determine on an annual basis due to the variability of water quality data. However, levels of organophosphorus pesticides (Diazinon, Chlorpyrifos, and Malathion) continue to be below their respective benchmarks. The continued downward trend of Diazinon concentrations in stormwater is a positive indication that the San Diego Bay Copermittees' current education and outreach efforts to address Diazinon are adequate. The San Diego Bay Copermittees believe that overall, the concentration of Diazinon will continue to decrease. Even though Diazinon was banned from sales, it is possible that there are still unused products containing Diazinon being stored and used by residents and businesses. As Diazinon public supply and use is exhausted, it is possible to see transient, isolated incidents from stored products being used. Diazinon and other pesticides will continue to be monitored and sampled to determine overall statistical trends.

Level 6 Outcome – Changes in Receiving Water Quality

A Level 6 assessment involves direct measurement of overall water quality in receiving water bodies and evaluates changes in water quality with respect to established regulatory benchmarks, biological integrity, beneficial use, and protection. Validating trends in receiving water quality improvement or degradation generally requires an adequate sample size, so the San Diego Regional Copermittees are continuing to work together to collect water quality data to determine improvements and/or degradations when appropriate. The San Diego Regional Copermittees conducted a Long-Term Effectiveness Assessment (LTEA) and submitted it to the Regional Board in June 2011. As part of the LTEA analysis there were some receiving water trends (based on available data) that were identified, where applicable and appropriate, for the San Diego Bay Watershed Management Area ([Table 4-2](#)). While there is no direct linkage to Copermittee watershed activities at this time, the trends are important to note and more detailed information can be found in Attachment A, Section 9 of the LTEA (MOE, Weston, LWA June 2011). Additionally, trends were identified in the FY 2012 Regional Monitoring Report (Weston, January 2013). The trends are based on all of the available data through the end of the 2011-2012 monitoring season and are summarized beside the LTEA trends in [Table 4-2](#).

Table 4-2: Constituent Trends as Identified in the 2005-2010 LTEA (June 2011) and Regional Monitoring Report (January 2013)

Location	Increasing Trends by Priority Constituent		Decreasing Trends by Priority Constituent	
	LTEA	Regional Monitoring	LTEA	Regional Monitoring
CC-SD8(1) MLS Pueblo San Diego	<ul style="list-style-type: none"> Total Coliforms Nitrite Total Kjeldahl Nitrogen Turbidity Total Copper Total Zinc 	<ul style="list-style-type: none"> Fecal Coliform Total Coliform Nitrite as N Total Kjeldahl Nitrogen Turbidity Total Copper Total Zinc 	<ul style="list-style-type: none"> Hyalella Azteca acute survival Malathion 	<ul style="list-style-type: none"> Hyalella Azteca acute survival
Sweetwater River MLS	<ul style="list-style-type: none"> Dissolved Phosphorous Total Arsenic 	<ul style="list-style-type: none"> No trends identified 	<ul style="list-style-type: none"> Total Lead 	<ul style="list-style-type: none"> Total Lead
Sweetwater River TWAS-1	<ul style="list-style-type: none"> No trends identified 	<ul style="list-style-type: none"> No trends identified 	<ul style="list-style-type: none"> No trends identified 	<ul style="list-style-type: none"> No trends identified
Otay Valley TWAS-1	<ul style="list-style-type: none"> No trends identified 	<ul style="list-style-type: none"> No trends identified 	<ul style="list-style-type: none"> No trends identified 	<ul style="list-style-type: none"> No trends identified

4.2 INTEGRATED WURMP ACTIVITIES ASSESSMENT

In accordance with the 2008 San Diego Bay WURMP, Copermittees selected activities and associated effectiveness assessment mechanisms to implement in their individual jurisdictions while working within the collective goals of the WURMP. The activities and their assessments vary depending on the identified targeted outcomes applicable to each activity, the pollutant(s), pollutant source(s) addressed, and the HA in which it is located. The goals and objectives of the individual activities ensure individual accountability, provide direction, and intended to provide meaningful assessment. In this section, the San Diego Bay Copermittees assess whether they were able to maximize the effectiveness of these individual activities on a watershed level.

Each activity summary sheet in [Appendix C](#) of this report identifies specific targeted outcomes (Levels 1-6) that will be assessed and the measures and methods that will be used to gauge activity effectiveness. Each watershed activity is unique and its impacts on water quality are equally distinctive. As a result, measurable outcomes do not always follow a linear path (assessing effectiveness at each of the six outcome levels). For example, a capital project may result in pollutant load reductions (Level 4), but may not have any bearing on changes in the awareness or behavior of a target population (Levels 2 and 3). It is also unlikely that the implementation of an individual watershed activity would be measurable at levels 5 or 6. Levels 5 and 6 outcomes are typically measurable through cumulative assessments.

Tables 4-3 through **4-9** summarize the assessments of the water quality and education activities on a hydrologic area basis and provide a snapshot of the overall effectiveness of the watershed activities. This evaluation also reveals whether the San Diego Bay Copermittee efforts addressed the HPWQPs and whether the activities targeted potential pollutant sources in each HA during this reporting period. Evaluation at an HA level also allows an assessment of the effectiveness of the San Diego Bay Copermittees' collective efforts for activities that were implemented across several HAs. In some cases these activities provided solutions that address HPWQPs common to multiple HAs and potential sources of pollutants of concern.

In addition to the WURMP activities included in the tables, the San Diego Bay WURMP Copermittees are presenting the JURMP activities that are related to the HPWQPs in each hydrologic area. It is important to note that not all JURMP activities are included in this presentation. These activities are presented in the tables below based on hydrologic area of implementation. The San Diego Bay Copermittees recognize that a holistic approach to watershed assessment allows for improvement in determining the sources of priority pollutants and how to address them through both watershed and jurisdictional activities. For complete assessment of JURMP activities, the reader may review each WURMP Copermittees' JURMP Annual Reports.

Some watershed activities implemented did not have all of the identified assessment mechanisms completed during this reporting period and effectiveness has not yet been determined. Though considerable resources may be directed to these activities, effectiveness assessments are not yet available for a number of reasons, such as delays in planning/development of an activity or the activity is still in progress. Furthermore, some activities do not lend well to assessment through surveys, including public booths at events. Please refer to the activity summary sheets in [Appendix C](#) for detailed analysis of progress to date for these activities.

Part of the basis of the assessment is to determine how effectively activities are addressing the HPWQPs in the watershed. For areas where no HPWQPs are currently identified, watershed activity development and implementation is not a high priority and resources may not be focused in these areas. There are two HAs (the Upper Sweetwater HA (909.3) and the Dulzura HA (910.3)) where there are no HPWQPs identified at this time and accordingly no assessment has been conducted. While there were activities conducted in these HAs as noted in Section 3, assessments of the two HAs are not included in the tables below.

4.2.1 PUEBLO SAN DIEGO HU (908)

Effectiveness Assessment for the Pueblo San Diego HU is presented by HA in the sections below. Applicable TMDL effectiveness assessments are described in Section 4.3.

4.2.1.1 Point Loma HA (908.1)

The Point Loma HA is heavily urbanized and is not characterized by any Hydrologic Subareas (HSAs). The HPWQPs in the Point Loma HA are bacteria, gross pollutants, metals, oil and grease, and pesticides. Activities were implemented that effectively targeted a variety of sources of many of the identified high priority pollutants. Potential pollutant sources in the Point Loma HA include those related to residential areas, streets and roadways, or commercial business, schools, and public facilities. As noted in Section 3, Copermittees implemented seven (7) distinct watershed water quality, monitoring, and education activities in the HA along with other educational and public participation activities, inspections, street sweeping, and MS4 cleaning. Reportable effectiveness measures have been identified for the four (4) watershed activities, and jurisdictional inspections, sweeping, and catch basin activities ([Table 4-3](#)).

In addition, there are two adopted TMDLs within the Point Loma HA. These TMDLs include:

- SIYB Dissolved Copper TMDL
- Baby Beach and Shelter Island Shoreline Park Indicator Bacteria TMDL

A brief summary of the current status and the assessment of the Implementation Plans for these TMDLs are included in Section 4.3.

Table 4-3: Summary of Implemented Activities with Effectiveness Assessment for FY 2012 – 908.1 Point Loma Hydrologic Area (HPWQPs: Bacteria, Gross Pollutants, Metals, Oil and Grease, and Pesticides)

Activity	Type	Priority Problems Addressed	Level Outcomes	Pollutant Load Reduction, Source Abatement or Other Benefit Derived
Watershed Activities				
SDB-001 Pet Waste Bag Programs*	Water Quality	Bacteria	Levels 3 and 4	Approximately 730,068 pet waste bags dispensed
SDB-004 Collaborative Clean-Up Activities*	Water Quality	Bacteria	Levels 2, 3 and 4	Approximately 5,957 individual participated in clean-up activities and an estimated 238 tons of trash was collected.
SDB-076 Rainwater Harvesting Rebate Pilot Program**	Water Quality and Education	Bacteria, Trash, Pesticides, Gross Pollutants, and Sediment	Level 1 and 3	15 participants were rebated for a total of 58 rain barrels. Participants were provided a rebate of 0.50 cents per gallon, up to \$200 per address, for water capture devices up to 400 gallons that are purchased and installed.
SDB-077 Qualcomm Stadium Drop-off Community Clean-up and Recycling Event Sponsorship**	Water Quality	Bacteria, Gross Pollutants, Metals, Oil and Grease, Pesticides	Level 3 and 4	Collected a total of 112,000 lbs. of metals, appliances, junk furniture, and mattresses. Disposed of 68,000 lbs. and recycled 44,000 lbs.
Presentations*	Education	Bacteria, Gross Pollutants, Metals, Oil and Grease, Pesticides	Level 1 and 2	13 presentations reaching over an estimated 697 individuals in the San Diego Bay WMA
Print Media*	Education	Bacteria, Gross Pollutants, Metals, Oil and Grease, Pesticides	Level 1 and 2	24 Print Media methods utilized with the ability to reach over an estimated 179,649 individuals in the San Diego Bay WMA
School Programs and Outreach*	Education	Bacteria, Gross Pollutants, Metals, Oil and Grease, Pesticides	Level 1 and 2	134 school program events reaching over 21,000 school-aged children
Municipal Staff Training*	Education	Bacteria, Gross Pollutants, Metals, Oil and Grease, Pesticides	Level 1 and 2	22 trainings held and 640 municipal staff trained

Table 4-3: Summary of Implemented Activities with Effectiveness Assessment for FY 2012 – 908.1 Point Loma Hydrologic Area (HPWQPs: Bacteria, Gross Pollutants, Metals, Oil and Grease, and Pesticides)

Activity	Type	Priority Problems Addressed	Level Outcomes	Pollutant Load Reduction, Source Abatement or Other Benefit Derived
Jurisdictional Activities (No WURMP credit)				
JURMP Industrial/Commercial Inspections	Water Quality	Bacteria	Levels 1, 3 and 4	Sources categorized as likely to produce bacteria inventoried under the JURMP program during FY 2012 included animal facilities, food establishments, and nurseries. Of the total 189 bacteria sources inventoried, 92% are food establishments. Approximately 41% of the food establishments were inspected, and overall 41% of the likely bacteria sources inventoried were inspected.
JURMP Industrial/Commercial Inspections	Water Quality	Metals	Levels 1, 3 and 4	Sources categorized as likely to produce metals inventoried under the JURMP program during FY 2012 included automotive, equipment, general industrial, institutional, marinas, metal, nursery, stone, and storage and warehousing. Of the total 188 metals sources inventoried, 32% are storage and warehousing facilities and 32% are automotive facilities. Approximately 3% of the storage and warehousing facilities were inspected and 46% of automotive facilities. Overall 33% of the likely metals sources inventoried were inspected.
JURMP Industrial/Commercial Inspections	Water Quality	Pesticides	Levels 1, 3 and 4	Sources categorized as likely to produce pesticides inventoried under the JURMP program during FY 2012 included animal and nursery facilities. Of the total 15 pesticide sources inventoried, 87% are animal facilities. Approximately 46% of the animal facilities were inspected, and overall 40% of the likely pesticide sources inventoried were inspected.
JURMP Industrial/Commercial	Water Quality	Gross Pollutants	Levels 1, 3 and 4	Sources categorized as likely to produce gross pollutants inventoried under the JURMP program during FY 2012 included automotive, contractors, and food establishments. Of the total 332 gross pollutant sources inventoried 31% were inspected.
JURMP Industrial/Commercial Inspections & Construction Site & Municipal Facility Inspections	Water Quality	Oil and Grease	Levels 1, 3 and 4	Sources categorized as likely to produce oil and grease inventoried under the JURMP program during FY 2012 included automotive, food establishments, equipment, general industrial, marina, metal, stone, and storage and warehousing. Of the total 374 oil and grease sources inventoried, 49% were inspected.
JURMP MS4 Cleaning & Street Sweeping	Water Quality	Bacteria, Metals, Gross Pollutants	Levels 1 and 4	Street sweeping and MS4 cleaning are other BMPs implemented under the JURMP that may address bacteria, metal, sediment, and trash sources. During FY 2012, 118.75 tons of material was removed from streets via street sweeping and 4.99 tons of material was removed from the MS4 via cleaning activities, addressing catch basins, pipes, brow ditches, and open channels.

**This activity was implemented on a watershed basis and cannot be divided by HA at this time. Therefore the information and data presented is for the WMA but the activity impacted this HA.*

***This activity was implemented throughout the City of San Diego’s jurisdiction. Therefore, the data and information presented is for the City of San Diego, but the activity impacted this HA.*

4.2.1.2 San Diego Mesa HA (908.2)

The San Diego Mesa HA is a heavily urbanized watershed, and includes two Hydrologic Subareas: Lindbergh (908.21) and Chollas Creek HSA (908.22). The HPWQPs in the San Diego Mesa HA are bacteria, metals, sediment, trash, and pesticides. Prominent land uses which may contribute to high priority water quality problems in the HA include residential, streets and roadways, and commercial/industrial businesses. Transportation land use comprises approximately 28% of the total land use and residential land uses comprise approximately 41% of the total land use in the HA. As described in Section 3, Copermittees implemented 21 distinct watershed water quality, monitoring, and education activities along with other education and public participation activities, inspections, street sweeping and MS4 cleaning in this HA. Reportable effectiveness measures have been identified for the six (6) watershed activities and the inspections, sweeping and catch basin activities conducted at the jurisdictional level at this time ([Table 4-4](#)). In addition, there are three adopted TMDLS within the Chollas Creek HSA (908.22):

- Chollas Creek Diazinon TMDL
- Chollas Creek Dissolved Metals TMDL
- Revised TMDL for Indicator Bacteria, Project I

A brief summary of the current status and the assessment of the Implementation Plans for the three TMDLs are presented in Section 4.3.

Table 4-4: Summary of Implemented Activities with Effectiveness Assessment for FY 2012 – 908.2 San Diego Mesa Hydrologic Area (HPWQPs: Bacteria, Metals, Sediment, Trash, and Pesticides)

Activity	Type	Priority Problems Addressed	Level Outcomes	Pollutant Load Reduction, Source Abatement or Other Benefit Derived
Watershed Activities				
SDB-001 Pet Waste Bag Programs*	Water Quality	Bacteria	Levels 3 and 4	<ul style="list-style-type: none"> Approximately 730,068 pet waste bags dispensed Airport Authority estimated 250 lbs. removed in their jurisdiction
SDB-002b El Cajon Boulevard Storm Drain Inlet Retrofit for Chollas Creek Watershed Protection Project	Water Quality	Bacteria, Oil and Grease, Trash, and Sediment	Level 1 and 4	<p>Drain inserts are moderately effective at reducing discharge of trash to receiving waters when loadings are compatible with the maintenance frequency. Excessive flow bypasses is the main cause of reduced performance.</p> <p>Results showed that these BMPs lack the capacity needed to quantify the level of maintenance desired by City's O&M Department. Due to large drainage areas, typical of street drainage, the pilot showed maintenance required in excess of 4 times per year.</p>
SDB-004 Collaborative Clean-Up Activities*	Water Quality	Bacteria	Levels 2, 3 and 4	Approximately 5,957 individual participated in clean-up activities and an estimated 238 tons of trash was collected.
SDB-009 Enhanced Construction Oversight	Water Quality	Sediment	Levels 1, 3, and 4	Airport Authority staff attended 360 construction project meetings relating to 15 construction projects and conducted a total of 267 construction inspections. (154 more than required by the Municipal Permit). Issues/concerns regarding erosion and sediment control were only identified 9.4% of the time. The Airport Authority was able to estimate a sediment pollutant load reduction as approximately 354.2 tons.
SDB-045 I Love a Clean San Diego School Watershed Presentations	Education	Bacteria, Pesticides, Sediment, and Trash	Level 2	Watershed education and pollution prevention information was presented to 111 school aged students in the HA. Results from the pre and post- tests showed an increase in knowledge after the presentations.
SDB-062 Residential Rain Barrel Subsidies & Distributions**	Water Quality and Education	Bacteria, Metals, Sediment, Trash, and Pesticides	Level 1 and 3	The County surveyed 50 customers who purchased rain barrels in 2010 for customer satisfaction and to check to be sure the rain barrels had been installed and maintained.

Table 4-4: Summary of Implemented Activities with Effectiveness Assessment for FY 2012 – 908.2 San Diego Mesa Hydrologic Area (HPWQPs: Bacteria, Metals, Sediment, Trash, and Pesticides)

Activity	Type	Priority Problems Addressed	Level Outcomes	Pollutant Load Reduction, Source Abatement or Other Benefit Derived
SDB-071 Targeted Catch Basin Cleaning Pilot	Water Quality	Bacteria, Trash, Metals, Nutrients, Trash and Sediment	Level 1 and 4	<p>The costs and benefits associated with methods, schedules, or targeted locations in relation to sediment and pollutant removal would be better quantified with ongoing monitoring. Other data collection for specific analyses will require a targeted monitoring program.</p> <p>Data Recorded:</p> <ol style="list-style-type: none"> 1. Volume Removed <ul style="list-style-type: none"> • Nitrogen - 100g • Phosphorus - 44g • Copper - 6.25g • Lead - 2.42g • Zinc - 20.47g 2. Location <ul style="list-style-type: none"> • Downtown 3. Sediment Sample Analysis: <ul style="list-style-type: none"> • Sediment – 70% • Trash – 20% • Organics – 10% of material removed
SDB-075 Juneteenth	Water Quality and Education	Bacteria, Oil & Grease, Pesticides, and Trash	Level 1 and 3	<ul style="list-style-type: none"> • Number of Surveys administered in FY 2012 (Outcome Level 1): 102 • Percentage of individuals surveyed that knew stormwater is not treated (Outcome Level 2): 45% • Percentage of individuals surveyed who feel that litter contributes to pollution at least a moderate amount (Outcome Level 2): 92% • Percentage of individuals surveyed who reported that they feel a very strong or strong obligation to not litter (Outcome Level 2): 81% • Percentage of individuals surveyed who reported that they pick up litter they see in their community and throw it in the trash at least sometimes (Outcome Level 3): 87%
SDB-076 Rainwater Harvesting Rebate Pilot Program**	Water Quality and Education	Bacteria, Metals, Sediment, Trash, and Pesticides	Level 1 and 3	15 participants were rebated for a total of 58 rain barrels. Participants were provided a rebate of 0.50 cents per gallon, up to \$200 per address, for water capture devices up to 400 gallons that are purchased and installed.

Table 4-4: Summary of Implemented Activities with Effectiveness Assessment for FY 2012 – 908.2 San Diego Mesa Hydrologic Area (HPWQPs: Bacteria, Metals, Sediment, Trash, and Pesticides)

Activity	Type	Priority Problems Addressed	Level Outcomes	Pollutant Load Reduction, Source Abatement or Other Benefit Derived
SDB-077 Qualcomm Stadium Drop-off Community Clean-up and Recycling Event Sponsorship**	Water Quality	Bacteria, Metals, Trash	Level 3 and 4	Collected a total of 112,000 lbs. of metals, appliances, junk furniture, and mattresses. Disposed of 68,000 lbs. and recycled 44,000 lbs.
Presentations*	Education	Bacteria, Metals, Pesticides, Sediment and Trash	Level 1 and 2	13 presentations reaching over an estimated 697 individuals in the San Diego Bay WMA
Print Media*	Education	Bacteria, Metals, Pesticides, Sediment and Trash	Level 1 and 2	24 Print Media methods utilized with the ability to reach over an estimated 179,649 individuals in the San Diego Bay WMA
School Programs and Outreach*	Education	Bacteria, Metals, Pesticides, Sediment and Trash	Level 1 and 2	134 school program events reaching over 21,000 school-aged children
Municipal Training* Staff	Education	Bacteria, Metals, Pesticides, Sediment and Trash	Level 1 and 2	22 trainings held and 640 municipal staff trained
Jurisdictional Activities (No WURMP Credit)				
JURMP Industrial/Commercial Inspections	Water Quality	Bacteria	Levels 1, 3 and 4	Sources categorized as likely to produce bacteria inventoried under the JURMP program during FY 2012 included agriculture, animal facilities, restaurants, and nurseries. Of the total 2,417 bacteria sources inventoried, 96% are food establishments. Approximately 38% of the restaurants were inspected, and overall 38% of the likely bacteria sources inventoried were inspected.

Table 4-4: Summary of Implemented Activities with Effectiveness Assessment for FY 2012 – 908.2 San Diego Mesa Hydrologic Area (HPWQPs: Bacteria, Metals, Sediment, Trash, and Pesticides)

Activity	Type	Priority Problems Addressed	Level Outcomes	Pollutant Load Reduction, Source Abatement or Other Benefit Derived
JURMP Industrial/Commercial Inspections	Water Quality	Metals	Levels 1, 3 and 4	Sources categorized as likely to produce metals inventoried under the JURMP program during FY 2012 included agriculture, automotive, equipment, general industrial, institutional, manufacturing, metal, nursery, stone, and storage and warehousing. Of the total 1,465 metals sources inventoried, 60% automotive facilities and 14% are storage and warehousing facilities. Approximately 34% of the storage and warehousing facilities were inspected and 53% of automotive facilities. Overall 52% of the likely metals sources inventoried were inspected.
JURMP Industrial/Commercial Inspections	Water Quality	Pesticides	Levels 1, 3 and 4	Sources categorized as likely to produce pesticides inventoried under the JURMP program during FY 2012 included agriculture, animal, and nursery facilities. Of the total 101 pesticide sources inventoried, 81% are animal facilities. Approximately 34% of the animal facilities were inspected, and overall 36% of the likely pesticide sources inventoried were inspected.
JURMP Industrial/Commercial and Construction Site Inspections	Water Quality	Sediments	Levels 1, 3 and 4	Sources categorized as likely to produce sediment inventoried under the JURMP program during FY 2012 included agriculture, animal facilities, contractors, general retail, health services, nurseries, construction sites, and municipal facilities. Of the total 768 sediment sources inventoried (excluding construction sites and municipal facilities), 32% of the likely sediment sources that were not related to construction and municipal facilities were inspected. There were also 298 municipal sites inspected a total of 597 times. The primary focus of likely sources of sediment is construction sites. During this FY, there were approximately 1,098 active construction sites in the HA that were inspected a total of 6,805 times.
JURMP Industrial/Commercial Inspections and Construction Site and Municipal Facility Inspections	Water Quality	Trash	Levels 1, 3 and 4	All sources inventoried under the JURMP program during FY 2012 are likely to produce trash. Of the total 5,314 trash sources inventoried (excluding construction and municipal), 34% were inspected. There were also 1,098 active construction sites inspected a total of 6,805 times and 298 municipal sites inspected a total of 597 times.
JURMP MS4 Cleaning & Street Sweeping	Water Quality	Bacteria, Metals, Sediment, and Trash	Levels 1 and 4	Street sweeping and MS4 cleaning are other BMPs implemented under the JURMP that may address bacteria, metal, sediment, and trash sources. During FY 2012, 1,135.1 tons of material was removed from streets via street sweeping and 428.3 tons of material was removed from the MS4 via cleaning activities, addressing catch basins, pipes, brow ditches, and open channels.

**This activity was implemented on a watershed basis and cannot be divided by HA at this time. Therefore the information and data presented is for the WMA but the activity impacted this HA.*

***This activity was implemented throughout the County of San Diego’s jurisdiction but may have impacted this HA.*

4.2.1.4 National City HA (908.3)

The National City HA is highly urbanized and residential land uses comprise 43% of the total land use. The HPWQPs in the HA are bacteria, sediment and trash. As described in Section 3, there were eight (8) distinct watershed water quality and education activities along with other education and public participation activities, inspections, street sweeping and MS4 cleaning conducted in the HA. Reportable effectiveness measures have been identified for the six (6) watershed activities, and the inspections, sweeping and catch basin activities conducted at the jurisdictional level at this time ([Table 4-5](#)).

Table 4-5: Summary of Implemented Activities with Effectiveness Assessment for FY 2012 – 908.3 National City Hydrologic Area (HPWQPs: Bacteria, Sediment, and Trash)

Activity	Type	Priority Problems Addressed	Level Outcome	Pollutant Load Reduction, Source Abatement or Other Benefit Derived
Watershed Activities				
SDB-001 Pet Waste Bag Programs*	Water Quality	Bacteria, Trash, Sediment	Levels 3 and 4	<ul style="list-style-type: none"> Approximately 730,068 pet waste bags dispensed City of National City estimated 2,400 lbs. removed in their jurisdiction
SDB-004 Collaborative Clean-Up Activities*	Water Quality	Bacteria, Trash, Sediment	Levels 2, 3 and 4	Approximately 5,957 individual participated in clean-up activities and an estimated 238 tons of trash was collected.
SDB-005 Clean Community Program**	Water Quality	Bacteria, Trash, Sediment	Levels 2, 3, and 4	<ul style="list-style-type: none"> In November 2011 and June 2012, a total of 623 tons of large-item waste was collected from 1,756 vehicle loads during the three events. Approximately 871 elementary students received the contest flyer and a lesson about the contest theme "By Keeping our Community Clean, We Can Keep the Ocean Clean."
SDB-007 Additional Dry Season Construction Inspections**	Water Quality	Bacteria, Trash, Sediment	Level 3	<ul style="list-style-type: none"> Completed 6 inspections, which exceeds Permit requirements. Helped contractors stay vigilant about implementing BMPs, especially near the end of the dry season. BMP deficiencies noted during the dry season inspections enabled the City to require resolution before the wet season.
SDB-074 National City Multi-Family Residential Property Evaluation	Water Quality	Bacteria, Sediment, Trash	Level 3	Upon completion of the initial assessment, brief follow-up visits were conducted at six properties where higher priority BMP deficiencies were observed and were able to be discussed with the responsible party of the property. During follow-up visits, it was found that about half of the the properties had corrected or taken steps to correct the higher priority BMP deficiencies observed during the first site visit (e.g., erosion, discharges to the MS4, oil stains, etc.)
SDB-076 Rainwater Harvesting Rebate Pilot Program**	Water Quality and Education	Bacteria, Sediment, Trash	Level 1 and 3	15 participants were rebated for a total of 58 rain barrels. Participants were provided a rebate of 0.50 cents per gallon, up to \$200 per address, for water capture devices up to 400 gallons that are purchased and installed.

Table 4-5: Summary of Implemented Activities with Effectiveness Assessment for FY 2012 – 908.3 National City Hydrologic Area (HPWQPs: Bacteria, Sediment, and Trash)

Activity	Type	Priority Problems Addressed	Level Outcome	Pollutant Load Reduction, Source Abatement or Other Benefit Derived
SDB-077 Qualcomm Stadium Drop-off Community Clean-up and Recycling Event Sponsorship***	Water Quality	Bacteria, Trash	Level 3 and 4	Collected a total of 112,000 lbs. of metals, appliances, junk furniture, and mattresses. Disposed of 68,000 lbs. and recycled 44,000 lbs.
Presentations*	Education	Bacteria, Trash, Sediment	Level 1 and 2	13 presentations reaching over an estimated 697 individuals in the San Diego Bay WMA
Print Media*	Education	Bacteria, Trash, Sediment	Level 1 and 2	24 Print Media methods utilized with the ability to reach over an estimated 179,649 individuals in the San Diego Bay WMA
School Programs and Outreach*	Education	Bacteria, Trash, Sediment	Level 1 and 2	134 school program events reaching over 21,000 school-aged children
Municipal Training* Staff	Education	Bacteria, Trash, Sediment	Level 1 and 2	22 trainings held and 640 municipal staff trained
Jurisdictional Activities (No WURMP Credit)				
JURMP Industrial/Commercial Inspections	Water Quality	Bacteria	Levels 1, 3 and 4	Sources categorized as likely to produce bacteria inventoried under the JURMP program during FY 2012 included agriculture, animal facilities, food establishments, and nurseries. Of the total 236 bacteria sources inventoried, 99% are food establishments. Approximately 60% of the restaurants were inspected, and overall 59% of the likely bacteria sources inventoried were inspected.
JURMP Industrial/Commercial & Construction Site Inspections	Water Quality	Sediments	Levels 1, 3 and 4	Sources categorized as likely to produce sediment inventoried under the JURMP program during FY 2012 included agriculture, animal facilities, contractors, nurseries, construction sites, and municipal facilities. Of the total 85 sediment sources inventoried (excluding construction sites and municipal facilities), 97% are contractors. Overall, 19% of the likely sediment sources that were not related to construction and municipal facilities were inspected. The primary focus of likely sources of sediment is construction sites. During this FY, there were approximately 244 active construction sites in the HA that were inspected a total of 1,021 times. There were also 33 municipal sites inspected a total of 37 times
JURMP Industrial/Commercial Inspections & Construction Site & Municipal Facility Inspections	Water Quality	Trash	Levels 1, 3 and 4	All sources inventoried under the JURMP program during FY 2012 are likely to produce trash. Of the total 726 trash sources inventoried (excluding construction and municipal), 41% were inspected. There were also 244 active construction sites inspected a total of 1,021 times and 33 municipal sites inspected a total of 37 times.

Table 4-5: Summary of Implemented Activities with Effectiveness Assessment for FY 2012 – 908.3 National City Hydrologic Area (HPWQPs: Bacteria, Sediment, and Trash)

Activity	Type	Priority Problems Addressed	Level Outcome	Pollutant Load Reduction, Source Abatement or Other Benefit Derived
JURMP MS4 Cleaning & Street Sweeping	Water Quality	Bacteria, Sediment, and Trash	Levels 1 and 4	Street sweeping and MS4 cleaning are other BMPs implemented under the JURMP that may address bacteria, metal, sediment, and trash sources. During FY 2012, 792.9 tons of material was removed from streets via street sweeping and 12.7 tons of material was removed from the MS4 via cleaning activities, addressing catch basins, pipes, brow ditches, and open channels.

**This activity was implemented on a watershed basis and cannot be divided by HA at this time. Therefore the information and data presented is for the WMA but the activity impacted this HA.*

*** This activity was implemented in 908.3 and 909.1 and cannot be divided by the individual HA at this time. Therefore the information and data presented represents two HAs.*

****This activity was implemented throughout the City of San Diego’s jurisdiction. Therefore, the data and information presented is for the City of San Diego, but the activity impacted this HA.*

4.2.2 SWEETWATER HU (909)

Effectiveness Assessment for the Sweetwater HU is presented by HA in the sections below with the exception of the 909.3 HA. There are no HPWQPs identified in the 909.3 HA at this time and therefore no effectiveness assessment was conducted.

4.2.2.1 Lower Sweetwater HA (909.1)

The Lower Sweetwater HA is the most urbanized area of the Sweetwater HU and land use consist primarily of residential, streets and roadways, open space, with the remaining area consisting of a mixture of commercial/industrial businesses, schools and undeveloped land use. The HPWQP in the Lower Sweetwater HA is bacteria. Residential sources of bacteria include sanitary sewer overflows, septic system failures, landscape maintenance, various washing activities, trash, and pet waste. As described in Section 3, there were 15 distinct watershed water quality, monitoring, and education activities along with other education and public participation activities, inspections, street sweeping and MS4 cleaning conducted in the HA. Reportable effectiveness measures have been identified for the nine (9) watershed activities, and the inspections, sweeping and catch basin activities conducted at the jurisdictional level at this time (Table 4-6).

Table 4-6: Summary of Implemented Activities with Effectiveness Assessment for FY 2012 – 909.1 Lower Sweetwater Hydrologic Area (HPWQP: Bacteria)

Activity	Type	Priority Problems Addressed	Level Outcomes	Pollutant Load Reduction, Source Abatement or Other Benefit Derived
Watershed Activities				
SDB-001 Pet Waste Bag Programs*	Water Quality	Bacteria	Levels 3 and 4	<ul style="list-style-type: none"> Approximately 730,068 pet waste bags dispensed Three new dispensers added in Chula Vista County of San Diego estimated 11,214 lbs. removed in their jurisdiction City of National City estimated 2,400 lbs. removed in their jurisdiction
SDB-004 Collaborative Clean-Up Activities*	Water Quality	Bacteria	Levels 2, 3 and 4	Approximately 5,957 individual participated in clean-up activities and an estimated 238 tons of trash was collected.
SDB-039 Provide Homeowner’s Association Education About Pollution Prevention**	Education	Bacteria	Level 2	Distributed 250 stormwater pollution prevention fliers to HOAs in the City of Chula Vista
SDB-040 Stormwater Education Booth at Annual Pet Festival and Doggy Dash**	Education	Bacteria	Level 1 and 2	<ul style="list-style-type: none"> 115 surveys completed Found that over 85% of surveyed pet owners use BMPs for pet waste
SDB-046 Land Acquisitions San Diego Bay	Water Quality	Bacteria	Level 4	3.39 acres of land acquired during the reporting period
SDB-062 Residential Rain Barrel Subsidies & Distributions***	Water Quality and Education	Bacteria	Level 1 and 3	The County surveyed 50 customers who purchased rain barrels in 2010 for customer satisfaction and to check to be sure the rain barrels had been installed and maintained.
SDB-066 Focused Outreach to Equestrian Community****	Education	Bacteria	Level 1 and 2	45 horse owners completed surveys – Surveys showed among horse owners there was some evidence that the workshop sparked behavioral intentions to remove manure from corrals and stalls more frequently and to manage manure by composting.
SDB-074 National City Multi-Family Residential Property Evaluation	Water Quality	Bacteria	Level 3	Upon completion of the initial assessment, brief follow-up visits were conducted at six properties where higher priority BMP deficiencies were observed and were able to be discussed with the responsible party of the property. During follow-up visits, it was found that about half of the the properties had corrected or taken steps to correct the higher priority BMP deficiencies observed during the first site visit (e.g., erosion, discharges to the MS4, oil stains, etc.)
SDB-076 Rainwater Harvesting Rebate Pilot Program**	Water Quality and Education	Bacteria	Level 1 and 3	15 participants were rebated for a total of 58 rain barrels. Participants were provided a rebate of 0.50 cents per gallon, up to \$200 per address, for water capture devices up to 400 gallons that are purchased and installed.

Table 4-6: Summary of Implemented Activities with Effectiveness Assessment for FY 2012 – 909.1 Lower Sweetwater Hydrologic Area (HPWQP: Bacteria)

Activity	Type	Priority Problems Addressed	Level Outcomes	Pollutant Load Reduction, Source Abatement or Other Benefit Derived
SDB-077 Qualcomm Stadium Drop-off Community Clean-up and Recycling Event Sponsorship****	Water Quality	Bacteria	Level 3 and 4	Collected a total of 112,000 lbs. of metals, appliances, junk furniture, and mattresses. Disposed of 68,000 lbs. and recycled 44,000 lbs.
Presentations*	Education	Bacteria	Level 1 and 2	13 presentations reaching over an estimated 697 individuals in the San Diego Bay WMA
Print Media*	Education	Bacteria	Level 1 and 2	24 Print Media methods utilized with the ability to reach over an estimated 179,649 individuals in the San Diego Bay WMA
School Programs and Outreach*	Education	Bacteria	Level 1 and 2	134 school program events reaching over 21,000 school-aged children
Municipal Staff Training*	Education	Bacteria	Level 1 and 2	22 trainings held and 640 municipal staff trained
Jurisdictional Activities (No WURMP Credit)				
JURMP Industrial/Commercial Inspections	Water Quality	Bacteria	Levels 1, 3 and 4	Sources categorized as likely to produce bacteria inventoried under the JURMP program during FY 2012 included agriculture, animal facilities, food establishments, and nurseries. Of the total 528 bacteria sources inventoried, 32% were inspected.
JURMP MS4 Cleaning & Street Sweeping	Water Quality	Bacteria	Levels 1 and 4	Street sweeping and MS4 cleaning are other BMPs implemented under the JURMP that may address bacteria, metal, sediment, and trash sources. During FY 2012, 855.2 tons of material was removed from streets via street sweeping and 249.1 tons of material was removed from the MS4 via cleaning activities, addressing catch basins, pipes, brow ditches, and open channels.

**This activity was implemented on a watershed basis and cannot be divided by HA at this time. Therefore the information and data presented is for the WMA but the activity impacted this HA.*

***This activity was implemented in 909.1, 910.2, and 910.3 and cannot be divided by the individual HA at this time. Therefore the information and data presented represents three HAs.*

**** This activity was implemented throughout the County of San Diego’s jurisdiction but may have impacted this HA.*

*****This activity was implemented in 909.1 and 909.2 and cannot be divided by the individual HA at this time. Therefore the information and data presented represents two HAs.*

4.2.2.2 Middle Sweetwater HA (909.2)

Unincorporated rural and suburban communities characterize the Middle Sweetwater HA. The Middle Sweetwater HA consists primarily of open space and undeveloped land, approximately 63% of the land use, while the rest of the HA is mostly residential use and commercial/industrial and streets/roadway land use. Pesticides have been identified as the HPWQP for this HA. As described in Section 3, there were eight (8) distinct watershed water quality and education activities along with other education and public participation activities, inspections, street sweeping and MS4 cleaning conducted in the HA. Reportable effectiveness measures have been identified for five (5) watershed activities, and the inspection activities conducted at the jurisdictional level at this time ([Table 4-7](#)).

Table 4-7: Summary of Implemented Activities with Effectiveness Assessment for FY 2012 – 909.2 Middle Sweetwater Hydrologic Area (HPWQP: Pesticides)

Activity	Type	Priority Problems Addressed	Level Outcomes	Pollutant Load Reduction, Source Abatement or Other Benefit Derived
Watershed Activities				
SDB-001 Pet Waste Bag Programs*	Water Quality	Pesticides	Levels 3 and 4	<ul style="list-style-type: none"> Approximately 730,068 pet waste bags dispensed County of San Diego estimated 11,214 lbs. removed in their jurisdiction
SDB-004 Collaborative Clean-Up Activities*	Water Quality	Pesticides	Levels 2, 3 and 4	Approximately 5,957 individual participated in clean-up activities and an estimated 238 tons of trash was collected.
SDB-046 Land Acquisitions San Diego Bay	Water Quality	Pesticides	Level 4	254.66 acres of land acquired during the reporting period
SDB-062 Residential Rain Barrel Subsidies & Distributions**	Water Quality and Education	Pesticides	Level 1 and 3	50 customers who purchased rain barrels in 2010 were surveyed for customer satisfaction and to check to be sure the rain barrels had been installed and maintained.
SDB-066 Focused Outreach to Equestrian Community***	Education	Pesticides	Level 1 and 2	45 horse owners completed surveys – Surveys showed among horse owners there was some evidence that the workshop sparked behavioral intentions to remove manure from corrals and stalls more frequently and to manage manure by composting.
Presentations*	Education	Pesticides	Level 1 and 2	13 presentations reaching over an estimated 697 individuals in the San Diego Bay WMA
Print Media*	Education	Pesticides	Level 1 and 2	24 Print Media methods utilized with the ability to reach over an estimated 179,649 individuals in the San Diego Bay WMA
School Programs and Outreach*	Education	Pesticides	Level 1 and 2	134 school program events reaching over 21,000 school-aged children
Municipal Staff Training*	Education	Pesticides	Level 1 and 2	22 trainings held and 640 municipal staff trained

Table 4-7: Summary of Implemented Activities with Effectiveness Assessment for FY 2012 – 909.2 Middle Sweetwater Hydrologic Area (HPWQP: Pesticides)

Activity	Type	Priority Problems Addressed	Level Outcomes	Pollutant Load Reduction, Source Abatement or Other Benefit Derived
Jurisdictional Activities (No WURMP Credit)				
JURMP Industrial/Commercial Inspections	Water Quality	Pesticides	Levels 1, 3 and 4	Sources categorized as likely to produce pesticides inventoried under the JURMP program during FY 2012 included agriculture, animal, nursery facilities and municipal facilities. 29% of the facilities likely to produce pesticides inventoried were inspected (not including municipal facilities). Additionally, there were a total of 30 municipal facilities that received a total of 30 inspections.

**This activity was implemented on a watershed basis and cannot be divided by HA at this time. Therefore the information and data presented is for the WMA but the activity impacted this HA.*

*** This activity was implemented throughout the County of San Diego’s jurisdiction but may have impacted this HA.*

****This activity was implemented in 909.1 and 909.2 and cannot be divided by the individual HA at this time. Therefore the information and data presented represents two HAs.*

4.2.3 OTAY HU (910)

The *Basin Plan* identifies the Otay HU as the second largest of the three HUs in the San Diego Bay WMA and is one of the least populated watersheds in the San Diego County. The effectiveness assessment for the Otay HU is presented by HA in the sections below with the exception of the 910.3 HA. There are no HPWQPs identified for the 910.3 HA and therefore no effectiveness assessment was conducted.

4.2.3.1 Coronado HA (910.1)

Land use in the Coronado HA consists primarily of open space which is 81% of the total land use in the HA. Residential land uses make up approximately 13% and agricultural uses make up 4% of the total land use. Bacteria and Gross Pollutants have been identified as the HPWQP for the HA. As described in Section 3, there were six (6) distinct watershed water quality, monitoring, and education activities along with other education and public participation activities, inspections, street sweeping and MS4 cleaning conducted in the HA. Reportable effectiveness measures have been identified for three (3) watershed activities, and the inspections, sweeping and catch basin activities conducted at the jurisdictional level at this time ([Table 4-8](#)).

Table 4-8: Summary of Implemented Activities with Effectiveness Assessment for FY 2012 – 910.1 Coronado Hydrologic Area (HPWQPs: Bacteria and Gross Pollutants)

Activity	Type	Priority Problems Addressed	Level Outcomes	Pollutant Load Reduction, Source Abatement or Other Benefit Derived
Watershed Activities				
SDB-001 Pet Waste Bag Programs*	Water Quality	Bacteria and Gross Pollutants	Levels 3 and 4	<ul style="list-style-type: none"> Approximately 730,068 pet waste bags dispensed
SDB-004 Collaborative Clean-Up Activities*	Water Quality	Bacteria and Gross Pollutants	Levels 2, 3 and 4	Approximately 5,957 individual participated in clean-up activities and an estimated 238 tons of trash was collected.
SDB-047 Large Special Event Inspection and Clean-up	Water Quality	Bacteria and Gross Pollutants	Levels 2, 3, and 4	The City of Imperial Beach held 17 large special events which included the U.S. Open Sandcastle Competition with over 400,000 visitors. In preparation for the U.S. Open Sandcastle event the City provided additional stormwater BMP information to all street vendors before the event and then followed up with stormwater inspections during the event to ensure the implementation of the BMPs. Most street vendors were aware of the stormwater requirements and were implementing proper stormwater BMPs. Vendors not implementing proper BMPs were warned or cited and provided further information to correct behavior. No Notices of Violations (NOVs) were issued during the Sandcastle event or other special event.
Presentations*	Education	Bacteria and Gross Pollutants	Level 1 and 2	13 presentations reaching over an estimated 697 individuals in the San Diego Bay WMA
Print Media*	Education	Bacteria and Gross Pollutants	Level 1 and 2	24 Print Media methods utilized with the ability to reach over an estimated 179,649 individuals in the San Diego Bay WMA
School Programs and Outreach*	Education	Bacteria and Gross Pollutants	Level 1 and 2	134 school program events reaching over 21,000 school-aged children
Municipal Staff Training*	Education	Bacteria and Gross Pollutants	Level 1 and 2	22 trainings held and 640 municipal staff trained
Jurisdictional Activities (No WURMP Credit)				
JURMP Industrial/Commercial Inspections	Water Quality	Bacteria	Levels 1, 3 and 4	Sources categorized as likely to produce bacteria inventoried under the JURMP program during FY 2012 included agriculture, animal facilities, food establishments, and nurseries. Of the total 244 bacteria sources inventoried, 48% are food establishments. Approximately 80% of the food establishments were inspected, and overall 40% of the likely bacteria sources inventoried were inspected.

Table 4-8: Summary of Implemented Activities with Effectiveness Assessment for FY 2012 – 910.1 Coronado Hydrologic Area (HPWQPs: Bacteria and Gross Pollutants)

Activity	Type	Priority Problems Addressed	Level Outcomes	Pollutant Load Reduction, Source Abatement or Other Benefit Derived
JURMP Industrial/Commercial	Water Quality	Gross Pollutants	Levels 1, 3 and 4	Sources categorized as likely to produce gross pollutants inventoried under the JURMP program during FY 2012 included automotive, contractors, and food establishments. Of the total 130 gross pollutant sources inventoried 80% were inspected.
JURMP MS4 Cleaning & Street Sweeping	Water Quality	Bacteria and Gross Pollutants	Levels 1 and 4	Street sweeping and MS4 cleaning are other BMPs implemented under the JURMP that may address bacteria, metal, sediment, and trash sources. During FY 2012, 173.5 tons of material was removed from streets via street sweeping and 1,217.4 tons of material was removed from the MS4 via cleaning activities, addressing catch basins, pipes, brow ditches, and open channels.

**This activity was implemented on a watershed basis and cannot be divided by HA at this time. Therefore the information and data presented is for the WMA but the activity impacted this HA.*

4.2.3.2 Otay HA (910.2)

Land use in Otay HA consists primarily of open space, approximately 41% of the land use, while residential, streets and roadways and industrial and commercial uses are approximately 14% of the land use. Bacteria have been identified as a HPWQP for this HA. As described in Section 3, there were 15 distinct watershed water quality and education activities along with other education and public participation activities, inspections, street sweeping and MS4 cleaning conducted in the HA. Reportable effectiveness measures have been identified for seven (7) watershed activities, and the inspections, sweeping and catch basin activities conducted at the jurisdictional level at this time (Table 4-9).

Table 4-9: Summary of Implemented Activities with Effectiveness Assessment for FY 2012 – 910.2 Otay Hydrologic Area (HPWQPs: Bacteria)

Activity	Type	Priority Problems Addressed	Level Outcomes	Pollutant Load Reduction, Source Abatement or Other Benefit Derived
Watershed Activities				
SDB-001 Pet Waste Bag Programs*	Water Quality	Bacteria	Levels 3 and 4	<ul style="list-style-type: none"> Approximately 730,068 pet waste bags dispensed Three new dispensers added in Chula Vista County of San Diego estimated 11,214 lbs. removed in their jurisdiction
SDB-004 Collaborative Clean-Up Activities*	Water Quality	Bacteria	Levels 2, 3 and 4	Approximately 5,957 individual participated in clean-up activities and an estimated 238 tons of trash was collected.
SDB-039 Provide Homeowner’s Association Education About Pollution Prevention**	Education	Bacteria	Level 2	Distributed 250 stormwater pollution prevention fliers to HOAs in the City of Chula Vista
SDB-040 Stormwater Education Booth at Annual Pet Festival and Doggy Dash**	Education	Bacteria	Level 1 and 2	<ul style="list-style-type: none"> 115 surveys completed Found that over 85% of surveyed pet owners use BMPs for pet waste
SDB-045 ILACSD School Watershed Presentations	Education	Bacteria	Level 2	Watershed education and pollution prevention information was provided to 298 school aged children in the HA. Pre and post-tests assessment tools were utilized and indicated an increase in knowledge and awareness.
SDB-062 Residential Rain Barrel Subsidies & Distributions***	Water Quality and Education	Bacteria	Level 1 and 3	50 customers who purchased rain barrels in 2010 were surveyed for customer satisfaction and to check to be sure the rain barrels had been installed and maintained.
SDB-073 Walk the Watershed	Water Quality and Education	Bacteria	Levels 2 and 3	<ul style="list-style-type: none"> Over 200 students participated 125 event exit surveys were collected – 100% correctly identified what a watershed is, what urban runoff is, and at least one preventative measure they can take to prevent stormwater pollution 1,000 pounds of invasive iceplant was removed from a 40 square foot area adjacent to the Otay River
SDB-076 Rainwater Harvesting Rebate Pilot Program****	Water Quality and Education	Bacteria	Level 1 and 3	15 participants were rebated for a total of 58 rain barrels. Participants were provided a rebate of 0.50 cents per gallon, up to \$200 per address, for water capture devices up to 400 gallons that are purchased and installed.

Table 4-9: Summary of Implemented Activities with Effectiveness Assessment for FY 2012 – 910.2 Otay Hydrologic Area (HPWQPs: Bacteria)

Activity	Type	Priority Problems Addressed	Level Outcomes	Pollutant Load Reduction, Source Abatement or Other Benefit Derived
SDB-077 Qualcomm Stadium Drop-off Community Clean-up and Recycling Event Sponsorship*****	Water Quality	Bacteria	Level 3 and 4	Collected a total of 112,000 lbs. of metals, appliances, junk furniture, and mattresses. Disposed of 68,000 lbs. and recycled 44,000 lbs.
Presentations*	Education	Bacteria	Level 1 and 2	13 presentations reaching over an estimated 697 individuals in the San Diego Bay WMA
Print Media*	Education	Bacteria	Level 1 and 2	24 Print Media methods utilized with the ability to reach over an estimated 179,649 individuals in the San Diego Bay WMA
School Programs and Outreach*	Education	Bacteria	Level 1 and 2	134 school program events reaching over 21,000 school-aged children
Municipal Staff Training*	Education	Bacteria	Level 1 and 2	22 trainings held and 640 municipal staff trained
Jurisdictional Activities (No WURMP Credit)				
JURMP Industrial/Commercial Inspections	Water Quality	Bacteria	Levels 1, 3 and 4	Sources categorized as likely to produce bacteria inventoried under the JURMP program during FY 2012 included agriculture, animal facilities, and food establishments. Of the total 320 bacteria sources inventoried, 98% are food establishments. Approximately 47% of the food establishments were inspected, and overall 46% of the likely bacteria sources inventoried were inspected.
JURMP MS4 Cleaning & Street Sweeping	Water Quality	Bacteria	Levels 1 and 4	Street sweeping and MS4 cleaning are other BMPs implemented under the JURMP that may address bacteria, metal, sediment, and trash sources. During FY 2012, 651.2 tons of material was removed from streets via street sweeping and 203.4 tons of material was removed from the MS4 via cleaning activities, addressing catch basins, pipes, brow ditches, and open channels.

**This activity was implemented on a watershed basis and cannot be divided by HA at this time. Therefore, the data and information presented is for the WMA but the activity impacted this HA.*

***This activity was implemented in 909.1, 910.2, and 910.3 and cannot be divided by the individual HA at this time.*

**** This activity was implemented throughout the County of San Diego’s jurisdiction but may have impacted this HA.*

*****This activity was implemented in five HAs and the results cannot be divided by HAs at this time. Therefore the information and data presented represents five HAs but the activity impacted this HA.*

******This activity was implemented throughout the City of San Diego’s jurisdiction. Therefore, the data and information presented is for the City of San Diego, but the activity impacted this HA.*

4.3 TMDL ASSESSMENTS

This section will assess the effectiveness of BMP Implementation Plans as a whole for TMDLs within the San Diego WMA.

4.3.1 CHOLLAS CREEK DIAZINON AND DISSOLVED METALS TMDLS

Status

The Implementation Plan for the Chollas Creek Diazinon TMDL was completed in September 2004 and is currently being implemented. The Copermitees within the Chollas Creek HSA (a sub-watershed of the Pueblo San Diego HU (908)) continue to monitor Diazinon discharges into the creek and implement an education and outreach program to raise awareness among key audiences regarding the harmful effects of pesticides on the environment. The Copermitees also continue to promote the use of Integrated Pest Management (IPM) practices to reduce pesticide loading into Chollas Creek.

The Chollas Creek Dissolved Metals TMDL took effect October 22, 2008 when it was approved as a Basin Plan Amendment by the Office of Administrative Law and subsequently approved by the Environmental Protection Agency in December 2008. The seven named dischargers collaborated on a multi-pollutant strategy for addressing the TMDL and the developed the required BMP Implementation Plan that was submitted to the Regional Board on October 21, 2009. While implementing Phase I of the strategy, the dischargers have also been developing the CLRP, as discussed in section 4.3.4. The CLRP will supersede the current implementation plan for the Chollas Creek Metals TMDL once approved by the RWQCB.

Assessment

To address Diazinon in FY 2012, the Copermitees continued to promote IPM through jurisdictional IPM seminars and events and through the San Diego Regional IPM Program. Refer to Section 3.2.1.3 and **Table 3-3** of this Annual Report for more details. A few dischargers implemented additional activities targeting Diazinon through IPM materials, detailed in the tables in (**Appendix D**). Specifically, dischargers implemented the following activities:

- IPM materials were distributed at five community events targeting specific audience groups.
- 2,162 students were educated through sponsorship by dischargers of San Diego County Office of Education's "Green Machine" traveling outreach van which visits elementary schools within the Chollas Creek watershed area. Education includes IPM practices.
- 132 individuals attended an IPM for Landscape Professionals Seminar and received information on IPM methods that combine biological, cultural, physical, and chemical tools to minimize health, environmental and financial risks.

As discussed in Section 2.2.1.4, the Copermitees continue to conduct monitoring for the Chollas Creek Diazinon and Dissolved Metals TMDLs. Required compliance monitoring along with trends is detailed in **Appendix F**, the Chollas Creek Total Maximum Daily Load Compliance Monitoring Investigation Order No. R9-2004-0277 2009-2010 Water Quality Monitoring Report. In summary:

- Diazinon concentrations at SD8(1) and DPR3 have shown statistically significant decreasing trends,

- Dissolved copper trends throughout the compliance monitoring seasons have generally exceeded both acute and chronic WQOs using the default Water Effects Ratio (WER) of 1. However, based on Site Specific Objectives WERs dissolved copper concentrations did not exceed the acute and chronic dissolved copper WQOs.
- Dissolved lead concentrations have been consistently below the acute WQO and about level with the chronic WQO.
- Dissolved zinc concentrations at DPR3 have been below the acute and chronic WQOs throughout the compliance monitoring period. However, dissolved zinc concentrations at SD8(1) have fluctuated above and below the acute and chronic WQOs, but concentrations from the 2010-2011 monitoring season to the present are lower than acute and chronic WQOs.
- Toxicity was not observed at DPR3 during any season of this monitoring effort. In the sample collected from SD8(1), there was an adverse effect observed in *C. dubia* reproduction in February and November of 2009

Based on the monitoring results presented above, the San Diego Bay Copermittees' efforts to address Diazinon through education and outreach programs, in addition to the ban on Diazinon, are adequate for meeting the goals of the Diazinon TMDL. Education and outreach programs and events for area residents and businesses should continue in order to help further reduce pesticide usage within the Chollas Creek watershed and proactively address the observed shift in pesticide usage that has occurred in recent years toward synthetic pyrethroids.

As discussed in Section 2.2.1.4, the City of San Diego submitted the WER to the Regional Board for review and approval. If approved, the WER would improve the accuracy of the Dissolved Metals TMDL by including water hardness in the calculation of the levels of dissolved metals that Chollas Creek is able to assimilate before beneficial uses would be impaired. To date, the WER has not been reviewed by the Regional Board.

The Dischargers' approach in addressing the Dissolved Metals TMDL is an integrated, multi-pollutant based approach targeting metals, trash, bacteria, and pesticides as well as other pollutants. Seventy-one activities, including water quality, education, and ongoing agency-wide activities, were implemented in FY 2012.

Activity details including information on measurable targeted outcomes (Levels 1-6), assessment measures and assessment methods are presented in each discharger's BMP Implementation table located in [Appendix F](#). However, this section includes a collective summary of some notable accomplishments. Examples of Discharger activity accomplishments for FY 2012 include:

- The removal of over 48,000 pounds of trash from the watershed.
- Over 150,000 individuals were educated on urban runoff, pollution prevention, and watershed issues through Public Service Announcements, presentations, workshops and seminars.
- 80 Multi-Family Residential Trash Areas were assessed as part of a Multi-Family Residential Trash Area Pilot Study

The accomplishments listed above are not comprehensive. Details regarding all the activities that were implemented and/or are planned and made progress in FY 2012 are included in each

discharger's activity table included in [Appendix D](#). It is anticipated that over time with implementation of the Dischargers' Dissolved Metals TMDL Implementation Plan, improvements to water quality will be observed. The actions that the Dischargers' have planned are anticipated to reduce pollutant loading and address pollutant sources as well as education the public on water quality issues.

4.3.2 SIYB DISSOLVED COPPER TMDL

Status

The Port of San Diego, City of San Diego, SIYB marinas/yacht clubs, hull cleaners, and boat owners were identified as named parties under the TMDL for dissolved copper in SIYB. The SIYB Dissolved Copper TMDL was added as an amendment to the Regional Board Water Quality Control Plan for the San Diego Basin (Basin Plan) on February 9, 2005. The SYIB Dissolved Copper TMDL requires that loading of dissolved copper be reduced by 76% by 2022.

According to the TMDL, the predominant source of copper loading to SIYB is copper-based hull paints applied to recreational vessels in SIYB. Copper may be released from the hull paints either through passive leaching or in-water hull cleaning. Other sources include urban runoff, aerial deposition, and sediment flux.

On March 11, 2011, the RWQCB issued Investigative Order No. R9-2011-0136 which stated that TMDL implementation progress is to be determined through tracking data on the number of boat hulls converted from copper-based antifouling paints to alternative hull paints to assess required dissolved copper loading reductions and monitoring dissolved copper concentrations and toxicity in the water column to determine when water quality objectives are attained and beneficial uses restored.

During this reporting period, efforts focused on implementing strategies to address the TMDL and compiling information on these efforts in the annual report submitted on March 31, 2012, which is included in [Appendix G](#). As discussed in Section 2.2.1.4, the Port of San Diego conducted water quality sampling to determine dissolved copper concentrations in the basin, test for acute and chronic toxicity, and assess water quality trends over time, while the City of San Diego conducted urban runoff monitoring for SIYB to identify spatial or temporal patterns in dissolved copper loads.

Assessment

BMPs implemented by the responsible parties to reduce dissolved copper loading and improve water quality included:

- Formulation of policies, regulations, and incentives to reduce copper loading, such as the San Diego Bay-wide hull cleaning permit and marina/yacht club alternative hull paint wait list priority and financial incentives.
- Sponsorship and implementation of alternative hull paint studies.
- Hull paint transitions to non-copper and low-copper products.
- Extensive education and outreach, such as hosting educational booths, developing brochures and educational materials, and presenting at conferences and workshops.
- Leading and participating in multi-agency activities, such as the state-wide copper subworkgroup and the Regional Harbor Monitoring Program.

The SIYB Dissolved Copper TMDL incorporated interim and final loading targets for TMDL attainment. The first interim loading target is a 10% reduction in dissolved copper by December 2012. Compliance with the interim target will be assessed in the next reporting period and submitted by the Port of San Diego in the Shelter Island Yacht Basin Dissolved Copper Total Maximum Daily Load 2012 Monitoring and Progress Final Report. An update will also be provided in the next WURMP annual report.

Although the dissolved copper load from the City's MS4 into the SIYB is well below the WLA as identified in the TMDL and further reductions from the MS4 are not required by the TMDL, the City is continuing to monitor and verify that the copper loading from its MS4 remains within the TMDL WLA. Additionally, potential options to further control or reduce the existing dissolved copper load from the City's MS4 into the SIYB that the City may consider include:

- Source control measures targeting reduction copper load from aerial deposition
- Implement targeted aggressive street sweeping activities within the Shelter Island drainage area
- Outreach and education programs to educate residents and business owners about the dissolved copper TMDLs as well as general stormwater pollution prevention information.

4.3.3 BABY BEACH AND SHELTER ISLAND SHORELINE PARK INDICATOR BACTERIA TMDL

Status

The Regional Board adopted the Baby Beach and Shelter Island Shoreline Park Indicator Bacteria TMDL as a Basin Plan Amendment on June 11, 2008. The Port of San Diego and the City of San Diego are responsible for monitoring Shelter Island Shoreline Park for Indicator Bacteria (Total Coliform, Fecal Coliform, Enterococci).

As discussed in Section 3.5.2, the Port of San Diego initiated an internal work plan to compile and summarize available bacteriological data collected from Shelter Island Shoreline Park, assess the data with respect to listing guidelines established by the State Water Resources Control Board (SWRCB), and identify data gaps. This effort will help to verify that the existing waste load allocation has not been exceeded and identify additional actions that may need to be taken. An update will be provided in the next reporting period.

Assessment

An assessment of this TMDL is not currently available.

4.3.4 REVISED TMDL FOR INDICATOR BACTERIA, PROJECT I

Status

In FY 2012, the Copermittees and Caltrans developed a CLRP for the Chollas Creek HSA. The CLRP represents an integrated water quality plan combining multiple permit-based and voluntary strategies and BMPs into a comprehensive approach for achieving compliance with the Indicator Bacteria, Project 1 TMDL which was approved by the San Diego Regional Water Quality Control Board and took effect April 4, 2011. This CLRP will supersede the Implementation Plan previously submitted for the Chollas Creek Metals and Diazinon TMDL. The Copermittees will use the CLRP to guide watershed implementation programs, evaluate their effectiveness, and make adjustments over a twenty-year implementation period (through 2031).

The CLRP is a compliance plan with suites of potential nonstructural and structural BMPs that may be implemented. These BMPs were developed and selected based on their applicability to the specific pollutants, impairments and conditions addressed; and the specific land use conditions and availability of land in the watersheds. By incorporating a comprehensive approach to all of the pollutants, impairments and concerns, the CLRP is intended to improve the efficiency and effectiveness of BMP planning, and as a result, to reduce the overall cost of implementation and compliance monitoring.

Assessment

Assessment of the Comprehensive Load Reduction Plan is an iterative process and will involve tracking the individual activities periodically to be able to make recommendations on how to optimize the efficiency of the Copermittes stormwater programs to meet water quality goals and regulations. As the CLRP was submitted in October 2012, there are no results available at this time.

5 CONCLUSIONS AND RECOMMENDATIONS

5.1 CONCLUSIONS

The San Diego Bay Copermittees successfully completed all watershed-based requirements of the Municipal Permit and provided many opportunities for public participation and stakeholder input. Due to the success of the programs implemented during FY 2012, the San Diego Bay WURMP achieved the following objectives: 1) implementation of activities to specifically address the sources of water quality problems at a WMA and HA level; 2) continuation of the comprehensive water quality program, including long-term trend analysis where appropriate; 3) an evaluation of the collaborative effort on a WMA and HA level; 4) continued refinement of the watershed program; and 5) continued progress toward meeting WURMP goals and objectives (San Diego Bay WURMP, 2008).

As required, Copermittees implemented activities in the WMA as part of their JURMP and WURMP programs. In an effort to report on the Copermittees' actions to improve water quality in the WMA, the Copermittees continued to collect and report on JURMP and WURMP activities performed on an HA basis for this annual report. It should be noted that while the information in this report does not account for all JURMP activities undertaken by each Copermittee, the San Diego Bay Copermittees are utilizing a more holistic approach to evaluate all efforts taken to improve stormwater quality through applicable stormwater programs within the WMA. In addition, estimates were used to generate quantifiable result for some of the reported JURMP activities (this process is explained in [Appendix B](#)). Combined activity reporting is an important step to integrate the activities and reporting to best assess and plan for activities that address the identified HPWQPs on an HA basis.

In order to address HPWQPs and target audiences in the San Diego Bay WMA, the Copermittees implemented eight (8) watershed education activities, 25 water quality activities, and three (3) monitoring or source identification studies with many of the activities providing effectiveness assessment information as described in Section 4. It is important to note that there were water quality activities that were implemented in multiple HAs such as Pet Waste Bags, Trash Cleanups, Street Sweeping, Rain Barrel Rebates, and Inspections.

In addition, the San Diego Bay Watershed Copermittees were successful in collectively conducting a total of 14,731 construction inspections, 3,607 industrial and commercial facility inspections, and 930 municipal facility inspections in the San Diego Bay WMA during this reporting period. In addition there were approximately 3,042 tons of debris removed from MS4 facilities and an estimated 4,799 tons of debris removed through street sweeping activities conducted by the Copermittees in the San Diego Bay WMA.

The named dischargers of the TMDLs in San Diego Bay WMA have taken a holistic approach to planning, implementation, and assessment of watershed activities. The approach takes into account watershed activities implemented by named dischargers under WURMP, JURMP, or other stormwater water quality programs. As with the WURMP assessment, the goal of integrating information from various programs is to compile data from all implemented activities in order to allow a comprehensive evaluation of watershed-wide efforts that address high priority water quality pollutants identified in the TMDLs. The involvement of non-Copermittee agencies (i.e., Caltrans and the U.S. Navy) in the Chollas Creek TMDLs enables the incorporation of information on pollutant sources outside of the Copermittees' jurisdictions and the BMPs these agencies have implemented to address pollutant sources. During this reporting period, Copermittees named in one or more of the TMDLs in the San Diego Bay WMA have

implemented activities as part of their comprehensive Stormwater Programs that will help in achieving TMDL compliance. The dischargers will share this information and will apply lessons learned in the region with the goal of improving water quality in the Chollas Creek Watershed and throughout the San Diego Bay WMA.

5.2 PROGRAM IMPROVEMENTS AND RECOMMENDATIONS

The San Diego Bay Copermittees will continue to utilize information on watershed pollutants and sources when evaluating and determining which watershed activities to implement. The Watershed Strategy, a key component required for the San Diego Bay WURMP Document, provides a consistent mechanism for prioritizing pollutants, identifying sources of pollution, maximizing available resources, and developing and implementing activities. The San Diego Bay Copermittees will continue to gather water quality data suitable for assessments at the watershed, sub-watershed, and HA levels, and research pollutant sources and their loading potentials. The San Diego Bay Copermittees will also leverage studies on these issues being completed in other San Diego region watersheds. Further refining the characterization of source inventories and water quality is expected to enable the Copermittees to modify program activities to specifically target the most important sources of HPWQPs.

The San Diego Bay Copermittees will continue to evaluate the standardization of incoming data available through the activity summary sheets and comprehensive assessments. By evaluating the activities' relevance to the high priority water quality problems and their sources, the Copermittees will be able to assess if activities are effectively targeting high priority pollutants and/or sources, or if modifications are necessary.

It is also recommended that the San Diego Bay Watershed Copermittees evaluate the WURMP program and implementation components in regards to the upcoming Tentative Order and its impact on watershed and jurisdictional programs. The adoption of the Tentative Order may lead to program changes and activity implementation changes in future fiscal years. The Copermittees will continue to contribute to efforts focused on making a more efficient and effective watershed program through their involvement in the San Diego Regional Copermittees' efforts to improve coordination on reporting and assessment functions and in working with RWQCB staff.

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