

LOS PEÑASQUITOS WATERSHED URBAN RUNOFF MANAGEMENT PROGRAM

FISCAL YEAR 2011 ANNUAL REPORT

JANUARY 31, 2012

PREPARED AND SUBMITTED BY THE LOS PEÑASQUITOS
WATERSHED COPERMITTEES

CITY OF DEL MAR
CITY OF POWAY
CITY OF SAN DIEGO
COUNTY OF SAN DIEGO

TABLE OF CONTENTS

EXECUTIVE SUMMARY..... ES-1

1 INTRODUCTION 1

 1.1 COPERMITTEE COLLABORATION..... 2

 1.1.1 LOS PEÑASQUITOS WURMP MEETINGS 2

 1.2 WATERSHED MAP UPDATE 3

 1.3 ORGANIZATION AND CONTENT OF REPORT..... 3

2 WATER QUALITY ASSESSMENT 5

 2.1 MONITORING PROGRAMS..... 5

 2.2 303(D) LISTINGS 7

 2.3 ASSESSMENT 7

 2.4 INTEGRATED ASSESSMENT 9

 2.4.1 HIGH PRIORITY WATER QUALITY PROBLEMS..... 13

3 POLLUTANT SOURCE ASSESSMENT..... 15

4 IMPLEMENTATION OF ACTIVITIES..... 19

 4.1 JURMP AND WATERSHED ACTIVITIES 19

 4.2 WATERSHED EDUCATION ACTIVITIES..... 21

 4.3 PUBLIC PARTICIPATION ACTIVITIES..... 22

 4.3.1 INTRODUCTION 22

 4.3.2 ACTIVITIES CONDUCTED 22

 4.3.3 FUTURE EFFORTS 23

 4.4 COLLABORATIVE LAND-USE PLANNING EFFORTS 23

 4.4.1 INTRODUCTION 23

 4.4.2 ACTIVITIES CONDUCTED 23

 4.4.3 FUTURE EFFORTS 24

 4.5 UPDATED 5-YEAR STRATEGIC PLAN..... 24

 4.5.1 NEW WMA ACTIVITIES..... 24

 4.5.2 UPDATED 5-YEAR STRATEGIC PLAN..... 25

5 EFFECTIVENESS ASSESSMENT..... 29

 5.1 ASSESSMENT OF OVERALL WURMP EFFECTIVENESS..... 29

 5.1.1 ACTIVITIES ASSESSMENT 30

 5.2 ASSESSMENT OF TMDL BMP IMPLEMENTATION PLAN EFFECTIVENESS..... 31

6 CONCLUSIONS AND PROGRAM IMPROVEMENTS 35

 6.1 CONCLUSIONS 35

 6.2 PROGRAM IMPROVEMENTS 36

REFERENCES 39

APPENDIX A – JURMP SOURCE AND ACTIVITY METHODOLOGY
 APPENDIX B – FY 2011 LOS PEÑASQUITOS WATERSHED ACTIVITY SHEETS
 ATTACHMENT A – LOS PEÑASQUITOS WURMP WATERSHED MAP

FY 2011 LOS PEÑASQUITOS WURMP ANNUAL REPORT – JANUARY 2012

LIST OF FIGURES

FIGURE 2-1 LOCATION OF MLS, TWAS, AND HAS – LOS PEÑASQUITOS CREEK WMA 6

LIST OF TABLES

TABLE 1-1 WURMP MEETING DATES AND AGENDA ITEMS DISCUSSED..... 2

TABLE 2-1 2010-2011 MONITORING PROGRAM ACTIVITIES 5

TABLE 2-2 LOS PEÑASQUITOS WMA 2010 303(d) LISTED WATERBODIES AND TMDL STATUS.... 7

TABLE 2-3 SUMMARY OF WMA ASSESSMENT FINDINGS 8

TABLE 2-4 MIRAMAR 906.1 HA INTEGRATED ASSESSMENT FINDINGS..... 10

TABLE 2-5 POWAY 906.2 HA INTEGRATED ASSESSMENT FINDINGS 12

TABLE 3-1 LAND USE ACREAGE BY HYDROLOGIC AREA 16

TABLE 3-2 POLLUTANT GENERATING SOURCES – 906.1 MIRAMAR HYDROLOGIC AREA..... 17

TABLE 3-3 POLLUTANT GENERATING SOURCES – 906.2 POWAY HYDROLOGIC AREA 18

TABLE 4-1 JURMP AND WURMP ACTIVITIES – 906.1 MIRAMAR HYDROLOGIC AREA..... 20

TABLE 4-2 JURMP AND WURMP ACTIVITIES – 906.2 POWAY HYDROLOGIC AREA 21

TABLE 4-3 WATERSHED EDUCATION ACTIVITIES IMPLEMENTED DURING FY 2011 21

TABLE 4-4 NUMBER OF HITS: PROJECT CLEAN WATER LOS PEÑASQUITOS WMA WEB SITE 22

TABLE 4-5 NUMBER OF HITS: PROJECT CLEAN WATER LOS PEÑASQUITOS WURMP WEB SITE . 22

TABLE 4-6 COMMUNITY CLEANUP EVENTS IN FY 2011 23

TABLE 4-7 UPDATED 5-YEAR STRATEGIC PLAN..... 26

TABLE 5-1 PERMIT COMPONENT COMPLIANCE (LEVEL 1)..... 29

TABLE 5-2 OUTCOME LEVELS: LEVELS 1 THROUGH 6 30

TABLE 5-3 SUMMARY OF IMPLEMENTED ACTIVITIES FOR FY 2011 – 906.1 MIRAMAR HYDROLOGIC AREA 32

TABLE 5-4 SUMMARY OF IMPLEMENTED ACTIVITIES FOR FY 2011 – 906.2 POWAY HYDROLOGIC AREA 34

EXECUTIVE SUMMARY

Since January 2002, the County of San Diego and the Cities of Del Mar, Poway and San Diego (herein referred to as the “Copermittees”) have been active in planning, developing and implementing watershed-based programs in the Los Peñasquitos Watershed Management Area (WMA) to implement Order No. R9-2007-0001 (Permit), issued on January 24, 2007 by the San Diego Regional Water Quality Control Board (RWQCB). This Annual Report describes the actions taken by the Copermittees in Fiscal Year (FY) 2011 (July 1st, 2010 to June 30th, 2011) to implement and refine the 2008 Los Peñasquitos Watershed Urban Runoff Management Program (WURMP), and the progress made towards decreasing urban runoff and improving receiving water quality in the WMA.

The Copermittees collaborated on their efforts to address high priority surface water quality issues throughout the Los Peñasquitos WMA. This was coordinated through periodic meetings held throughout the reporting period. The meetings were held in order to effectively plan and implement the Los Peñasquitos WURMP, develop and prioritize water quality activities that address pollutants of concern in the WMA, exchange ideas on how to address High Priority Water Quality Problems (HPWQPs) in the WMA, evaluate the effectiveness of actions, and collaborate on development of required submittals. In order to complete the objectives, the group performed assessments and conducted activities to address the water quality problems. These assessments and activities 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.

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. This information is not comprehensive and for some data sets, estimates were used to generate quantities of activities (this process is explained in [Appendix A](#)). The Copermittees believe that this is an important step to integrate the activities and reporting to best assess and plan for activities that address the identified HPWQPs on a HA basis.

The Copermittees will continue to refine and augment the Los Peñasquitos WURMP as they improve their understanding of the complex issues affecting the WMA in a continued effort to improve its effectiveness in protecting and improving water quality in the region. Such refinement and augmentation are supported by the iterative process used to develop and implement the Los Peñasquitos WURMP, which establishes mechanisms for stakeholders to evaluate priorities, improve coordination, assess program goals, and allocate finite resources in a cost-effective manner.

A summary of the program accomplishments for FY 2011 is found below:

Los Peñasquitos Watershed URMP Workgroup

Building on the efforts in previous reporting periods, the Copermittees continued to develop and implement a watershed-based program that addresses the HPWQPs and their sources in the Los Peñasquitos WMA. The Copermittees met nine (9) times over the course of the reporting period to plan, implement and assess watershed activities. Through workgroup collaboration, there has been an increase in the ability of the Copermittees to identify and address watershed source pollutants, an increase in public awareness, partnerships formed

with other organizations, and opportunities provided for collaboration resulting in cost-effective activities.

Water Quality Assessment

A water quality assessment was performed that includes a summary of analysis of the urban runoff and receiving waters in the Los Peñasquitos 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 *2010-2011 San Diego County Municipal Copermittees Receiving Waters and Urban Runoff Monitoring Report* (Regional Annual Monitoring Report) (Weston, January 2012) for FY 2011 in compliance with the San Diego Regional Water Quality Control Board Order No. R9-2007-0001. The water quality activities performed during this reporting period were based on the water quality priorities identified in the 2008 Los Peñasquitos WURMP. As such, they do not represent a change from the previous year's high-priority water quality problems and constituents of concern.

HPWQPs in the Los Peñasquitos WMA:

- Bacteria in both HAs
- Sedimentation in the Miramar HA

Pollutant Source Assessment

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.

Planning and Implementation of Watershed Activities

WURMP activities required by Order R9-2007-0001 were conducted during the reporting period. Collectively, seven (7) WURMP Watershed Activities were actively implemented for WURMP credit during the reporting period – this includes four (4) Water Quality Activities (one of which had an educational component) and three (3) Water Quality Education Activities. Additional activities were also in other phases such as planning and assessment in FY 2011. Each WURMP Activity is associated with at least one of the HPWQPs in each HA where the activity is implemented. Details of these activities are found in Section 4 and **Appendix B** of this Annual Report. The listing below identifies the activities actively implemented for WURMP credit:

Watershed Water Quality Activities

- Coastal Cleanup Day Sponsorship
- ILACSD Trash Cleanup Sponsorship
- Residential Rain Barrel Subsidies & Distribution
- Los Peñasquitos Property-Based Inspections

Watershed Education Activities

- Public Service Announcements: *Karma, Karma Second Chance, Karma Tourist*
- Fiesta de Los Peñasquitos
- Coastal Cleanup Day
- Residential Rain Barrel Subsidies & Distribution (Educational Component)

Activities selected and conducted by the Copermitees during the reporting period address the overall goal of the WURMP and the Permit by focusing on the HPWQPs within the WMA. The effectiveness of the individual activities is variable; however, collectively the Copermitees' program actions intend to have positive effects on water quality.

Effectiveness Assessment

The Copermitees continue to improve the program's effectiveness assessment by utilizing where appropriate the six-level assessment framework prepared by the Regional Copermitees 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. Although not comprehensive, the effectiveness assessment continues to lay the foundation for future in-depth evaluations of activities and program implementation.

Based upon the requirements of the Permit, the Copermitees are compliant and effective in implementing the Los Peñasquitos WURMP.

This page intentionally left blank
for reproduction purposes

1 INTRODUCTION

This Annual Report describes the Copermittees' activities during the reporting period (July 1, 2010 through June 30, 2011) to implement Order No. R9-2007-0001 (Permit), issued on January 24, 2007 by the San Diego Regional Water Quality Control Board (RWQCB). To respond to the Permit, the Copermittees worked collaboratively to improve water quality within the Watershed Management Area (WMA) throughout Fiscal Year (FY) 2011. The Copermittees will continue to work to implement, improve, and enhance their programs and activities.

This annual report was prepared as a collaborative effort by all jurisdictions within the watershed. The lead Copermittee in this watershed is the City of Poway. Other participating jurisdictions include the Cities of Del Mar and San Diego, and the County of San Diego.

The Permit requires that the Copermittees within the Los Peñasquitos Watershed collaborate in the development and implementation of a watershed-scale program that addresses urban runoff¹ quality. The rationale for this approach is simple: urban runoff does not adhere to jurisdictional boundaries and often travels through many jurisdictions while flowing to receiving waters. Therefore, the actions of multiple municipalities within a watershed can have a cumulative effect upon downstream receiving waters. The mechanism that the Permit uses to require watershed collaboration is the development and implementation of the Watershed Urban Runoff Management Plan (WURMP). The purpose of the WURMP is to collaboratively identify and address the highest priority water quality issues/pollutants in each watershed and to develop and implement activities to reduce pollutant contributions from jurisdictions' urban runoff, which is conveyed through their respective stormwater infrastructure, (i.e., their municipal separate storm sewer systems, or MS4s). In addition, the Permit requires that the Copermittees develop education, public participation, and land use planning activities that complement and enhance the goals and objectives of their water quality activity program.

Fundamental to both establishing specific WURMP goals and measuring achievement is the understanding that long-term solutions to water quality issues will be more effective if they are correctly, collaboratively, and comprehensively identified and characterized. Based upon the proper identification and targeted characterization, true "watershed-approach" solutions may be applied. The overall goal of the Los Peñasquitos Watershed Urban Runoff Management Program is to reduce the discharge of pollutants from the MS4 to the maximum extent practicable (MEP) and to prevent urban runoff discharges from causing or contributing to a violation of water quality standards.

Water quality priorities are evaluated each year and take into consideration the water quality assessment performed during each previous reporting period. The water quality activities performed during this reporting period were based on the water quality priorities identified in the 2008 Los Peñasquitos WURMP. For the Los Peñasquitos WMA, the water quality priorities are: bacteria and sediment.

To target these water quality priorities, the program has identified a series of ongoing and planned water quality, education, public participation, and land use activities. Using the collective watershed strategy as the basis for developing and implementing the activities, the

¹ Urban runoff in the context of this report generally follows the Order R9-2007-0001 definition, and includes stormwater from precipitation events and non stormwater dry weather flows.

Copermittees focused their efforts on the potential sources that are the likely high-priority pollutant contributors in the Los Peñasquitos WMA. This FY 2011 report details the implementation of the Los Peñasquitos WURMP’s collective watershed strategy.

1.1 COPERMITTEE COLLABORATION

1.1.1 LOS PEÑASQUITOS WURMP MEETINGS

The Copermittees met nine (9) times during FY 2011 to implement the Los Peñasquitos WURMP. All four (4) of the Los Peñasquitos Copermittees also participate in the San Dieguito WURMP, so to maximize efficiency and prevent overlap of discussion, these meetings were held concurrently with the San Dieguito WURMP Copermittees. The Copermittees collaborated to develop, prioritize and implement watershed activities that address HPWQPs and sources in the WMA and the development of the Annual Report. They also exchanged ideas on how to address HPWQPs in the WMA and evaluated the effectiveness of the watershed activities. **Table 1-1** is a summary of Los Peñasquitos WURMP meetings and an outline of agenda items discussed at these meetings.

Table 1-1 WURMP Meeting Dates and Agenda Items Discussed

Date	Agenda Items Discussed
7/8/2010	IRWM, Quality of Life Funding Strategy, TMDLs (Bacteria – Los Peñasquitos Lagoon), WURMP Activity Planning, Unfunded Mandate Test Claim Discussion
10/14/2010	Annual Water Quality Monitoring Report Update, WURMP Annual Report, Quality of Life Funding Strategy, TMDLs (Bacteria – Los Peñasquitos Lagoon), Watershed Activity Presentation (Beyond Inspections)
12/9/2010	WURMP Annual Report, Quality of Life Funding Strategy, TMDLs (Bacteria – Los Peñasquitos Lagoon), Workgroup Updates
1/13/2011	WURMP Annual Report, Quality of Life Funding Strategy, TMDLs (Bacteria – Los Peñasquitos Lagoon), Workgroup Updates
2/10/2011	WURMP Annual Report, Quality of Life Funding Strategy, TMDLs (Bacteria – Los Peñasquitos Lagoon), Workgroup Updates, Fiesta de Los Peñasquitos 2011
3/10/2011	Quality of Life Funding Strategy, TMDLs (Bacteria – Los Peñasquitos Lagoon), Workgroup Updates (Regional WURMP Workgroup & Program Planning Committee)
4/14/2011	Quality of Life Funding Strategy, TMDLs (Bacteria – Schedule, MOU, LRPs, Cost Sharing and Compliance Monitoring), Workgroup Updates (Regional WURMP Workgroup & Program Planning Committee)
5/11/2011	Quality of Life Funding Strategy, TMDLs (Bacteria – Schedule, MOU, LRPs, and Cost Sharing), Workgroup Updates (Regional WURMP Workgroup & Program Planning Committee), Fiesta de los Peñasquitos 2011
6/16/2011	TMDLs (Bacteria – Schedule, MOU, LRPs, and Cost Sharing; Peñasquitos Lagoon)

The general watershed meetings of the Los Peñasquitos WURMP Workgroup were led by the City of Poway, the WURMP lead Copermittee. A cost-share agreement was executed by the Copermittees to cover the cost of technical assistance for the watershed program. Activities and tasks were then carried out by the Copermittees, each within the structure of their jurisdictional organization. Task completion was tracked and assessed at the Workgroup meetings and reported in this Annual Report.

Lagoon TMDL

The Copermittees are assisting the RWQCB in the development of a sediment TMDL in the Los Peñasquitos WMA. The TMDL specifically addresses the issue of sedimentation/siltation within the lagoon. In FY 2007, the RWQCB issued Investigative Order R9 2006-76 for monitoring associated with Lagoon TMDL modeling. The Lagoon TMDL Investigative Order has resulted in the collection of a significant amount of hydrologic, hydraulic and water quality data for the lagoon and the associated WMA. Through monitoring during FY 2008, a significant amount of data was collected in order to calibrate and validate the TMDL models for pollutant load allocation. During FY 2009, the Copermittees as well as other dischargers and interested parties began meeting with RWQCB staff to begin developing the TMDL. In FY 2010 and FY 2011, the Copermittees continued to work with the RWQCB staff to complete the TMDL and prepare it for adoption by the RWQCB.

1.2 WATERSHED MAP UPDATE

The Los Peñasquitos WMA is located within west–central San Diego County. The WMA has two hydrologic areas (HAs) and extends from the foothills east of the City of Poway to the coastal plain where the watershed drains into Los Peñasquitos Lagoon before flowing into the Pacific Ocean through a narrow mouth at Torrey Pines State Beach. The Los Peñasquitos WMA is 60,419 acres and encompasses the drainage areas of Los Peñasquitos Creek, Carmel Creek, and Carroll Canyon Creek (Soledad Canyon), with the remaining 1,107 acres comprising the lagoon and coastal drainages. Land use within the overall Los Peñasquitos WMA is classified primarily as open space/parks and recreation (31%), residential (22%), vacant and undeveloped land (14%), and transportation (13%). However, there are several notable differences in land use composition among the three creek drainage areas and between the two HAs that make up the watershed. The Los Peñasquitos WMA is mostly within City of San Diego jurisdiction (71%), with the remaining areas in City of Poway (25%), County of San Diego (3%), and City of Del Mar (0.2%) jurisdiction. Over 60% of the watershed is privately owned land.

No updates have been made to the previously submitted Watershed Map. A copy of the most recent Watershed Map from the Los Peñasquitos WURMP Annual Report submitted in January 2009 can be found in **Attachment A** to this report.

1.3 ORGANIZATION AND CONTENT OF REPORT

SECTION 1 - Introduction

Section 1 of the Annual Report provides a summary of the Copermittees' efforts to implement the watershed program, including exchanging ideas and information on how best to address high-priority water quality pollutants in the watershed, as well as prioritizing water quality activities based on existing data and identified pollutant sources.

SECTION 2 - Water Quality Assessment

Section 2 provides an updated evaluation and analysis of the Los Peñasquitos WMA's receiving water conditions based on applicable water quality data from the *2010-2011 San Diego County Municipal Copermittees Receiving Waters and Urban Runoff Monitoring Report* (Regional Annual Monitoring Report) (Weston, January 2012).

SECTION 3 - Pollutant Source Assessment

Section 3 provides an update on the likely sources of urban runoff. Although the assessment covers the entire WMA, it specifically addresses the distinct hydrologic areas that it encompasses; therefore, where applicable, an assessment is provided for each HA.

SECTION 4 - Implementation of Watershed Activities

Section 4 describes activities implemented by the Copermittees during the FY 2011 reporting period to enhance the public's understanding of basic watershed principles and sources of water pollution. The activities selected and conducted by the Copermittees during FY 2011 address the overall goal of the WURMP and the Permit by focusing on the HPWQPs in both HAs.

SECTION 5 - Effectiveness Assessment

Section 5 provides an assessment of the implementation and effectiveness of the Los Peñasquitos WURMP for the FY 2011 reporting period using concepts from "A Framework for Assessing the Effectiveness of Jurisdictional Runoff Management Programs." The assessment includes evaluating compliance with the activity-based permit requirements, changes in knowledge and behavior, and best management practice (BMP) implementation and resulting changes in receiving water quality. Consistent with the requirements of the Permit, this assessment involves not only a comprehensive assessment of the WURMP, but also each water quality activity.

SECTION 6 - Conclusions

Section 6 provides conclusions and suggests improvements for focusing future program efforts based on the information presented in the Annual Report.

2 WATER QUALITY ASSESSMENT

This section provides an assessment of the 2010-2011 monitoring programs conducted in the Los Peñasquitos WMA. A complete presentation of the monitoring efforts conducted during the reporting period is located in the *2010-2011 San Diego County Municipal Copermittees Urban Runoff Monitoring Report* (Regional Annual Monitoring Report) (Weston, January 2012).

2.1 MONITORING PROGRAMS

Monitoring activities conducted in the WMA to comply with Order R9-2007-0001 are provided in **Table 2-1**. A map presenting the locations of the Mass Loading Station (MLS), Temporary Watershed Assessment Stations (TWAS), and the HAs is provided on the following page as **Figure 2-1**.

Table 2-1 2010-2011 Monitoring Program Activities

Program Data Set	Constituents Assessed	Number of Sites Assessed
Receiving Water Monitoring		7
Ambient Monitoring	Water chemistry, toxicity, bacteria, and trash	1 MLS, 2 TWAS, 1 SMC ¹
SMC Regional Monitoring ¹	Water chemistry, toxicity, bacteria, rapid stream bioassessment	1 SMC ¹
Wet Weather Monitoring	Water chemistry, bacteria, toxicity, trash	1 MLS, 2 TWAS
Post-Storm Sediment Pyrethroid Monitoring	Grain size, synthetic pyrethroid pesticides, TOC	1 MLS, 2 TWAS
Third-Party Data	General chemistry and bacteria	3 Coastkeeper
Urban Runoff Monitoring		446
Jurisdictional Dry Weather Monitoring	Field and analytical chemistry	194
Jurisdictional Dry Weather Monitoring	Trash	225
MS4 Outfall Random Dry Weather Monitoring	Chemistry and bacteria	6
MS4 Outfall Random Wet Weather Monitoring	Chemistry and bacteria	6
MS4 Outfall Targeted Dry Monitoring	Chemistry, metals, and bacteria	13
MS4 Outfall Targeted Wet Monitoring	Chemistry, metals, pesticides, and bacteria	0
Regional Source Identification Monitoring	General chemistry, metals, bacteria, and pesticides	1
CSDM Program	Coastal Outfall and Receiving Waters bacteria	1

1: 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.

CSDM – Coastal Storm Drain Monitoring

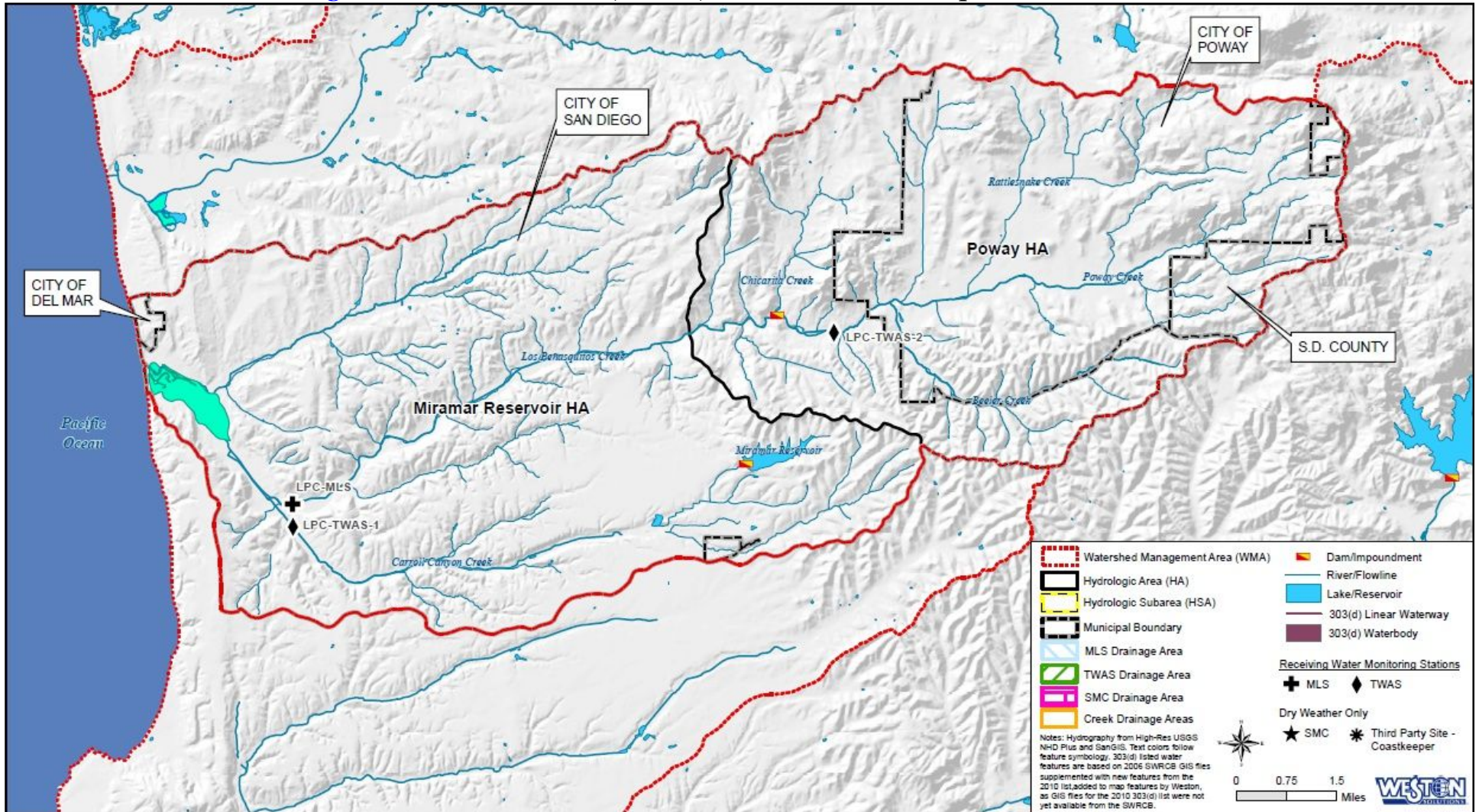
MLS – Mass Loading Station

SMC – Stormwater Monitoring Coalition

TOC – Total Organic Carbon

TWAS – Temporary Watershed Assessment Station

Figure 2-1 Location of MLS, TWAS, and HAs – Los Peñasquitos Creek WMA



2.2 303(D) LISTINGS

Within the watershed, contaminants identified on the 2010 State Water Resources Control Board (SWRCB) Section 303(d) list are provided in **Table 2-2** with relevant TMDL status/activity. On November 12, 2010, USEPA approved California’s 2008-2010 Section 303(d) list of impaired waters and disapproved the omission of several water bodies and associated pollutants that meet federal listing requirements. At that time, USEPA identified additional water bodies and pollutants for inclusion on the State’s 303(d) list and provided public notice and the opportunity for public comment on the proposed additions which ended December 23, 2010. On October 11, 2011, USEPA issued its final decision regarding the waters EPA added to the State’s 303(d) list.

Table 2-2 Los Peñasquitos WMA 2010 303(d) Listed Waterbodies and TMDL Status

Waterbody Name	HA	Pollutant/Stressor on 2010 SWRCB 303(d) List	TMDL Status
Los Peñasquitos Lagoon	906.1	Sedimentation/Siltation	In development – proposed for completion in 2019
Los Peñasquitos Creek	906.1	<i>Enterococcus</i> , Fecal Coliform, Selenium, TDS, Total Nitrogen as N	Proposed for completion in 2019
		Toxicity	Proposed for completion in 2021
Pacific Ocean Shoreline at Los Peñasquitos River Mouth	906.1	Total Coliform	Proposed for completion in 2019
Miramar Reservoir	906.1	Total Nitrogen as N	Proposed for completion in 2019
Soledad Canyon	906.1	Sediment Toxicity	Proposed for completion in 2019
		Selenium	Proposed for completion in 2021
Poway Creek	906.2	Selenium and Toxicity	Proposed for completion in 2021

Source: SWRCB, 2010

2.3 ASSESSMENT

This section includes an integrated presentation of the watershed monitoring during both ambient and wet weather. The integrated assessment incorporates the results from watershed receiving water and urban runoff monitoring (MS4, MLS, TWAS, and SMC), with the purpose of overlapping constituents between the programs. Assessments were conducted using data from multiple current and historical monitoring programs, and the results derived using a weight-of-evidence approach. Each HA in the Los Peñasquitos WMA was assessed individually and summarized for the entire WMA by program element in **Table 2-3**.

Table 2-3 Summary of WMA Assessment Findings

WMA	Monitoring Program Elements	Assessment	Summary of Findings
Los Peñasquitos WMA	Intermediate Receiving Water Monitoring ³	Ambient Receiving Water Assessment (MLS, TWAS, SMC, and 3 rd Party Data)	<ul style="list-style-type: none"> ▪ MLS and TWAS Constituents of Concern¹: <ul style="list-style-type: none"> - High priority: <i>Enterococcus</i>, TDS, Toxicity (<i>S. capricornutum</i> acute), Very Poor IBI. - Medium priority: Total P, Dissolved P. ▪ SMC Program (SMC02902)²: <ul style="list-style-type: none"> - High priority: Dissolved Oxygen, Chloride, Sulfate, Poor IBI, Total N, Total P, and TDS. ▪ Third Party Data (Coastkeeper): <ul style="list-style-type: none"> - High priority: <i>Enterococcus</i>. ▪ Lagoon, Estuary, and Bay Monitoring were not applicable during the 2010-2011 monitoring year.
		Wet Weather Receiving Water Assessment (MLS and TWAS)	<ul style="list-style-type: none"> ▪ MLS and TWAS Constituents of Concern¹: <ul style="list-style-type: none"> - High priority: Fecal Coliform, Very Poor IBI, TDS, TSS, Turbidity. - Medium priority: pH, Bifenthrin, Toxicity (<i>H. azteca</i> acute). ▪ Pyrethroid concentrations were below detection limits in all sediment samples. ▪ Lagoon, Estuary, and Bay Monitoring were not applicable during the 2010-2011 monitoring year.
		Rapid Stream Bioassessment	<p>One bioassessment sample is collected each year at each MLS and TWAS location during ambient conditions and used for both the ambient and wet assessment.</p> <ul style="list-style-type: none"> ▪ Altered benthic macroinvertebrate communities (Very Poor IBI ratings) were observed during the 2010-2011 monitoring year.
	Urban Runoff Monitoring	Ambient Urban Runoff Areas Assessment (Jurisdictional, MS4, CSDM)	<ul style="list-style-type: none"> ▪ Constituents of Concern¹: <ul style="list-style-type: none"> - High priority: <i>Enterococcus</i>, Total N, Total P, TDS. - Medium priority: Fecal Coliform. ▪ Trash assessments indicated portions of the lower watershed (906.1) had the highest occurrence of observed trash. Of the 225 sites monitored, 5% received a rating of marginal and 1% received a rating of poor. The remainder of the sites were rated as either optimal or suboptimal.
		Wet Weather Urban Runoff Areas Assessment (MS4)	<ul style="list-style-type: none"> ▪ Constituents of Concern¹: <ul style="list-style-type: none"> - High priority: Fecal Coliform. - Medium priority: TDS.
		Source Identification Program	<ul style="list-style-type: none"> ▪ Results suggest that single family residential land uses are likely contributors of the following constituents during wet weather events: <ul style="list-style-type: none"> - High priority: TSS, Turbidity, Dissolved Copper (site specific), Bifenthrin, Permethrin, and Fecal Coliform. - Medium priority: Cyfluthrin and pH. ▪ Dry weather constituents suggestively contributed by single family residential land uses include: <ul style="list-style-type: none"> - High priority: <i>Enterococcus</i>², Fecal Coliform², Total N², Total P², TDS².
	WMA Assessment	Receiving Water Trend Assessment	<p>Trends are based on historical data, including data from the 2010-2011 monitoring year:</p> <ul style="list-style-type: none"> ▪ Significantly increasing trends were observed for Fecal Coliform, Total Coliform, and Total Nickel. ▪ Significantly decreasing trends were observed for Total Lead and Total Organic Carbon.
		2011 Long-Term Effectiveness Assessment (LTEA) Ratings	<ul style="list-style-type: none"> ▪ WMA high priority ratings for Fecal Coliform, <i>Enterococcus</i>, Total P, Total N, TDS, Turbidity, Bifenthrin, Benthic Algae, and Toxicity. ▪ Results are generally consistent with the 5-year assessment in the LTEA. Bifenthrin and TSS were not confirmed during wet weather receiving water monitoring, and Bifenthrin and Benthic Algae not confirmed during ambient weather receiving water monitoring.

Notes:

- 1: High and medium priority constituents are determined following the WMA Assessment Methodology developed during the 2009-2010 Monitoring Season (Weston 2011).
 - 2: One sample used in the analysis.
 - 3: Intermediate receiving waters are creeks and rivers.
- IBI – Index of Biotic Integrity
TDS – Total Dissolved Solids
TSS – Total Suspended Solids

2.4 INTEGRATED ASSESSMENT

Assessment of the WMA during both wet weather and ambient conditions is presented in an integrated manner to present managers with an overall assessment of the WMA and to provide answers to the core management questions as described in the regional monitoring program. The integrated assessment incorporates both the ambient weather and wet weather assessments and provides a summary of the overall findings for the Los Peñasquitos WMA. The integrated assessment also identifies which priority constituents overlap between receiving waters and urban runoff. It is anticipated that MS4 Outfall Program data will bolster the assessment process as the data become available in future years. The integrated watershed assessment results are presented in **Tables 2-4** and **2-5**.

Table 2-4 Miramar 906.1 HA Integrated Assessment Findings

System Assessed	Annual Dry Weather Constituent Assessment ¹	Annual Wet Weather Constituent Assessment ¹
Intermediate Receiving Water Monitoring ³ (MLS, TWAS, and SMC)	<p>NPDES Program – MLS</p> <ul style="list-style-type: none"> • Chemistry – No priority constituents identified • Toxicity – <i>S. capricornutum</i> acute (Med) • Bioassessment – Very Poor IBI² • Bacteria – <i>Enterococcus</i> • Nutrients – Total Phosphorous (Med), Dissolved Phosphorous (Med) • TDS – Observed <p>NPDES Program – TWAS-1</p> <ul style="list-style-type: none"> • Chemistry – No priority constituents identified • Toxicity – <i>S. capricornutum</i> acute (Med) • Bioassessment – Very Poor IBI² • Bacteria – No priority constituents identified • Nutrients – No priority constituents identified • TDS – Observed <p>SMC Program (One Station)²</p> <ul style="list-style-type: none"> • Chemistry – DO, Chloride, Sulfate • Toxicity – No toxicity observed • Bioassessment – Poor IBI • Bacteria – Not analyzed • Nutrients – Total Nitrogen, Total Phosphorous • TDS – Observed <p>Third-Party Data (Coastkeeper)</p> <ul style="list-style-type: none"> • Bacteria – <i>Enterococcus</i> 	<p>NPDES Program – MLS</p> <ul style="list-style-type: none"> • Chemistry – No priority constituents identified • Toxicity – No toxicity observed • Bioassessment – Very Poor IBI² • Bacteria – Fecal Coliform (Med) • Nutrients – No priority constituents identified • TDS – Observed <p>NPDES Program – TWAS-1</p> <ul style="list-style-type: none"> • Chemistry – TSS, Turbidity, Bifenthrin (Med), pH (Med) • Toxicity – No toxicity observed • Bioassessment – Very Poor IBI² • Bacteria – Fecal Coliform (Med) • Nutrients – No priority constituents identified • TDS – Observed (Med) <p>Synthetic Pyrethroids in Sediment²</p> <ul style="list-style-type: none"> • No priority constituents identified
Urban Runoff Monitoring (MS4 Outfall and DWM)	<p>MS4 Program</p> <ul style="list-style-type: none"> • Chemistry – No priority constituents identified • Bacteria – <i>Enterococcus</i>, Fecal Coliform (Med) • Nutrients – Total Nitrogen, Total Phosphorous • TDS – Observed 	<p>MS4 Program</p> <ul style="list-style-type: none"> • Chemistry – No priority constituents identified • Bacteria – Fecal Coliform • Nutrients – No priority constituents identified • TDS – Not observed
MLS Trends⁴		
Increasing		Fecal Coliform, Total Coliform, Total Nickel
Decreasing		Total Lead, Total Organic Carbon

1: High and medium priority constituents are determined following the WMA Assessment Methodology developed during the 2009-2010 Monitoring Season (Weston 2011).

2: One sample used in the analysis.

3: Intermediate receiving waters are creeks and rivers.

4: Trends are based on historical data, including data from the 2010-2011 monitoring year.

DWM - Dry Weather Monitoring

IBI - Index of Biotic Integrity

Med - Medium Priority Constituent

MLS - Mass Loading Station

TWAS - Temporary Watershed Assessment Station

MS4 - Municipal Separate Storm Sewer System

SMC - Stormwater Monitoring Coalition

TDS - Total Dissolved Solids

TSS - Total Suspended Solids

DO - Dissolved Oxygen

Within the Miramar HA, ambient weather water quality issues outlined by the monitoring programs in both urban runoff and intermediate receiving waters include: *Enterococcus*, total nitrogen, total phosphorous, and TDS. Ambient weather medium-priority constituents include total and dissolved phosphorus. The Copermitees' 2011 Long-Term Effectiveness Assessment (LTEA) (MOE, LWA, Weston, 2011) rated TDS and *Enterococcus* as high

priorities, as well as benthic algae, which is rated as a low priority based on the 2010-2011 monitoring results. Medium priorities in the LTEA included total nitrogen (also found to be low priority during the 2010-2011 monitoring). The only high-priority constituent at TWAS-1 is TDS; the LTEA results are consistent, although *Enterococcus*, a low priority during the 2010-2011 monitoring, was identified as an additional high priority in the LTEA.

Fecal coliform is the only wet weather water quality issue outlined by the monitoring programs in both urban runoff and intermediate receiving waters. TDS is the only constituent designated as high-priority and fecal coliform is the only constituent as a medium priority at the MLS during wet weather. Results are generally consistent with the 5-year assessment in the LTEA, although fecal coliform was rated as a high-priority constituent in the LTEA. In addition, the LTEA identified bifenthrin as a medium-priority constituent (identified as a low-priority at the MLS during 2010-2011 monitoring). At the TWAS-1 monitoring station, high-priority constituents include TSS and turbidity, and medium-priority constituents include TDS, fecal coliform, pH, and bifenthrin. Results for turbidity, TDS, and bifenthrin are consistent with the LTEA. Fecal coliform was identified as a high priority and TSS was identified as a medium priority in the LTEA.

Long-term trend analysis in the Miramar HA is currently limited to wet weather data collected at the MLS. Three constituents are significantly increasing — fecal coliform, total coliform, and total nickel. Of these three constituents, only fecal coliform is above the wet weather water quality benchmark. Total coliform and total nickel do not have wet weather water quality benchmarks. Two constituents, total lead and total organic carbon (TOC), are significantly decreasing at the MLS. Neither constituent has a wet weather water quality objective, although total lead is decreasing at a rate of 2.94 mg/L per year, and TOC is reducing at a rate of 0.203 mg/L per year. These findings are similar to those of the LTEA. At present there are insufficient data to complete trend analyses on available dry weather receiving water data.

Table 2-5 Poway 906.2 HA Integrated Assessment Findings

System Assessed	Annual Dry Weather Constituent Assessment ¹	Annual Wet Weather Constituent Assessment ¹
Intermediate Receiving Water ³ Monitoring (MLS, TWAS, and SMC)	<p>NPDES Program – TWAS-2</p> <ul style="list-style-type: none"> • Chemistry – No priority constituents identified • Toxicity – <i>S. capricornutum</i> acute (Med) • Bioassessment – Very Poor IBI² • Bacteria – <i>Enterococcus</i> • Nutrients – No priority constituents identified • TDS – Observed <p>SMC Program (One Station)²</p> <ul style="list-style-type: none"> • Chemistry – DO, Chloride, Sulfate • Toxicity – No toxicity observed • Bioassessment – Poor IBI • Bacteria – Not analyzed • Nutrients – Total Nitrogen, Total Phosphorous • TDS – Observed 	<p>NPDES Program – TWAS-2</p> <ul style="list-style-type: none"> • Chemistry – TSS (Med), Turbidity (Med), Bifenthrin (Med) • Toxicity – <i>H. azteca</i> acute (Med) • Bioassessment – Very Poor IBI² • Bacteria – Fecal Coliform • Nutrients – No priority constituents identified • TDS – Observed (Med) <p>Synthetic Pyrethroids in Sediment²</p> <ul style="list-style-type: none"> • No priority constituents identified
Urban Runoff Monitoring (MS4 Outfall and DWM)	<p>MS4 Program</p> <ul style="list-style-type: none"> • Chemistry – No priority constituents identified • Bacteria – <i>Enterococcus</i>, Fecal Coliform (Med) • Nutrients – Total Nitrogen, Total Phosphorous (Med) • TDS – Observed 	<p>MS4 Program</p> <ul style="list-style-type: none"> • Chemistry – No priority constituents identified • Bacteria – Fecal Coliform • Nutrients – No priority constituents identified • TDS – Not observed

1: High and medium priority constituents are determined following the WMA Assessment Methodology developed during the 2009-2010 Monitoring Season (Weston 2011).

2: One sample used in the analysis.

3: Intermediate receiving waters are creeks and rivers.

DWM - Dry Weather Monitoring

IBI - Index of Biotic Integrity

Med - Medium Priority Constituent

MLS - Mass Loading Station

TWAS - Temporary Watershed Assessment Station

MS4 - Municipal Separate Storm Sewer System

SMC - Stormwater Monitoring Coalition

TDS - Total Dissolved Solids

TSS - Total Suspended Solids

DO - Dissolved Oxygen

Within the Poway HA, ambient weather water quality issues outlined by the monitoring programs in both urban runoff and intermediate receiving waters include: *Enterococcus*, total nitrogen, total phosphorous, and TDS. TDS and *Enterococcus* were rated as the ambient weather high-priority constituents at the TWAS-2 monitoring station. Both constituents were also identified as high priorities in the LTEA, along with total phosphorus and total nitrogen (total phosphorous and total nitrogen were both rated as low-priority in the current annual assessment).

Fecal coliform is the only wet weather water quality issue outlined by the monitoring programs in both urban runoff and intermediate receiving waters. Only fecal coliform is identified as a high-priority constituent at the Los Peñasquitos Creek TWAS-2 monitoring station during wet weather. Medium-priority wet weather constituents include TDS, TSS, turbidity, and bifenthrin. The LTEA identified most of the same constituents as priorities, however, TSS, turbidity, and bifenthrin were identified as high priorities in the LTEA, and TDS was not identified as a priority. In addition, the LTEA identified diazinon (a low-priority constituent based on the current annual monitoring) as a medium priority.

At present there are insufficient data to complete trend analyses on available ambient and wet weather receiving water data in the Poway HA as three (3) years of monitoring are necessary. Additional monitoring efforts will result in a more robust data set that may be analyzed for trends during future reporting periods.

2.4.1 HIGH PRIORITY WATER QUALITY PROBLEMS

Based on the assessments above and the available water quality data, the Copermittees have determined that the HPWQPs in the Los Peñasquitos WMA are:

1. Bacteria in both HAs
2. Sediment in the Miramar Hydrologic Area

It should be noted that the HPWQPs have not changed from previous assessments or the 2008 Los Peñasquitos WURMP.

This page intentionally left blank
for reproduction purposes

3 POLLUTANT SOURCE ASSESSMENT

This section identifies, to the extent possible, the potential sources, pollutant discharges, and/or other factors causing the Los Peñasquitos 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.

Table 3-1 summarizes the land use in each of the HAs. Land use information is generally associated with wet weather urban runoff where rainfall runoff mobilizes and transports pollutants from areas that are collectively associated with particular land uses. This is opposed to dry weather urban runoff that is generally associated with point dischargers such as residences, commercial facilities, etc. Pollutants in the dry weather urban runoff enter the runoff from pollutant generating activities and from the conveyance of urban runoff as it enters and travels through the MS4. Potential pollutant generating activities include irrigation runoff, sanitary sewer overflows, improper landscape maintenance, and improper use of fertilizers, herbicides, and pesticides.

Through four studies performed by the City of San Diego – *Tecolote Creek Microbial Source Tracking Summary* (City of San Diego, 2010); *San Diego River Source Tracking Investigation* (City of San Diego, 2010); *Dry Weather Bacterial Source Identification Study in the Mouth of Chollas Creek* (City of San Diego and Weston, 2009); and, *San Diego County Enterococcus Regrowth Study* (SCCWRP, 2012) – it was determined that environmental regrowth may be a potential source of bacteria. Specifically, concentrations of enterococci were found to be higher in catch basins than in runoff leading to those catch basins during both dry and wet weather, which indicates that regrowth in catch basins is a potentially uncontrollable, non-anthropogenic source. Additionally, the presence of water within the MS4 during dry weather, which in part can be caused by irrigation runoff², was found to provide both a transport mechanism and a potential site for environmental growth of bacteria. Bacterial growth and persistence in the environment is disconcerting because it represents a source that is potentially elevated in bacteria but poses little risk to human health (Grant et al., 2001; Ishii et al., 2007; Yamahara et al., 2009).

Tables 3-2 and **3-3** present an inventory of pollutant generating sources that the Copermittees currently track by HA. 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 (blue highlight). The process used to develop the tables was taken directly from the Copermittees' LTEA. The data used for the process includes the following: (1) results in the 2010-2011 Regional Annual Monitoring Report (Weston Solutions, January 2012); (2) current inventory information from all watershed Copermittees; and (3) the Source Loading Potential (SLP) ratings from the LTEA (MOE, LWA, Weston, 2011).

² Estimates of the relative contribution of irrigation runoff to dry weather flows are not known and are dependent on highly variable conditions in each watershed. However, the Copermittees have found through a Watershed Inspection pilot project conducted by the City of San Diego that 94% of commercial and industrial landscape areas showed some evidence of over-watering and over-spraying runoff. In addition, the Copermittees observed evidence of over-irrigation at more than 64% of commercial and industrial landscape areas through a Geographically Based Watershed Inspection pilot project conducted by the City of San Diego.

Table 3-1 Land Use Acreage by Hydrologic Area

Land Use	Hydrologic Area (acres)	
	906.1	906.2
Open Space	11,183.1	6,551.9
Single Family Residential	6,531.4	4,727.1
Roads and Freeways	4,908.0	2,596.9
Industrial	3,207.3	856.4
Multiple Family Residential	1,419.6	922.1
Vacant and Undeveloped Land	1,392.6	5,987.4
Commercial	1,291.2	743.3
Institutional	1,218.8	450.5
Parks, Golf Courses, Cemeteries	1,090.9	856.7
Agricultural, Orchards, Vineyards	218.2	364.9
Storage and Warehousing	185.1	46.9
Water Supply	137.2	0.0
Recreation	113.5	31.8
Spaced Rural Residential	112.9	2,653.7
Utilities	90.8	99.3
Health Services	76.6	50.7
Construction	68.8	71.0
Water	41.4	0.0
Automotive and Transportation	37.2	54.8
Junkyard, Dump, Landfill	0.0	27.2

Source: SANDAG, 2009

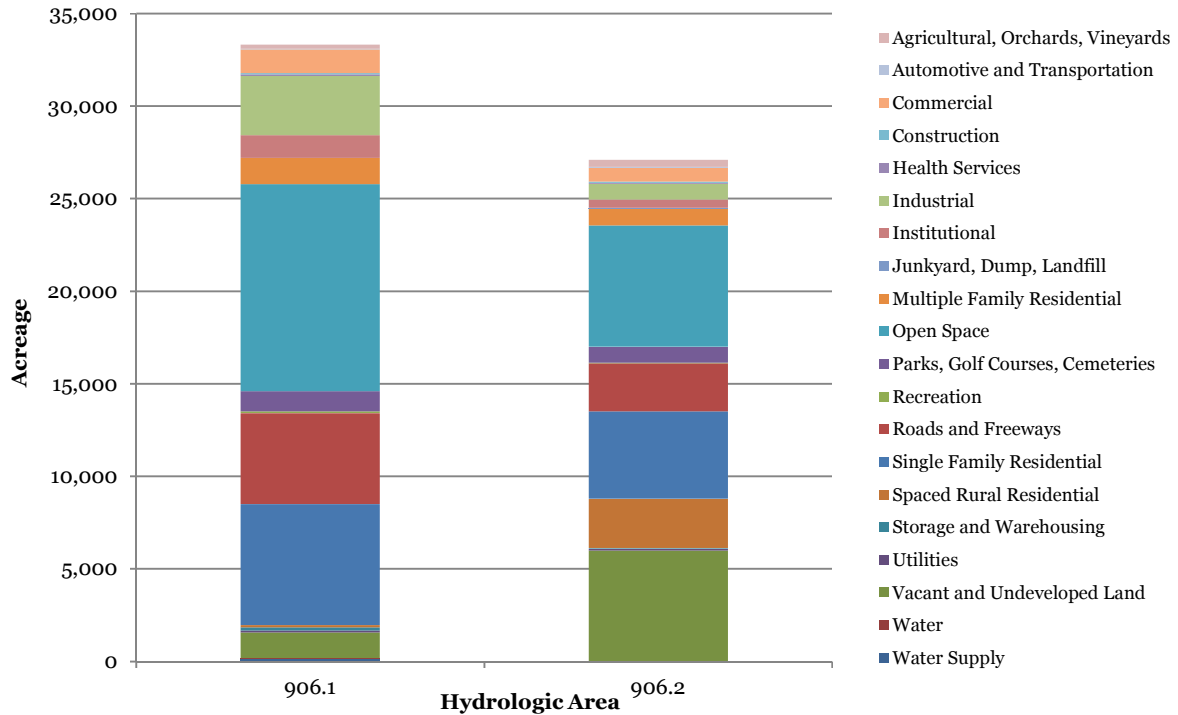


Table 3-2 Pollutant Generating Sources – 906.1 Miramar Hydrologic Area¹

Inventory Sites/Facilities ²	Quantities			Pollutant Source Loading Potential ³								
				Metals	Oil & Grease	Sediment	Pesticides	Nutrients	Bacteria/Pathogens	Dissolved Minerals	Organics	
Agriculture	3			UK	L	L	L	L	L	UK	L	
Animal	34			N	UL	L	UK	L	L	N	L	
Automotive	350			L	L	UL	UL	UK	UK	L	L	
Cemetery	2			UK	UK	UK	UK	L	UK	UL	UK	
Contractor	397			UL	UL	L	UL	UL	UL	UL	UL	
Food Establishment	663			N	L	UL	UK	UK	L	UL	L	
Equipment	114			L	L	UL	UL	UK	UL	UL	L	
Fueling	23			UK	L	UK	N	N	N	N	L	
General Industrial	103			L	L	UK	UK	UK	UK	UK	L	
General Retail	20			UL	UL	L	UL	UL	UL	UK	UL	
Golf	3			UK	UK	UK	UK	L	UK	UL	UK	
Health Services	2			N	UL	L	UK	L	UL	UK	L	
Institutional	6			L	UK	UK	UK	UK	UK	UK	UL	
Manufacturing	311			L	L	L	UL	UL	UL	UL	L	
Metal	57			L	L	UK	UK	UK	UL	UL	L	
Nursery	3			L	UL	L	L	L	L	UL	UL	
Stone & Aggregates	90			L	L	L	UL	UL	UL	UL	L	
Storage & Warehousing	728			L	L	L	UK	UK	UL	UL	L	
Municipal	High		Non-High		N	N	L	N	N	UK	UL	N
	89		1									
Construction	High	Medium	Low	UL	UL	L	UL	UL	UL	L	UL	
	23	41	1,339									
Residential	8,077 acres			L	L	L	L	L	L	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 (blue highlight).

1: Prepared based on the Copermittees FY 2011 JURMP Annual Reports. The methodology for developing the tables is included as [Appendix A](#) to this report.

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

3: Pollutant Source Loading Potential taken from LTEA 2011; N = None, UK = Unknown, UL = Unlikely, L = Likely.

Table 3-3 Pollutant Generating Sources – 906.2 Poway Hydrologic Area¹

Inventory Sites/Facilities ²	Quantities			Pollutant Source Loading Potential ³								
				Metals	Oil & Grease	Sediment	Pesticides	Nutrients	Bacteria/Pathogens	Dissolved Minerals	Organics	
Agriculture	1			UK	L	L	L	L	L	UK	L	
Animal	15			N	UL	L	UK	L	L	N	L	
Automotive	120			L	L	UL	UL	UK	UK	L	L	
Contractor	85			UL	UL	L	UL	UL	UL	UL	UL	
Food Establishment	342			N	L	UL	UK	UK	L	UL	L	
Equipment	46			L	L	UL	UL	UK	UL	UL	L	
Fueling	24			UK	L	UK	N	N	N	N	L	
General Industrial	21			L	L	UK	UK	UK	UK	UK	L	
General Retail	5			UL	UL	L	UL	UL	UL	UK	UL	
Golf	8			UK	UK	UK	UK	L	UK	UL	UK	
Health Services	1			N	UL	L	UK	L	UL	UK	L	
Manufacturing	86			L	L	L	UL	UL	UL	UL	L	
Metal	22			L	L	UK	UK	UK	UL	UL	L	
Nursery	5			L	UL	L	L	L	L	UL	UL	
Stone & Aggregates	23			L	L	L	UL	UL	UL	UL	L	
Storage & Warehousing	228			L	L	L	UK	UK	UL	UL	L	
Municipal	High		Non-High		N	N	L	N	N	UK	UL	N
	59		22									
Construction	High	Medium	Low	UL	UL	L	UL	UL	UL	L	UL	
	10	24	358									
Residential	8,274 acres			L	L	L	L	L	L	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 (blue highlight).

- 1: Prepared based on the Copermittees FY 2011 JURMP Annual Reports. The methodology for developing the tables is included as Appendix A to this report.
- 2: Other sources are not reported in this table including: Land Development and Non-inventoried Businesses.
- 3: Pollutant Source Loading Potential taken from LTEA 2011; N = None, UK = Unknown, UL = Unlikely, L = Likely.

4 IMPLEMENTATION OF ACTIVITIES

4.1 JURMP AND WATERSHED ACTIVITIES

The Copermittees are responsible for implementing Jurisdictional Urban Runoff Management Program (JURMP) activities throughout their jurisdictions in an effort to improve the water quality of urban runoff. 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.

Copermittees implemented activities in the watershed as part of the JURMP and WURMP programs. To develop meaningful analysis of the results and assessment of activities conducted, the data and information is reported on an HA basis. However, the JURMP data and information is not comprehensive and for some data sets, estimates were used to generate quantities on an HA basis – this estimation process is explained in **Appendix A** of the report.

In addition to their JURMP activities, the Copermittees are responsible for identifying and implementing watershed water quality 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 Los Peñasquitos WURMP.

The tables below present the Copermittees' efforts towards reporting all urban runoff management activities on a watershed basis. A comprehensive reporting of all urban runoff management activities 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 tables identify the WURMP and many of the JURMP activities that are associated with the HPWQPs in each HA.

Collectively, the Copermittees actively implemented four (4) watershed water quality activities and three (3) watershed education activities in the Miramar HA (906.1), and two (2) watershed water quality activities and three (3) watershed education activities in the Poway HA (906.2). Some of these activities overlapped HAs. The effectiveness assessments for these activities are presented on the Activity Implementation Sheets (**Appendix B**) and are summarized in the Section 5 – Effectiveness Assessment.

Table 4-1 JURMP and WURMP Activities – 906.1 Miramar Hydrologic Area*

Activity		Results			HPWQPs	
					Bacteria/ Pathogens	Sediment
Inspections # of Inspections: (Inventory #)	Agriculture	1: (3)			✓	✓
	Animal	14: (34)			✓	✓
	Contractor	96: (397)				✓
	Food Establishment	426: (663)			✓	
	General Retail	8: (20)				✓
	Health Services	0: (2)				✓
	Manufacturing	104: (311)				✓
	Nursery	2: (3)			✓	✓
	Stone & Aggregates	47: (90)				✓
	Storage & Warehousing	169: (728)				✓
	Construction	High	Medium	Low		✓
		292: (23)	319: (41)	6,397: (1,339)		
Municipal	High		Non-High			✓
	89: (89)		1: (1)			
Street Sweeping (Tons Collected)		830.7			✓	✓
Basins/Inlets/Ditches/MS4 (Tons Removed)		4,735.6			✓	✓
LP-WQA1	Coastal Cleanup Day Sponsorship			✓		
LP-WQA8	ILACSD Trash Cleanup Sponsorship			✓		
LP-WQA23	Residential Rain Barrel Subsidies & Distribution			✓	✓	
LP-WQA25	Los Peñasquitos Property-Based Inspections			✓	✓	
LP-WQEA2	Public Service Announcements: <i>Karma, Karma Second Chance, Karma Tourist</i>			✓		
LP-WQEA13	Fiesta de Los Peñasquitos			✓	✓	
LP-WQEA15	Coastal Cleanup Day			✓	✓	

*Prepared based on the Copermittees FY 2011 JURMP Annual Reports. The methodology for developing the tables is included as [Appendix A](#) to this report.

Table 4-2 JURMP and WURMP Activities – 906.2 Poway Hydrologic Area*

Activity		Results	HPWQP
			Bacteria/Pathogens
Inspections # of Inspections: (Inventory #)	Agriculture	0: (1)	✓
	Animal	4: (15)	✓
	Food Establishment	123: (342)	✓
	Nursery	0: (5)	✓
Street Sweeping (Tons Collected)		667.6	✓
Basins/Inlets/Ditches/MS4 (Tons Removed)		1,814.4	✓
LP-WQA23	Residential Rain Barrel Subsidies & Distribution		✓
LP-WQA25	Los Peñasquitos Property-Based Inspections		✓
LP-WQEA2	Public Service Announcements: <i>Karma, Karma Second Chance, Karma Tourist</i>		✓
LP-WQEA13	Fiesta de Los Peñasquitos		✓
LP-WQEA15	Coastal Cleanup Day		✓

*Prepared based on the Copermittees FY 2011 JURMP Annual Reports. The methodology for developing the tables is included as [Appendix A](#) to this report.

4.2 WATERSHED EDUCATION ACTIVITIES

This section describes activities implemented by the Copermittees during the FY 2011 reporting period to enhance the general public’s understanding of basic watershed principles and sources of water pollution. The Copermittees are responsible for identifying and implementing education activities that address the HPWQPs in the Los Peñasquitos WMA. The activity selection process is described fully in the 2008 Los Peñasquitos WURMP.

The Copermittees continue to make progress in developing and implementing programs aimed at improving storm water and urban runoff water quality in the WMA. [Table 4-3](#) below list the education activities implemented during FY 2011 by the Copermittees. In addition, other activities were in the active planning phase during the reporting period. For more details on all of the activities, refer to [Table 4-7](#) and [Appendix B](#).

Table 4-3 Watershed Education Activities Implemented During FY 2011

ID #	Activity/Project Name
LP-WQEA2	Public Service Announcements: <i>Karma, Karma Second Chance, Karma Tourist</i>
LP-WQEA13	Fiesta De Los Peñasquitos
LP-WQEA15	Coastal Cleanup Day
LP-WQA23	Residential Rain Barrel Subsidies & Distribution

The effectiveness assessments for these activities are presented in the Activity Implementation Sheets ([Appendix B](#)) and are summarized in Section 5 – Effectiveness Assessment.

4.3 PUBLIC PARTICIPATION ACTIVITIES

4.3.1 INTRODUCTION

The Public Participation component of the 2008 Los Peñasquitos WURMP encourages residents and organizations within the WMA (such as other agencies, private companies and environmental groups) to become involved in improving water quality in their communities. This is achieved through public meetings and community workshops, Project Clean Water and other methods including direct interaction of Los Peñasquitos WURMP Copermittee staff with members of the public.

4.3.2 ACTIVITIES CONDUCTED

WURMP documents and reports have been posted on the Project Clean Water website, <http://www.projectcleanwater.org>, where they are available to all interested stakeholders. During FY 2011, the Los Peñasquitos WMA web page on the Project Clean Water website received 1,287 hits and the Los Peñasquitos WURMP page received 358 hits. These totals are similar to those seen in the previous reporting period. A monthly breakdown of the site visits can be found in the tables below.

Table 4-4 Number of Hits: Project Clean Water Los Peñasquitos WMA Web Site

Jul 10	Aug 10	Sep 10	Oct 10	Nov 10	Dec 10	Jan 11	Feb 11	Mar 11	Apr 11	May 11	Jun 11	Total
122	136	142	131	203	145	48	59	90	61	65	85	1,287

Table 4-5 Number of Hits: Project Clean Water Los Peñasquitos WURMP Web Site

Jul 10	Aug 10	Sep 10	Oct 10	Nov 10	Dec 10	Jan 11	Feb 11	Mar 11	Apr 11	May 11	Jun 11	Total
31	40	37	47	41	37	28	17	27	16	15	22	358

Copermittees worked in cooperation with the Regional Education and Residential Sources workgroup. During this reporting period, the Copermittees participated in eight (8) community events outlined in the list below.

Outreach Events

The Copermittees collaborated to staff informational booths at special events throughout the watershed. During this reporting period Copermittees staffed booths at the following events and disseminated storm water related educational materials.

- June 11 - July 5, 2010 – San Diego County Fair
- September 19, 2010 – Poway Days Festival
- September 25, 2010 – Coastal Cleanup Day
- December 15, 2010 – Day Without a Bag (Countywide)
- April 16, 2011 – Poway Spirit Day
- May 1, 2011 – Fiesta de los Peñasquitos
- April 30, 2011 – Creek to Bay Cleanup
- June 18, 2011 – San Diego County Fair – Enviro Fair

Two cleanup events took place at four (4) locations in the WMA that included approximately 501 participants. These events are presented in **Table 4-6** below. Watershed concepts and principles were incorporated into outreach efforts at booth displays and event activities.

Table 4-6 Community Cleanup Events in FY 2011

Date	Name	Location	# of Participants	# of Pounds Removed	Hydrologic Area
9/25/2010	Coastal Cleanup Day	Torrey Pines and Los Peñasquitos Lagoon	133	89	Miramar (906.1)
		Los Peñasquitos Canyon Preserve	65	300	Miramar (906.1)
		Poway Community Park, Poway	170	168	Poway (906.2)
4/30/2011	Creek to Bay Cleanup	Torrey Pines State Beach	93	85	Miramar (906.1)
		Los Peñasquitos Canyon Preserve	40	2,155	Miramar (906.1)

Other events included focused presentations to residents, stormwater training for municipal employees, guided watershed hikes, residential oil and hazardous waste collections and tire collections.

4.3.3 FUTURE EFFORTS

The Copermittees will continue to provide opportunities for residents and other interested parties to participate in Los Peñasquitos WURMP activities. Draft documents and other information will be posted on the Project Clean Water website to elicit feedback. Community events and workshops will encourage involvement of all stakeholders in improving water quality throughout the Los Peñasquitos WMA.

4.4 COLLABORATIVE LAND-USE PLANNING EFFORTS

4.4.1 INTRODUCTION

The Land-Use Planning component of the 2008 Los Peñasquitos WURMP identifies several different activities and procedures designed to integrate watershed principles into comprehensive planning and to increase coordination of land-use planning goals and principles across Copermittees within the WMA. Effective land-use planning can provide important water quality protection by controlling the type and placement of activities allowed in critical areas, and by providing a framework within which site-specific control measures may be identified and imposed during land development and redevelopment activities.

4.4.2 ACTIVITIES CONDUCTED

Integrated Regional Water Management (IRWM)

The Copermittees have been active participants in the Integrated Regional Water Management (IRWM) planning process (IRWMPP) since its beginning in 2005. The IRWM Plan provides a mechanism for coordinating, refining and integrating existing planning efforts within a comprehensive, regional context; identifying specific regional and watershed-based priorities for implementation projects; and providing funding support for the plans, programs, projects, and priorities of existing agencies and stakeholders.

During FY 2010-11, the IRWM Program held five (5) Regional Advisory Committee (RAC) meetings providing updates on Basin Plan Triennial Review, Quality of Life Initiative, role of salinity management in water supply, and a discussion on the concept of the public goods charge for water. Participation in the IRWMPP has already led to funding approval for a number of BMP (Best Management Practice) installation projects that will benefit the region by reducing runoff. On January 7, 2011, the IRWM Program successfully submitted an implementation grant proposal for \$7.9 million to fund 11 projects as part of the Round 1 of Proposition 84 IRWM Implementation grants.

Quality of Life Funding Strategy

The County of San Diego has participated in the SANDAG Quality of Life Funding Strategy since 2009, taking the lead on the Water Quality Enhancement Element. The County has worked collaboratively with other Copermittees, as well as interested regional stakeholders, to explore a variety of funding options, develop a regional needs assessment (published in April 2011), and help establish funding priorities related to water quality. The Needs Assessment and Cost Estimate was developed primarily to provide water quality need and costing information to SANDAG, but has been found to be a useful tool when estimating costs for TMDLs that were recently adopted in the region. This is an ongoing effort that currently has a vision through 2016.

4.4.3 FUTURE EFFORTS

In FY 2012, the City and County of San Diego, as well as other WURMP Copermittees, will continue to participate in the IWRMP process, and the expenditure of grant money and implementation of BMP projects will continue. Monitoring the effectiveness and maintenance requirements of the BMPs during the lifecycle of the grant will allow for the development of recommendations for future use by the City and other jurisdictions.

The Los Peñasquitos WURMP Copermittees remain committed to encouraging collaborative, watershed-based land-use planning in their jurisdictional planning departments. The Copermittees will continue to work together to seek additional means of collaboration in this area.

4.5 UPDATED 5-YEAR STRATEGIC PLAN

4.5.1 NEW WMA ACTIVITIES

Proposed watershed activities Implementation Sheets can be found in **Appendix B**. New activity information includes a description of how each activity was selected, and how the activities are expected to abate sources and reduce pollutant discharges that may be causing the identified HPWQPs in the WMA.

Each activity on the WMA Activities List is fully described in an Activity Implementation Sheet that includes the following information:

1. A description of the activity;
2. A time schedule for implementation of the activity, including key milestones;
3. An identification of the specific responsibilities of WMA Copermittees in completing the activity;
4. A description of how the activity will address the identified HPWQP(s) of the WMA;
5. A description of how the activity is consistent with the collective watershed strategy;
6. A description of the expected benefits of implementing the activity; and
7. A description of how implementation effectiveness will be measured.

The Copermittees will implement identified WMA activities pursuant to the proposed schedule. For each Permit year, no fewer than two water quality activities will be in an active implementation phase. A water quality activity is in an active implementation phase when significant pollutant load reductions, source abatement or other quantifiable benefits to discharge or receiving water quality can reasonably be established in relation to the WMA's HPWQP(s). Water quality activities that are capital projects are in active implementation for the first year of implementation only.

See the Updated 5-Year Strategic Plan below for specific information about the implementation schedule for these new watershed activities.

4.5.2 UPDATED 5-YEAR STRATEGIC PLAN

This section describes the results of the Collective Watershed Strategy process described in the Los Peñasquitos WURMP. The strategy was specifically applied at the HA level in an effort to focus the Copermittees' activities at a scale in which actions and results can be reasonably measured.

To reiterate, the basic strategy applied was to first identify (where sufficient data is available) water quality problems. From those water quality problems, the Copermittees reviewed water quality data and used best professional judgment to determine the HPWQPs in each HA.

The second step was to identify the sources that are most likely to contribute (having the highest TTWQ ratings) to the HPWQPs for each HA-HPWQP combination in the WMA. Based on the available data, the Copermittees made appropriate management decisions on which water quality and education activities to implement in the WMA.

Where sufficient data was not available to make a determination about the state of water quality in an HA, the Copermittees used available information to identify where additional water quality monitoring may be conducted to effectively determine the level of water quality problems.

The updated 5-year strategic plan presented below is intended to supersede the earlier versions presented in the 2008 Los Peñasquitos WURMP and the FY 2008 through FY 2010 Los Peñasquitos WURMP Annual Reports.

Table 4-7 Updated 5-Year Strategic Plan

Activity/Project Name		Jurisdiction(s)	HPWQPs		Implementation Schedule			
			Bacteria	Sediment	FY 2011	FY 2012	FY 2013	Future Fiscal Year(s)
Watershed Water Quality Activities								
LP-WQA1	Coastal Cleanup Day Sponsorship	SD	✓		WQI	WQI	WQI	WQI
LP-WQA7	Rehco Road Hydrodynamic Separator Installation (formerly Marindustry Hydrodynamic Separator Installation)	SD	✓	✓	P	P	I	WQI
LP-WQA8	ILACSD Trash Cleanup Sponsorship	SD/POW	✓		WQI	WQI	WQI	WQI
LP-WQA9	Mira Mesa Bioretention and Infiltration Retrofit	SD	✓		P	P	P	M, WQI
LP-WQA11	Aubrey Street Continuous Deflective Separation (CDS) Device	POW		✓	A	A	A	-
LP-WQA12	Gate Drive Detention Basin Modification	POW	✓		A	A	A	-
LP-WQA16	Outdoor Water Conservation Rebate Program	SD	✓	✓	Completed – no longer reported			
LP-WQA19	City of San Diego Strategic Plan Implementation	SD	✓	✓	I	I	I	I
LP-WQA21	ESD Phased Green Mall and Underground Vault Project	SD	✓		P	P	P	WQI
LP-WQA22	Los Peñasquitos Lagoon Third Party TMDL Development	SD/POW DM/COUNTY		✓	P	I	-	-
LP-WQA23	Residential Rain Barrel Subsidies & Distribution	COUNTY	✓	✓	WQI	WQI	WQI	WQI
LP-WQA24	Stormwater Quality Master Plans For Special Drainage Fee	COUNTY	✓	✓	P	WQI	WQI	-
LP-WQA25	Los Peñasquitos Property-Based Inspections	SD	✓	✓	WQI	Completed – no longer reported		
LP-WQA26	Targeted Catch Basin Cleaning Pilot Study	SD	✓	✓	P	WQI	-	-
LP-WQA27	Rainwater Harvesting Rebate Pilot Program	SD	✓	✓	P	WQI	-	-
LP-WQA28	Residential Patrolling	DM	✓	✓	P	WQI	WQI	A

Table 4-7 Updated 5-Year Strategic Plan - Continued

Activity/Project Name		Jurisdiction(s)	HPWQPs		Implementation Schedule			
			Bacteria	Sediment	FY 2011	FY 2012	FY 2013	Future Fiscal Year(s)
Watershed Education Activities								
LP-WQEA2	Public Service Announcements: <i>Karma, Karma Second Chance, Karma Tourist</i>	SD	✓		WE	WE	E	E
LP-WQEA5	Infiltration BMP Retrofit Outreach	SD	✓		P	P	P	WE
LP-WQEA13	Fiesta de Los Peñasquitos	ALL	✓		WE	WE	WE	WE
LP-WQEA14	Los Peñasquitos Watershed Brochure	SD	✓	✓	P	WE	E	-
LP-WQEA15	Coastal Cleanup Day	POW/SD	✓	✓	WE	WE	WE	WE
LP-WQA23	Residential Rain Barrel Subsidies & Distribution	COUNTY	✓	✓	WE	WE	WE	WE

- WQI = Watershed Water Quality Activity Implementation (Active Implementation)
- I = Watershed Water Quality Activity Implementation (No WURMP Credit)
- A = Watershed Activity Assessment (No WURMP Credit)
- P = Watershed Activity Planning (No WURMP Credit)
- WE = Watershed Education Activity (Active Implementation)

- E = Watershed Education Activity (No WURMP Credit)
- PP = Watershed Public Participation Activity
- M = Water Quality Monitoring Activity (No WURMP Credit)
- S = Source ID/Characterization Activity (No WURMP Credit)

This page intentionally left blank
for reproduction purposes

5 EFFECTIVENESS ASSESSMENT

The Permit requires that the effectiveness of the WURMP program and activities be assessed on an annual basis. The purpose of the assessment is to determine if the management and implementation of the program is achieving its goals and objectives, to assess the effectiveness of the activities conducted to meet those goals and objectives, and to identify areas that may need improvement. This report section is written pursuant to the requirements of Section J.2.i of the Permit, and reports on the activities planned and implemented during FY 2011.

5.1 ASSESSMENT OF OVERALL WURMP EFFECTIVENESS

Activities collaborated upon and selected by the Copermittees address the overall goal of the WURMP by focusing on the HPWQPs within the WMA.

As set forth in the Permit and outlined in the 2008 Los Peñasquitos WURMP, the following minimum permit requirements (Level 1 Outcomes) are tracked annually to demonstrate permit compliance. This table describes whether or not compliance was demonstrated by the Copermittees in FY 2011, and where in this report required compliance points are fulfilled or described.

Table 5-1 Permit Component Compliance (Level 1)

Targeted Outcome	Measure	Report Section
Update any watershed maps.	Not Applicable	1
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 HPWQP(s) during the reporting period.	Completed	2
Identify the likely sources, pollutant discharges, and/or other factors causing the HPWQPs within the WMA.	Completed	3
Update list of potential Watershed Water Quality Activities.	Completed	4
Identify and describe the Watershed Water Quality Activities implemented by each Copermittee during the reporting period.	Completed	4
Update list of potential Watershed Education Activities.	Completed	4
Identify and describe the Watershed Education Activities implemented by each Copermittee during the reporting period.	Completed	4
Describe the public participation mechanisms used during the reporting period and the parties that were involved.	Completed	4
Describe Copermittee collaboration efforts including meeting as the San Dieguito WMA WURMP Workgroup.	Completed	1
Describe the efforts implemented to encourage collaborative, watershed-based, land-use planning.	Completed	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 meeting the TMDL numeric targets and WLAs, which incorporates the results of the effectiveness assessment, compliance monitoring, and an evaluation of additional efforts needed to date.	In Progress	5.2

As shown in **Table 5-1**, the Copermittees were in compliance with all Level 1 WURMP related Permit requirements during FY 2011.

5.1.1 ACTIVITIES ASSESSMENT

The effectiveness of each Watershed Water Quality and Watershed Education Activity is assessed on an annual basis. Data are typically collected and assessed during or after activity implementation to determine effectiveness in achieving targeted outcomes. Copermittees collaborated and selected activities that would address HPWQPs not only within each jurisdiction, but throughout the WMA. In some cases, these activities can reach a regional audience. The following is a description of the activities planned and implemented during this timeframe.

Each activity summary sheet in **Appendix B** identifies specific targeted outcomes (Levels 1 through 6 – as described in **Table 5-2** below) 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, while a capital project may result in pollutant load reductions (Level 4), it 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 implementation of an individual watershed activity would be measurable at Levels 5 or 6.

Table 5-2 Outcome Levels: Levels 1 through 6

Outcome Level		Anticipated Outcome of Activity	Effectiveness Metrics or Methods
1	Permit Compliance	Compliance with Permit requirement to implement Watershed Activities	Number of applicable Watershed Activities implemented per jurisdiction per year.
2	Changes in Attitudes	Increased awareness among the targeted audience regarding sources of pollutants and the need to reduce pollutant discharges/exposure.	Pre and post implementation surveys targeted audience attitudes.
3	Behavioral Change	Reduction in targeted audience behaviors that generate pollutants. Increase in targeted audience behaviors that support watershed health and water quality.	Pre and post implementation observations of targeted audience behavior. Behavior may be directly observed/measured or inferred from observed or documented conditions.
4	Load Reductions	Identification of sources and quantification of baseline loadings. Reduced volume of flow and/or reduced concentration of priority pollutants in dry and wet weather runoff.	Use permit required source identification monitoring data for targeted sources. If necessary, supplement with a special study.
5	Discharge Quality	Reduced volume of flow and/or concentration of priority pollutants in dry and wet weather discharges at storm drain outfalls.	Use permit required outfall and dry weather monitoring data down gradient of targeted sources. If necessary, supplement with a special study.
6	Receiving Water Quality	Reduced frequency of receiving water violations of WQOs for targeted priority pollutants.	Use permit required and other available regional monitoring data down gradient of targeted sources. If necessary, supplement with a special study.

During FY 2011, there were seven (7) activities in the active implementation phase, four (4) of which focused on water quality and three (3) focused on education. One of the water quality activities also included an educational component. These activities addressed the HPWQPs in the Los Peñasquitos WMA, which include bacteria and sediment, and are the activities that the Copermittees are counting towards the minimum requirement to have two active water quality and two active education activities each year. **Tables 5-3** and **5-4**

below, summarize the assessments of the water quality and education activities to provide a snapshot of the overall effectiveness of the watershed activities.

In addition to the WURMP activities included in the table, the Copermittees are presenting their JURMP activities that are related to the HPWQPs in each HA. It is important to note that not all JURMP activities are included in this presentation. For complete assessment of JURMP activities, the reader may review each WURMP Copermittee's FY 2011 JURMP Annual Report.

5.2 ASSESSMENT OF TMDL BMP IMPLEMENTATION PLAN EFFECTIVENESS

Regional Water Quality Control Board Order R9-2010-0001 (Bacteria TMDL) became effective on April 4, 2011. During the reporting period, the Copermittees initiated efforts to develop a Comprehensive Load Reduction Plan (CLRP). The CLRP is scheduled to be completed in October 2012 for submission to the RWQCB. The CLRP will include BMPs and activities selected specifically to address bacteria and other pollutants within the Los Peñasquitos WMA. At this time, there are no adopted TMDLs with BMP implementation plans currently in effect within the Los Peñasquitos WMA.

**Table 5-3 Summary of Implemented Activities for FY 2011 – 906.1 Miramar Hydrologic Area
(HPWQPs = Bacteria & Sediment)**

#	Activity:	Type:	Priority Problems Addressed:	Level Outcomes:	Pollutant Load Reduction, Source Abatement or Other Benefit Derived:
-	JURMP Construction and Industrial/Commercial Inspections	Water Quality	Bacteria & Sediment	Levels 1, 3, and 4	The Copermittees inspected the following business categories in the HA: Agricultural Facilities; Animal Facilities; Contractors; Food Establishments; General Retail Facilities; Health Service Facilities; Manufacturing Facilities; Nurseries; Stone & Aggregate Facilities; Storage & Warehousing Facilities; Municipal and Construction Sites.
-	JURMP MS4 Cleaning & Street Sweeping	Water Quality	Bacteria & Sediment	Levels 1 and 4	The Copermittees removed materials from the MS4 and by street sweeping which has a direct Load Reduction of bacteria and sediment in the HA. Approximately 831 tons were removed via street sweeping, and 4,736 tons were removed from the MS4 in this HA.
LP-WQA1	Coastal Cleanup Day Sponsorship	Water Quality	Bacteria	Levels 1 and 4	The City of San Diego contributed \$5,000 towards the Cleanup Sponsorship in the hydrologic area. During this event 65 participants removed 300 pounds of trash, debris, and recyclables for an efficiency of \$16.67 per pound collected.
LP-WQA8	ILACSD Trash Cleanup Sponsorship	Water Quality	Bacteria	Levels 1 and 4	The City of San Diego contributed an estimated \$5,000 towards the Cleanup Sponsorship in the hydrologic area. During this event 40 participants removed or recycled 2,155 pounds of trash and debris, of which approximately 2,005 pounds were recycled, for an efficiency of \$2.32/lb.
LP-WQA23	Residential Rain Barrel Subsidies & Distribution	Water Quality	Bacteria	Level 1	Rain barrel use is encouraged through a subsidy eligible to residents of unincorporated areas, and residents of incorporated cities are able to purchase rain barrels at an affordable price. The program promotes outdoor water conservation and runoff reduction through public outreach before and during rain barrel distribution events. A total of 185 residents participated in these events and a total of 240 rain barrels were sold.
LP-WQA25	Los Peñasquitos Property-Based Inspections	Water Quality	Bacteria & Sediment	Levels 1, 3, and 4	Inspections lead to education, BMP implementation, and load-reducing effectiveness. Inspections with immediate corrective actions initiated are confirmed source abatement activities. Additionally, when IC/IDs are observed, immediate corrections are required to eliminate the pollutant loading.
LP-WQEA2	Public Service Announcements: <i>Karma, Karma Second Chance, Karma Tourist</i>	Water Education	Bacteria	Levels 1, 2, and 3	Three Public Service Announcements (PSAs) were developed and broadcast on several TV and radio stations throughout the WMA from April to June 2011. The PSA used humor to convey the importance of the public's part in the proper disposal of trash and the impacts litter and pollution have on our waterways and beaches. 32% of residents reported making a change in their behavior as a result of seeing information about what polluted water in storm drains does to local rivers, beaches and the ocean.
LP-WQEA13	Fiesta de Los Peñasquitos	Water Education	Bacteria & Sediment	Levels 1 and 2	The event provided direct outreach regarding pollution prevention and pollutant reduction to the residents living in the local hydrologic area. Through assessments, the Copermittees established several findings based on surveys of the Fiesta participants: 68% of individuals surveyed that knew storm water is not treated, and 91% of those who took the survey knew about storm water pollution issues in neighboring waterways. Although 80% of respondents felt a strong or very strong obligation not to litter, more than 20% admitted to littering within the past year. Efforts were made to educate attendees on awareness of pollutant sources and pollution prevention methods.

#	Activity:	Type:	Priority Problems Addressed:	Level Outcomes:	Pollutant Load Reduction, Source Abatement or Other Benefit Derived:
LP-WQEA15	Coastal Cleanup Day	Water Education	Bacteria & Sediment	Levels 1 and 2	Educational presentation provided to cleanup volunteers during the Coastal Cleanup Day in the watershed. City staff conducted a presentation that included information on the watershed, the difference between the storm drain and the sanitary sewer, and pollutants affecting the watershed. Pre- and post-tests were provided to measure the effectiveness of the educational activity. Overall, respondent scores increased on average of 35% between the pre- and post-tests.

Table 5-4 Summary of Implemented Activities for FY 2011 – 906.2 Poway Hydrologic Area (HPWQP = Bacteria)

#	Activity:	Type:	Priority Problems Addressed:	Level Outcomes:	Pollutant Load Reduction, Source Abatement or Other Benefit Derived:
-	JURMP Industrial/Commercial Inspections	Water Quality	Bacteria	Levels 1, 3, and 4	The Copermittees inspected the following business categories in the HA: Animal Facilities and Food Establishments.
-	JURMP MS4 Cleaning & Street Sweeping	Water Quality	Bacteria	Levels 1 and 4	The Copermittees removed materials from the MS4 and by street sweeping which has a direct Load Reduction of bacteria and sediment in the HA. Approximately 668 tons were removed via street sweeping, and 1,814 tons were removed from the MS4 in this HA.
LP-WQA23	Residential Rain Barrel Subsidies & Distribution	Water Quality	Bacteria	Level 1	Rain barrel use is encouraged through a subsidy eligible to residents of unincorporated areas, and residents of incorporated cities are able to purchase rain barrels at an affordable price. The program promotes outdoor water conservation and runoff reduction through public outreach before and during rain barrel distribution events. A total of 185 residents participated in these events and a total of 240 rain barrels were sold.
LP-WQA25	Los Peñasquitos Property-Based Inspections	Water Quality	Bacteria	Levels 1, 3, and 4	Inspections lead to education, BMP implementation, and load-reducing effectiveness. Inspections with immediate corrective actions initiated are confirmed source abatement activities. Additionally, when IC/IDs are observed, immediate corrections are required to eliminate the pollutant loading.
LP-WQEA2	Public Service Announcements: <i>Karma</i> , <i>Karma Second Chance</i> , <i>Karma Tourist</i>	Water Education	Bacteria	Levels 1, 2, and 3	Three Public Service Announcements (PSAs) were developed and broadcast on several TV and radio stations throughout the WMA from April to June 2011. The PSA used humor to convey the importance of the public's part in the proper disposal of trash and the impacts litter and pollution have on our waterways and beaches. 32% of residents reported making a change in their behavior as a result of seeing information about what polluted water in storm drains does to local rivers, beaches and the ocean.
LP-WQEA13	Fiesta de Los Peñasquitos	Water Education	Bacteria	Levels 1 and 2	The event provided direct outreach regarding pollution prevention and pollutant reduction to the residents living in the local hydrologic area. Through assessments, the Copermittees established several findings based on surveys of the Fiesta participants: 68% of individuals surveyed that knew storm water is not treated, and 91% of those who took the survey knew about storm water pollution issues in neighboring waterways. Although 80% of respondents felt a strong or very strong obligation not to litter, more than 20% admitted to littering within the past year. Efforts were made to educate attendees on awareness of pollutant sources and pollution prevention methods.
LP-WQEA15	Coastal Cleanup Day	Water Education	Bacteria & Sediment	Levels 1 and 2	Educational presentation provided to cleanup volunteers during the Coastal Cleanup Day in the watershed. City staff conducted a presentation that included information on the watershed, the difference between the storm drain and the sanitary sewer, and pollutants affecting the watershed. Pre- and post-tests were provided to measure the effectiveness of the educational activity. Overall, respondent scores increased on average of 35% between the pre- and post-tests.

6 CONCLUSIONS AND PROGRAM IMPROVEMENTS

6.1 CONCLUSIONS

During FY 2011, the Copermittees strove to address the overall goal of the WURMP – to have a positive impact on the water quality of the Los Peñasquitos WMA – by focusing on its HPWQPs. In order to target the identified pollutants, the Copermittees employed the strategy articulated in their 2008 Los Peñasquitos WURMP, which attempts to link identified water quality problems to their potential sources. Based on the Water Quality Assessment in Section 2, the Copermittees determined that the HPWQPs in the Los Peñasquitos WMA are bacteria in both HAs and sediment in the Miramar HA.

The Los Peñasquitos WMA consists of two individual HAs. Therefore, to effectively address the WMA's water quality issues, the Copermittees identified and then evaluated the HPWQPs for likely sources at the individual HA level (see [Tables 3-2](#) and [3-3](#)). As a result of examining each HA in the WMA, the Copermittees drew some general conclusions: a) water quality problems appear to be well characterized in the receiving waters and consistent throughout the WURMP and Regional Monitoring Programs; and b) water quality and education activities appear to be targeting sources of the HPWQPs and are considered effective at reducing the impacts of the sources. Based on this analysis, the Copermittees focused their activities on the following suspected priority sources: residential areas/activities; eating and drinking establishments; agricultural facilities; animal facilities; nurseries, greenhouses and botanical/zoological gardens; stone and aggregate facilities; storage and warehousing facilities; and construction sites. Potential sources of bacteria and nutrients from the residential, commercial, and industrial communities include activities such as irrigation runoff, sanitary sewer overflows, improper landscape maintenance, and improper use of fertilizers, herbicides and pesticides.

The Copermittees then developed and implemented watershed water quality and education activities to address these HPWQPs and their sources. [Tables 4-1](#) and [4-2](#) summarize the activities implemented during the reporting period. However, because there is currently no definitive link between identified water quality sources and their impacts on water quality, it is difficult to quantitatively assess the activities' effect on overall water quality. Despite there being no currently established direct connection between the potential sources and water quality issues, the Copermittees undertook a qualitative assessment of their water quality activities, which determined that they were in compliance with all Level 1 Permit requirements (e.g., identifying likely pollutant sources, updating water quality and education activities, updating assessments and analyses, etc.). Moreover, seven (7) activities were actively implemented, four (4) of which focused on water quality and three (3) on education. All of these activities targeted the HPWQPs in the Los Peñasquitos WMA, which include bacteria and sediment. The Copermittees satisfied the Permit requirement by having at least two water quality activities and two education activities in active implementation during the reporting period.

The Copermittees performed additional JURMP activities addressing potential community sources during the reporting period. These included activities such as complaint response, dry weather urban runoff monitoring and source identification, and inspections of treatment control BMPs, as some in are designed to mitigate bacteria. Additionally, there are significant outreach events performed which are focused on the residential community

through the Copermittees' jurisdictional program and aimed at reducing over-irrigation, improper landscape maintenance, and improper use of fertilizers, herbicides, and pesticides.

In an effort to report on the Copermittees' actions to improve water quality in the WMA, the Copermittees continued the process of collecting and reporting on JURMP and WURMP activities performed on an HA basis. The Copermittees believe that it is an important step towards integrating the activities and reporting to best assess and plan for activities that address the identified HPWQPs on an HA basis.

The Copermittees have responded to meet the challenges of implementing the requirements outlined in the Permit as they continue to refine and improve their WURMP program. In addition to evaluating the WURMP program, the Copermittees worked diligently at a regional level with other WMA working groups during the reporting period to collaborate for consistent implementation of the WURMPs across the region. Furthermore, the Copermittees will continue to implement the activities described in Section 4 of this document in future reporting periods.

6.2 PROGRAM IMPROVEMENTS

The lack of water quality data directly related to sources makes true effectiveness assessment of the activities difficult. Without the data, the Copermittees are limited to qualitative assessments, which contain substantial assumptions linking the sources to the water quality problems. In order to work toward more effective management of water quality in the WMA, the Copermittees must further develop and characterize source inventories and research existing data related to the suspected sources, or collect data unique to the WMA. In doing so, the linkage between sources and pollutants may be more directly confirmed, allowing the Copermittees to justifiably prioritize the sources for activity development.

Moreover, once inventories are developed specific to the HAs, linkages need to be established between the suspected sources and water quality. This may be accomplished through a combination of research and analysis of existing data and monitoring. Significant source identification studies have been undertaken in southern California, which may provide relevant data linking some of the suspected sources to water quality problems in the WMA. In some studies, pollutant loading estimates specific to sources and/or land uses have been developed. There are also substantial amounts of data collected in the jurisdictional dry weather monitoring programs that may provide insight into specific sources, since this program is designed to detect illicit discharges and connections. To date, analysis of this data has been performed only at the macro level (i.e., evaluating the data from the larger watershed level). Analysis of the data at the HA level may provide useful information to the 2008 Los Peñasquitos WURMP.

In many cases, water quality data may be unavailable to accurately characterize loading from suspected sources. Where there is sufficient evidence of impacts to water quality from suspected sources, the Copermittees may need to collect water quality data to characterize the impacts. Without this confirmatory step, further assumptions related to effectiveness may be unsubstantiated. With confirmed linkages between the sources and the water quality problems, watershed Copermittees can prioritize activities and provide true, effective assessments of them and their impacts on water quality.

To further support the goal of the 2008 Los Peñasquitos WURMP – to determine and target the sources contributing to the HPWQPs – the Copermittees will continue to implement the following complementary objectives:

- Develop activities to assess and improve water quality within the WMA;
- Integrate watershed principles into land use planning;
- Enhance public understanding of water pollution sources; and
- Encourage and develop stakeholder participation.

This page intentionally left blank
for reproduction purposes

REFERENCES

Dry Weather Bacterial Source Identification Study in the Mouth of Chollas Creek, City of San Diego and Weston, 2009.

Los Peñasquitos Watershed Urban Runoff Management Program, Los Peñasquitos WURMP Copermittees, March 2008.

San Diego County *Enterococcus* Regrowth Study; Ferguson and Griffith, Southern California Coastal Water Research Program (SCCWRP), 2012.

San Diego County Municipal Copermittees 2009-2010 Receiving Waters and Urban Runoff Monitoring Final Report; Weston, January 2011.

San Diego County Municipal Copermittees 2010-2011 Receiving Waters and Urban Runoff Monitoring Final Report; Weston, January 2012.

San Diego Stormwater Copermittees Long-Term Effectiveness Assessment (LTEA); MOE, LWA, and Weston; 2011.

San Diego River Source Tracking Investigation – Phase I, City of San Diego, 2010.

Tecolote Creek Microbial Source Tracking Summary, Phases I, II, and III; City of San Diego, 2010.

Grant, S. B., et al. (2001). "Generation of Enterococci Bacteria in a Coastal Saltwater Marsh and Its Impact on Surf Zone Water Quality" *Environmental Science & Technology* 35(12): 2407–2416.

Ishii, S., et al. (2007). "Beach sand and sediments are temporal sinks and sources of *Escherichia coli* in Lake Superior" *Environmental Science & Technology* Apr 1; 41(7): 2203-2209.

Yamahara, K. M., S. P. Walters and A. B. Boehm (2009). "Growth of Enterococci in Unaltered, Unseeded Beach Sands Subjected to Tidal Wetting." *Applied and Environmental Microbiology* 75(6): 1517-1524.