LOS PEÑASQUITOS WATERSHED
URBAN RUNOFF MANAGEMENT PROGRAM

FISCAL YEAR 2008
ANNUAL REPORT

January 31, 2009

Prepared and Submitted by the Los Peñasquitos Watershed Copermittees

City of Del Mar
City of Poway
City of San Diego
County of San Diego

City of Del Mar
1050 Camino Del Mar · Del Mar, California 92014-2698

Where the Turf meets the Surf

January 30, 2008

RE: STATEMENT OF CERTIFICATION
FY 2008 Watershed Urban Runoff Management Program Annual Report for the Los Peñasquitos Watershed Management Area

I certify under penalty of law that the FY 2008 Watershed Urban Runoff Management Program Annual Report for the Los Peñasquitos Watershed Management Area was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for knowingly submitting false information, including the possibility of fine and imprisonment for knowing violations.

Karen P. Brust
City Manager
City of Del Mar

Telephone: (858) 755-9313 · Fax: (858) 755-2794

CITY OF POWAY

January 30, 2008

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Robert J. Manis
Director of Development Services
City of Poway

THE CITY OF SAN DIEGO

January 30, 2008

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FY 2008 Watershed Urban Runoff Management Program Annual Report for the Los Peñasquitos Watershed Management Area

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Kris McFadden
Deputy Director
Storm Water Department
City of San Diego

DIVERSITY BRINGS US ALL TOGETHER

Storm Water Department
9370 Chesapeake Drive, Suite 100, MS 1900 • San Diego, CA 92123
Hotline (619) 235-1000 Fax (858) 541-4350

STATEMENT OF CERTIFICATION

Los Penasquitos Watershed Urban Runoff Management Plan (WURMP) FY 2007-2008 Annual Report

I certify, under penalty of law, that the County of San Diego's contributions to the **FY 2007-2008 Los Penasquitos Watershed Urban Runoff Management Plan (WURMP) Annual Report** were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Chandra Wallar

CHANDRA L. WALLAR
Deputy Chief Administrative Officer
County of San Diego

1-21-09

Date

APPENDIX A – Watershed Activity Sheets

FIGURES

TABLES

EXECUTIVE SUMMARY

Since January 2002, the County of San Diego and the Cities of Poway, San Diego and Del Mar (herein referred to as the "Los Peñasquitos WURMP Copermittees") have been active in planning, developing and implementing watershed-based programs in the Los Peñasquitos Watershed Management Area (WMA). This Annual Report describes the actions taken by Los Peñasquitos WURMP Copermittees in Fiscal Year (FY) 2008 (July 1st, 2007 to June 30th 2008) 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 Annual Report consists of the following sections:

Section 1 (Introduction) provides a brief overview of the information included in the Annual Report.

Section 2 (Water Quality and Pollutant Source Assessment) includes a summary of an assessment of the quality of the water and pollutant sources in the Los Peñasquitos WMA based on data collected and analyzed from July 2007 through June 2008. In order to assess the water quality of regional WMAs on a yearly basis, Regional Copermittees completed the *San Diego County Municipal Copermittees Urban Runoff Monitoring Report* (Annual Monitoring Report) for FY 2008 in compliance with the San Diego Regional Water Quality Control Board Order No. R9-2007-0001. Based on the data and findings of this report, the Los Peñasquitos WURMP Copermittees have decided to focus their efforts on targeting the following High Priority Water Quality Problems for the Los Peñasquitos WMA:

- Bacteria
- Sediment

Section 3 (Implementation of Watershed Activities) contains a review of the water quality, education and public participation activities as well as the collaborative land-use planning efforts that occurred during the reporting period as a direct result of the Los Peñasquitos WURMP Copermittees' efforts in implementing the Los Peñasquitos WURMP. The Los Peñasquitos WURMP Copermittees implemented six water quality activities and developed and implemented educational programs aimed at decreasing urban runoff and improving water quality. All of these activities are anticipated to have a positive impact on water quality. Specifically, the following water quality activities were in active implementation during the reporting period:

- LP-WQA1 San Diego Coastkeeper Trash Cleanup Sponsorship
- LP-WQA2 Targeted Inspections (Combined)
- LP-WQA6 Alpha Project for the Homeless, Inc. Trash Cleanups
- LP-WQA8 ILACSD Trash Cleanup Sponsorship
- LP-WQA11 Aubrey Street Continuous Deflective Separation Device
- LP-WQA12 Gate Drive Detention Basin Modification

In addition, the following three education activities were in active implementation during FY 2008:

- LP-WQEA1 Mobile Advertising
- LP-WQEA2 Public Service Announcements
- LP-WQEA8 Transit Shelters

Detailed information for each activity can be found in the Activity Implementation Sheets located in Appendix A and in Table 3-6 in Section 3.

This section also includes a discussion on the collaborative public participation and land-use planning efforts that took place in the Los Peñasquitos WMA during the reporting period. For example, the Los Peñasquitos WMA web page on the Project Clean Water website received 1,487 hits and the Los Peñasquitos WURMP page received 440 hits during FY 2008. These totals were similar to those seen in the previous reporting period. The Los Peñasquitos WURMP Copermittees will continue to provide opportunities for residents and other interested parties to participate in Los Peñasquitos WURMP activities in FY 2009. Community events and workshops will encourage involvement of all stakeholders in improving water quality throughout the Los Peñasquitos WMA.

A discussion of the Updated 5-Year Strategic Plan is also included in this section. In order to address Priority Water Quality Problems in the WMA—and in particular the High Priority Water Quality Problems discussed above—the Los Peñasquitos WURMP Copermittees implemented the Collective Watershed Strategy process described the 2008 Los Peñasquitos WURMP. The strategy was specifically applied at the Hydrologic Area (HA) level in an effort to focus the Copermittees' activities at a scale in which actions and results can be reasonably measured. The basic strategy applied was to first identify and review water quality problems. From those water quality problems, the Copermittees reviewed water quality data and used best professional judgment to determine the High Priority Water Quality Problems in each HA. The second step was to identify the sources that are most likely to contribute to the High Priority Water Quality Problems for each HA 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.

Section 4 (Effectiveness Assessment) provides an assessment of overall effectiveness of the Los Peñasquitos WURMP. The assessment includes activity specific assessments as well as a comprehensive summary of the effectiveness of the WURMP activities implemented during the reporting period.

Section 5 (Conclusions and Recommendations) offers concluding remarks regarding the accomplishments of the Los Peñasquitos WURMP Copermittees in implementing the 2008 Los Peñasquitos WURMP, and recommendations for further refining the program.

The Los Peñasquitos WURMP 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.

In short, the Los Peñasquitos WURMP Annual Report presents an update on the Los Peñasquitos WURMP Copermittees' long-term efforts to protect and enhance the water quality of the WMA using a comprehensive watershed-based approach.

1 INTRODUCTION

The San Diego Regional Water Quality Control Board Order No. R9-2007-0001 (Municipal Permit) requires Copermittees sharing jurisdiction within the Los Peñasquitos Watershed Management Area (WMA) to collaborate on the development and implementation of a Watershed Urban Runoff Management Program (WURMP) for the WMA. The WURMP consists of the Copermittees' combined efforts to address high priority surface water quality issues throughout the Los Peñasquitos WMA. The program includes identifying and addressing High Priority Water Quality Problems in the WMA, and developing and implementing activities that address pollutant load reduction and pollutant source abatement (Watershed Water Quality Activities); improvements in the public's knowledge, awareness and behaviors (Watershed Education Activities); as well as public participation and collaborative land use planning. The updated Los Peñasquitos WURMP was submitted to the San Diego Regional Water Quality Control Board (RWQCB) and began implementation in March 2008.

The new Municipal Permit was adopted in 2007 by the RWQCB and will be in effect until 2012. It is worth noting that because the current Municipal Permit was adopted during Fiscal Year (FY) 2008, this Annual Report covers two permit periods (the previous San Diego Region Order No. 2001-01 and the current San Diego Region Order No. R9-2007-0001).

The following Annual Report is divided into five sections that highlight the Copermittees' efforts to reduce urban runoff and improve water quality in the Los Peñasquitos WMA during the FY 2008 reporting period. The reporting period is from July 1st, 2007 through June 30th, 2008.

1.1 COPERMITTEE COLLABORATION

1.1.1 LOS PEÑASQUITOS WURMP MEETINGS

In order to effectively plan and implement the Los Peñasquitos WURMP, the Copermittees met eleven (11) times during FY 2008 to update 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 in the WMA; evaluate the effectiveness of actions; and collaborate on development of required submittals. See Table 1-1 below for dates of meetings and pertinent agenda items discussed at these meetings.

Table 1-1 WURMP Meeting Dates and Agenda Items Discussed

Date	Agenda Item Topics
7/23/2007	WURMP Update - watershed strategy & activity development; cost-share agreements; public participation
8/27/2007	WURMP Update - watershed strategy & activity planning; TMDL process; cost-share agreements; public participation; WURMP Annual Reports
9/10/2007	WURMP Update - watershed strategy & activity planning; TMDL process; cost-share agreements; public participation; WURMP Annual Reports
10/9/2007	WURMP Update - watershed strategy & activity planning; TMDL process; public participation; WURMP Annual Reports

Date	Agenda Item Topics
10/31/2007	WURMP Update - watershed strategy & activity planning; TMDL process; public participation; WURMP Annual Reports
1/10/2008	WURMP Update - watershed strategy & activity planning; TMDL process; public participation; WURMP Annual Reports
2/12/2008	WURMP Update - watershed strategy & activity planning; TMDL process; public participation
3/6/2008	WURMP Update - watershed strategy & activity planning; TMDL process; public participation
4/8/2008	WURMP Submittal; RWQCB Audits; Regional Monitoring Report; public participation
4/23/2008	Watershed Presentation; TMDL process; public participation; activity updates
6/5/2008	Watershed Presentation; TMDL process; public participation; activity updates

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 developed are then carried out by the Copermittees, each within the structure of their jurisdictional organization. Task completion is then tracked and assessed at the Workgroup meetings and reported in the Annual Report.

Lagoon TMDL Investigative Order

The Los Peñasquitos WURMP Copermittees have assisted in the development of an important TMDL program in the Los Peñasquitos WMA currently under development by the RWQCB. The TMDL is the Impaired Lagoons, Adjacent Beaches and Agua Hedionda Creek TMDL (Lagoon TMDL). The Lagoon TMDL affects the Los Peñasquitos Lagoon in the WMA and specifically addresses sediment in the WMA as well as other constituents in other WMAs. During FY 2006, TMDL planning occurred. In FY 2007, the RWQCB issued Investigation Order R9 2006-76 for monitoring associated with Lagoon TMDL modeling. The Lagoon TMDL Investigation 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.

1.2 WATERSHED MAP UPDATES

The Copermittees have provided a watershed map as Attachment 1.

2 WATER QUALITY AND POLLUTANT SOURCE ASSESSMENT

This section provides an updated water quality assessment and pollutant source assessment based upon previously established strategies and processes presented in the 2008 Los Peñasquitos WURMP. This assessment is required to clearly describe and justify any changes made to the WMA's water quality problems since the previous reporting period.

The water quality assessment provides an updated evaluation and analysis of the Los Peñasquitos WMA's receiving waters conditions based on applicable water quality data, reports, analyses, and other information. The update in this annual report is based on the assessment strategy described in the 2008 Los Peñasquitos WURMP, and includes information from the 2007-2008 *San Diego County Municipal Copermittees Urban Runoff Monitoring Report* (Urban Runoff Monitoring Report) (Weston, January 2009). The assessment concludes with identification of the High Priority Water Quality Problems for each applicable WMA. As will be described below, no changes in the WMA's water quality problems were identified as a result of the monitoring conducted during the FY 2008 reporting period.

The pollutant source assessment provides an update of the likely sources of pollutant loads in urban runoff based on the currently available data associated with the urban runoff management programs. The source update is directly associated with the identified High Priority Water Quality Problems identified in the water quality assessment.

2.1 WATER QUALITY ASSESSMENT

During the FY 2008 reporting period, the regional water quality monitoring program implemented new changes to both timing and location of monitoring. In addition to the historical Mass Loading Station (MLS) within the Los Peñasquitos WMA, the Copermittees funded two Temporary Watershed Assessment Stations (TWAS) in key upstream locations of the WMA. During the reporting period, each MLS and TWAS was monitored during both wet weather and ambient seasonal conditions. In previous reporting periods, only wet weather monitoring was conducted at the MLS.

In addition to the MLS and TWAS locations, numerous dry weather sites, coastal storm drains and bioassessment stations were monitored during the reporting period. Figure 2-1 below identifies the various monitoring activities in the WMA.

Aggregate monitoring data from all the monitoring sites was used to assess the overall condition of the WMA. Where applicable, the data was also used to evaluate the water quality conditions in specific areas of the WMA.

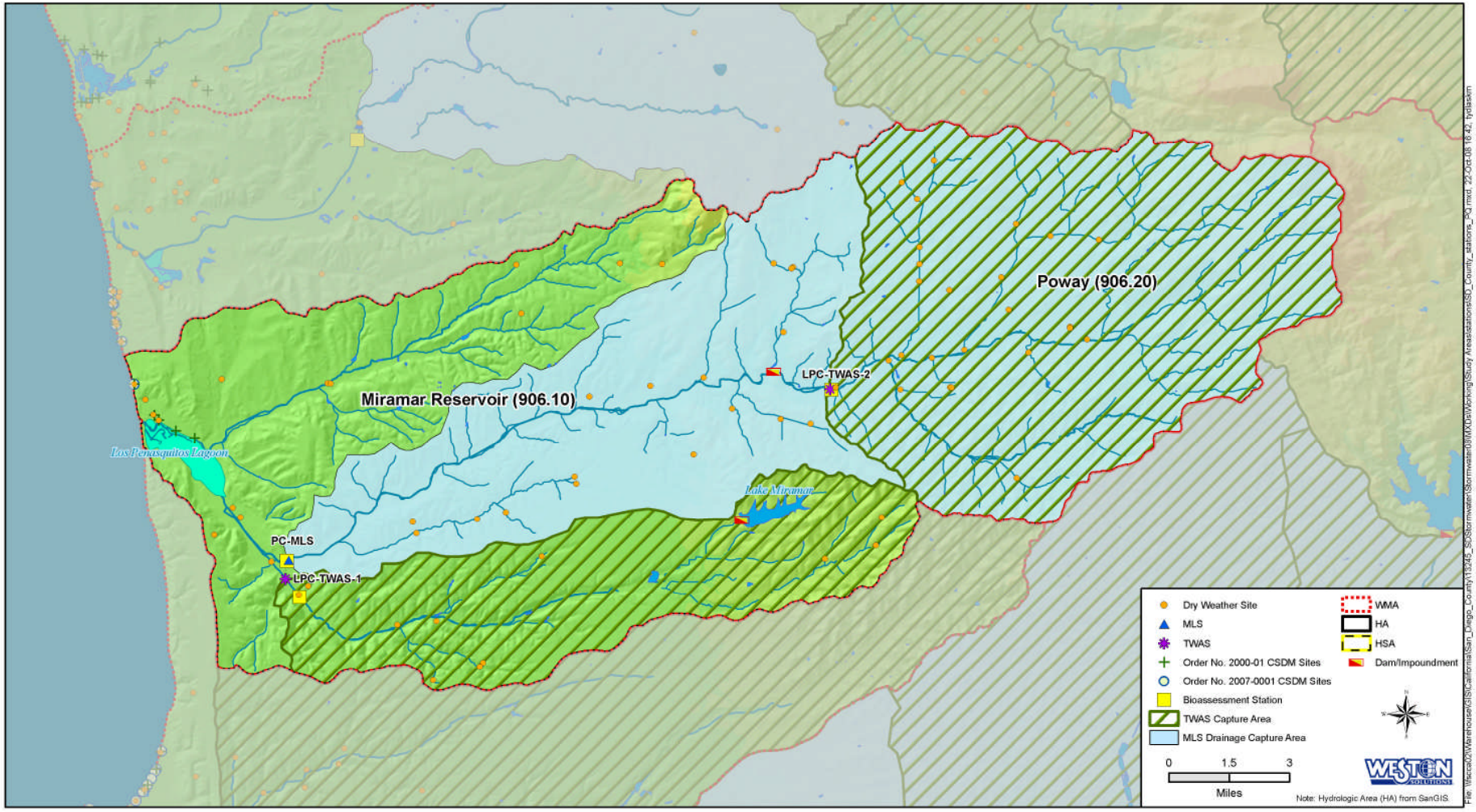

Figure 2-1. Los Peñasquitos Watershed Management Area 2007–2008 Monitoring Station Location Map

The following receiving waters condition information is taken from the Urban Runoff Monitoring Report (Weston, January 2009). During the FY 2008 monitoring period, the Los Peñasquitos WMA was assessed for the first time under the requirements of Order R9-2007-0001 which expanded the scope of Regional Monitoring requirements to now include the following:

- Monitoring continues at MLS and TWAS during two ambient weather events and two wet weather events. This required the modification of water quality benchmarks (benchmarks) used to assess water quality concentrations. The Copermittees developed a new set of benchmarks based on current and environmentally relevant water quality values. The benchmarks and their associated references are provided in the Methods Section of the Urban Runoff Monitoring Report.
- Ambient weather monitoring water quality results for nutrients were assessed using the Nutrient Numeric Endpoint (NNE) Model to evaluate whether beneficial uses have the potential to be impaired due to concentrations of nitrogen and phosphorus in receiving waters.
- Bioassessment monitoring during the 2007–2008 Monitoring Season was only required during Spring 2008.
- The WMA assessment methodology was modified to assess ambient weather receiving water quality conditions. This provides an assessment of both wet weather and dry weather as well as an integrated assessment of water quality conditions in the WMA.

The WMA assessment methods presented in the Urban Runoff Monitoring Report were applied to these data to determine which constituents are of concern and to develop a high, medium or low frequency of occurrence for these constituents. It should be noted that the added complexity of the Urban Runoff Monitoring Program for 2007-2008, to comply with the Municipal Permit, resulted in an expanded set of results that are summarized in new assessment tables below.

2.1.1 AMBIENT WATER QUALITY ASSESSMENT

The first assessment includes an evaluation of the new ambient weather receiving water quality. A summary of the data is presented in Table 2-1. As shown, ambient weather monitoring at the MLS and both TWAS are in their first year; therefore, the results of this assessment are only indicative of conditions over the 2007–2008 monitoring season. In the Los Peñasquitos WMA, five constituents were classified as ambient weather constituents of concern (COC_a) with a low, medium or high frequency of occurrence. These constituents include: TDS, turbidity, total coliform, fecal coliform, and enterococci.

TDS and enterococci were each identified as a high frequency of occurrence COC_a in 2007–2008 and each received three diamonds. The rating for TDS and enterococci are based on Criterion No. 1, when the LPC-MLS or either TWAS test results exceed the benchmark in greater than or equal to 80% of the samples. In this case, both TDS and enterococcus results have been detected at levels above the benchmark in 100% of the ambient weather samples. Enterococci were measured above the action levels in 27% of the Dry Weather Monitoring (DWM) samples.

Turbidity, total coliform and fecal coliform were each identified as a COC_a having a low frequency of occurrence and received one diamond based on Criterion No. 8, dry weather site exceedances found in 10–50% of the samples in the past year. Turbidity, total coliform

and fecal coliform were not present in the 2007–2008 ambient weather receiving water results for the MLS and/or TWAS.

Table 2-1. Los Peñasquitos Watershed Management Area Ambient Weather Constituent Exceedances

Constituents With Any Ambient Receiving Water Benchmark or Dry Weather Action Level Exceedance	Ambient Receiving Water Results at MLS and/or TWAS[2]				Urban Runoff Program Results[1]		Frequency of Occurrence	Criterion No.
	2007/2008		CUMULATIVE		2007*			
	#/6	%	#/6	%	#	%		
Conventional Parameters								
Ammonia	0	0	**0**	**0**	1	4	-	-
Total dissolved solids	6	100	**6**	**100**	NA	NA	♦♦♦	1
Total suspended solids	0	0	**0**	**0**	NA	NA	-	-
Turbidity	0	0	**0**	**0**	3	12	♦	8
Nutrients								
Orthophosphate	0	0	**0**	**0**	1	4	-	-
Bacteriological								
Total coliform	0	0	**0**	**0**	3	20	♦	8
Fecal coliform	0	0	**0**	**0**	2	13	♦	8
Enterococci	6	100	**6**	**100**	4	27	♦♦♦	1
Pesticides								
Diazinon	0	0	**0**	**0**	0	0	-	-
Toxicity							**EVIDENCE OF PERSISTENT TOXICITY?**	
Ceriodaphnia 7-day reproduction	5	83	**5**	**83**	NA	NA	Yes[3]	
Selenastrum 96-hour	1	17	**1**	**17**	NA	NA	No	
Bioassessment	**IBI Rating**						**EVIDENCE OF BENTHIC ALTERATION?**	
Los Peñasquitos Creek, at Highway 805 **	Very Poor		**Very Poor**		NA		Yes[3]	
Los Peñasquitos Creek, at Springbrook Drive (LPC-TWAS-2)	Very Poor		**Very Poor**		NA			
Carroll Canyon Creek, at Sorrento Valley Road (LPC-TWAS-1)	Very Poor		**Very Poor**		NA			

[1] Urban Runoff Program results from Jurisdictional Dry Weather Program, Dry-Coastal Storm Drain Monitoring Program, Dry MS4 Outfall, and Dry Source ID Monitoring Programs.

[2] The TWAS located in Carroll Canyon drains to Los Peñasquitos Lagoon below the MLS.
* = Total number of observations varied among constituents.
NA = Not assessed, Not Applicable, or Not Analyzed.
- = Constituent results are below the defined requirements for a Low Frequency of Occurrence rating.
♦ = Low Frequency of Occurrence rating.
♦♦ = Medium Frequency of Occurrence rating.
♦♦♦ = High Frequency of Occurrence rating.

[3] Based on two of two toxic results at LPC-TWAS-1 and the MLS and one toxic result at LPC-TWAS-2.

2.1.2 WET WEATHER WATER QUALITY ASSESSMENT

In the Los Peñasquitos WMA, six constituents were classified as wet weather constituents of concern (COC_w) with a low, medium or high frequency of occurrence. These constituents included: TDS, TSS, turbidity, total coliform, fecal coliform, and enterococci (Table 2-2).

TDS and fecal coliform were each identified as a high frequency of occurrence COC_w and each received three diamonds. The rating for TDS is based on Criterion No. 1, when the LPC-MLS or TWAS test results exceed the benchmark in greater than or equal to 80% of the samples. In this case, TDS results have been detected at levels above the benchmark in 83% of the wet weather samples. The rating for fecal coliform is based on Criterion No. 3, when less than 80% and greater than or equal to 50% of the LPC-MLS or TWAS samples exceed the benchmark and at least one DWS exceedance occurred in the past year. Fecal coliform concentrations were at 79% cumulatively from 2001–2008, but exceeded the benchmark in greater than 80% of the wet weather samples in all annual monitoring periods except for 2001–2002 and 2003–2004.

TSS, turbidity, ammonia, total coliform, and enterococci were each identified as a COC_w having a low frequency of occurrence and received one diamond based on Criterion No. 9, when LPC-MLS or TWAS exceedances are found in 25% to less than or equal to 50% of the samples and at least one exceedance is found in the last two years at the LPC-MLS or TWAS.

The high frequency of occurrence COC_w TDS and two low frequency of occurrence COC_ws (turbidity and TSS) are constituents on or related to the 2006 SWRCB Section 303(d) list (TDS within the Los Peñasquitos Creek, and sediment and siltation for Los Peñasquitos Lagoon). Wet season CSDM data did not indicate that coastal storm drains were contributing to persistent bacteria exceedances at coastal waterbodies. Jurisdictional DWM data indicated action level exceedances for enterococci, fecal coliform, total coliform, and turbidity.

The 2006 SWRCB Section 303(d) list also includes toxic sediment for Soledad Canyon, which is located within Carroll Canyon. Turbidity, while having a low frequency of occurrence during wet weather conditions, could contribute to COC_w pollutant loading and subsequent beneficial use impairments for the main receiving waterbody (i.e., Los Peñasquitos Lagoon).

Persistent toxicity is evident when more than 50% of the toxicity tests conducted on any species have an NOEC of less than 100%. Persistent toxicity was observed for *H. azteca* toxicity samples at LPC-TWAS-2 and was likely associated with Bifenthrin at concentrations sufficient to induce a toxic response to this organism based on LC_{50} values. This is a common issue on a regional and statewide basis for urban areas and is not particular to the Los Peñasquitos WMA.

Cumulative IBI scores from bioassessment monitoring at the LPC-MLS and the TWAS within the Los Peñasquitos WMA were rated Very Poor. These sites have historically been rated Poor to Very Poor for the monitoring period since 2001. These results indicate that there is evidence of benthic alteration.

Table 2-2. Los Peñasquitos Watershed Management Area Wet Weather Constituent Exceedances

Constituents With Any Wet Weather Benchmark or Dry Weather Action Level Exceedance	Wet Weather Receiving Water Results at MLS and/or TWAS[2]																Urban Runoff Program Results[1]		Frequency of Occurrence	Criterion No.
	2001/2002		2002/2003		2003/2004		2004/2005		2005/2006		2006/2007		2007/2008		CUMULATIVE		2007*			
	#/3	%	#/3	%	#/3	%	#/3	%	#/3	%	#/3	%	#/6	%	#/24	%	#	%		
Conventional Parameters																				
COD	0	0	0	0	0	0	1	33	0	0	0	0	0	0	**1**	**4**	NA	NA	-	-
Ammonia	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**	1	4	-	-
Total dissolved solids	3	100	3	100	3	100	3	100	2	67	3	100	3	50	**20**	**83**	NA	NA	♦♦♦	1
Total suspended solids	0	0	0	0	0	0	1	33	1	33	1	33	4	67	**7**	**29**	NA	NA	♦	9
Turbidity	0	0	2	67	0	0	1	33	1	33	1	33	5	83	**10**	**42**	3	12	♦	9
Nutrients																				
Orthophosphate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0**	**0**	1	4	-	-
Bacteriological																				
Total coliform	0	0	2	67	0	0	1	33	1	33	0	0	2	33	**6**	**25**	3	20	♦	9
Fecal coliform	1	33	3	100	1	33	3	100	3	100	3	100	5	83	**19**	**79**	2	13	♦♦♦	3
Enterococci	0	0	2	67	0	0	0	0	2	67	1	33	3	50	**8**	**33**	4	27	♦	9
Pesticides																				
Chlorpyrifos	0	0	2	67	0	0	0	0	0	0	0	0	0	0	**2**	**8**	0	0	-	-
Diazinon	2	67	1	33	0	0	0	0	0	0	0	0	0	0	**3**	**13**	0	0	-	-
Toxicity																			**EVIDENCE OF PERSISTENT TOXICITY?**	
Ceriodaphnia 7-day reproduction	0	0	0	0	0	0	0	0	0	0	1	33	0	0	**1**	**4**	NA	NA	No	
Hyalella 96-hour acute	0	0	0	0	0	0	0	0	0	0	0	0	3	75	**3**	**14**	NA	NA	Yes[3]	
Selenastrum 96-hour	2	67	0	0	1	33	0	0	2	67	1	33	0	0	**5**	**21**	NA	NA	No	
Bioassessment	IBI Rating																		**EVIDENCE OF BENTHIC ALTERATION?**	
Los Peñasquitos Creek, at Highway 805 **	Very Poor		Poor		Poor		Poor		Very Poor		Very Poor		Very Poor		**Very Poor**		NA		Yes	
Los Peñasquitos Creek, at Springbrook Drive (LPC-TWAS-2)	Very Poor		Very Poor		Very Poor		Very Poor		Very Poor		Very Poor		Very Poor		**Very Poor**		NA			
Carroll Canyon Creek, at Sorrento Valley Road (LPC-TWAS-1)	Very Poor		Poor		Poor		Poor		Very Poor		Very Poor		Very Poor		**Very Poor**		NA			

[1] Urban Runoff Program results from Jurisdictional Dry Weather Program, Coastal Storm Drain Monitoring Program, Wet MS4 Outfall, and Wet Source ID Monitoring Programs.

[2] The TWAS located in Carroll Canyon drains to Los Peñasquitos Lagoon below the MLS.
* = Total number of observations varied among constituents.
NA = Not assessed.
- = Constituent results are below the defined requirements for a Low Frequency of Occurrence rating.
♦ = Low Frequency of Occurrence rating.
♦♦ = Medium Frequency of Occurrence rating.
♦♦♦ = High Frequency of Occurrence rating.

[3] Persistent toxicity triggered by two of two *Hyalella azteca* toxicity hits at LPC-TWAS-2 with no historical data to suggest otherwise. Synthetic pyrethroids were detected in levels sufficient to induce a toxic response to this organism based on published LC_{50} values. This is common issue on a region wide and statewide basis in urban areas.

2.1.3 TRASH ASSESSMENT

Trash assessments were conducted at receiving water stations during ambient weather and wet weather monitoring events in compliance with the Municipal Permit (Section II.A.1.k). Trash assessments were conducted in accordance with the Monitoring Work Plan for the Assessment of Trash in San Diego County (Weston, 2007). Trash assessment results are presented in Table 2-3.

Table 2-3. Los Peñasquitos Watershed Management Area Trash Assessment Results in Los Peñasquitos Receiving Waters

Site	Date	Trash Assessment Rating[1]	Threat Rating
LPC-TWAS-1	09/26/2007	Optimal	None
	11/30/2007	Marginal	None
	02/03/2008	Optimal	None
	06/03/2008	Marginal	None
LPC-TWAS-2	09/26/2007	Optimal	None
	11/30/2007	Optimal	None
	02/03/2008	Optimal	None
	06/03/2008	Suboptimal	None
LPC-MLS	09/26/2007	Optimal	None
	11/30/2007	Optimal	None
	02/03/2008	Optimal	None
	06/03/2008	Optimal	None

[1]Trash type ranking, source evaluation and potential route information is provided in Appendix K for sites with Submarginal or Poor ratings. (Weston, December 2008, Draft)

Trash assessments were not required for the 2007 Jurisdictional DWM Program under the 2001 Municipal Permit (Order 2001-01); therefore, a discussion of the findings on a WMA-wide scale is not appropriate as limited data is available. However, trash assessments are included in the jurisdictional DWM Program for 2008 under the current Municipal Permit (Order R9-2007-0001). A discussion of trash assessments will be provided in future reports where inclusion of the dry weather trash assessments will result in a more robust data set that can be used to assess trash on a WMA-wide scale.

2.1.4 NUMERIC NUTRIENT ENDPOINT BENEFICIAL USE ASSESSMENT

An evaluation of the potential impacts of nutrient levels in the Los Peñasquitos WMA was conducted using secondary indicators collected during the two ambient weather monitoring events and one bioassessment monitoring event. The secondary indicators of nutrient-induced eutrophication were selected based on the Nutrient Numeric Endpoints (NNE) methodology (Tetra Tech, 2006) and include benthic algal biomass, dissolved oxygen (DO), pH, and dissolved organic carbon (DOC). The purpose of this evaluation is to assess the risk elevated nutrients may pose to beneficial uses by comparing concentrations of secondary indicators at a site to benchmarks established for each beneficial use. Data collected from the site are compared to the benchmark for each secondary indicator and placed into one of three beneficial use risk categories:

I. Presumptive Unimpaired (use is supported),
II. Potential Impaired (may require an impairment assessment), or
III. Presumptive Impaired (use is not supported or is highly threatened).

For the Los Peñasquitos WMA, secondary indicators have been established for WARM beneficial uses (Table 2-4). REC-1 and REC-2 beneficial uses are addressed by aquatic life criteria related to benthic algal biomass, but there is no direct link between these beneficial uses and the remaining secondary indicators (DO, pH, and DOC). Therefore, potential impairment to the REC-1 and REC-2 beneficial uses was not assessed using the NNE method.

The results of the analysis indicate that benthic algal biomass levels fall into the Presumptive Impaired category (for WARM) for LPC-MLS based on chlorophyll-a levels measured in June (Table 2-4). This finding warrants evaluation of nutrient concentrations and flow at LPC-MLS to determine beneficial use impairment. Both TWAS fall into the Presumptive Unimpaired category for benthic algal biomass, DO and pH, although chlorophyll-a was measured near the risk category boundary during the reporting period at LPC-TWAS-2.

Comparing concentrations of secondary indicators to established benchmarks can be an effective way to assess the risk of eutrophication and beneficial use impairment. However, it is worth noting that only limited data are available for the 2007–2008 monitoring season. Future monitoring and NNE evaluation will help verify these initial results and will help identify those areas where eutrophication is a potential problem. Nutrient benchmark criteria are currently being developed by the Southern California Coastal Water Research Project (SCCWRP). Results of these efforts will provide additional information for assessment of nutrient impacts in the Los Peñasquitos WMA.

Table 2-4. Los Peñasquitos Watershed Management Area Nutrient Numeric Endpoint Assessment Results

Secondary Indicators	Risk Category Boundary	Beneficial Use Benchmarks			LPC-MLS		LPC-MLS Risk Category Result	LPC-TWAS-1		LPC-TWAS-2		LPC-TWAS-1 and LPC-TWAS-2 Risk Category Result
		WARM	REC-1	REC-2	9/26/07-9/27/07	6/2/08-6/3/08		9/26/07-9/27/07	6/2/08-6/3/08	9/26/07-9/27/07	6/2/08-6/3/08	
Benthic algal biomass (mg chlorophyll-a/m^2) maximum	I/II	150	C	C			III-Presumptive Impaired (for Warm)		69		134.8	I-Presumptive Unimpaired
	II/III	200	C	C		269.3						
Dissolved oxygen (mg/L) Streams--mean of 7 daily minimums	I/II	6.0	A	A		7.69	I-Presumptive Unimpaired		10.1		6.6	I-Presumptive Unimpaired
	II/III	4.0	A	A								
pH maximum--photosynthesis driven	I/II	9.0	A	A	8.07	8.1	I-Presumptive Unimpaired	8	8.28	7.60	7.68	I-Presumptive Unimpaired
	II/III	9.5	A	A								
DOC (mg/L)	I/II	A	A	A	13.6	9.9	NA	6.8	5.3	11.8	8.5	NA
	II/III	A	A	A								

A=No direct Linkage
C=Addressed by Aquatic Life Criteria

Source: Tetra Tech, Inc. 2006. Technical Approach to Develop Nutrient Numeric Endpoints for California. Prepared for US EPA Region IX, California State Water Resource Control Board; Planning and Standards Implementation Unit

Beneficial Use Risk-Category I. Presumptive unimpaired (use is supported)
Beneficial Use Risk Category II. Potentially impaired (may require an impairment assessment)
Beneficial Use Risk Category III. Presumptive impaired (use is not supported or highly threatened)

2.1.5 INTEGRATED ASSESSMENT

Assessment of the Los Peñasquitos WMA during both wet weather and ambient weather monitoring conditions is presented in an integrated manner to provide managers with an overall assessment of the WMA, and to provide answers to the core monitoring management questions outlined in the regional monitoring program. The integrated assessment provides the results of the receiving water and urban runoff assessments during both storm events and ambient weather events. It also provides a summary of the overall findings of the WMA. The integrated assessment further provides the ability to identify where COCs overlap between urban runoff and receiving waters. It is anticipated that MS4 Outfall Program data and Source Identification Monitoring Program data will bolster the assessment process as additional data becomes available in future years. Integrated WMA assessment results are presented in Table 2-5.

Table 2-5. Integrated WMA Assessment

Assessment Category		Program	Frequency of Occurrence Assessment Findings	Persistent Toxicity Observed	Evidence of Benthic Impairment	Integrated WMA Assessment Summary
 **Ambient**	**Ambient Receiving Water**	MLS, TWAS, and Bioassessment Monitoring	♦♦♦-TDS, enterococci	Yes (*C. dubia* reproductive endpoint at LPC-TWAS-1)	Yes	TDS is identified as a high frequency of occurrence COC during both ambient and wet weather conditions. TDS is a known issue related to importation of drinking water, over-irrigation, and potential recycled water uses. Enterococci were identified as a high frequency of occurrence COC during ambient conditions. Both TWAS sites and MLS sites were above the benchmark during both monitoring events. Indicator bacteria may be related to dry weather runoff due to jurisdictional dry weather data exceedances. Bacterial re-growth in the receiving waters may occur during low velocity conditions. Low frequency of occurrence COCs were primarily related to dry weather monitoring data collected in the MS4 for turbidity, total coliform, and fecal coliform. Persistent toxicity was observed to the *Ceriodaphnia dubia* reproductive endpoint during both ambient events at the MLS and LPC-TWAS-1 sites. Toxicity was not observed at a level sufficient to warrant a toxicity identification evaluation (Survival was > 50% in the 100% sample) at either site during the Spring 2008 ambient event.
	Ambient Urban Runoff Areas	Jurisdictional Dry Weather Monitoring, Coastal Storm Drain Monitoring, MS4 Program Data, Source Identification Monitoring	♦-Turbidity, total coliform, fecal coliform	NA		
 **Wet Weather**	**Wet Weather Receiving Water**	MLS, TWAS, and Bioassessment Monitoring	♦♦♦-TDS, fecal coliform ♦-Turbidity, total coliform, enterococci	Yes (*Hyalella azteca* at LPC-TWAS-2)		TDS and fecal coliform are high frequency of occurrence COCs during wet weather conditions. Turbidity was also identified as a low frequency COC in both ambient conditions, wet weather conditions, and in jurisdicational dry weather data suggesting a potential link between urban runoff and receiving water conditions. Toxicity to *Hyalella azteca* is identified as persistent based on two of two monitoring events at LPC-TWAS-2 (Poway HA). Toxicity to *Hyalella azteca* was also observed only during the first event at the MLS. The MLS and TWAS-2 sites capture runoff from primarily residential land uses and less commercial and industrial land uses. Synthetic pyrethroids were detected at levels sufficient to induce a toxic response to this organism at the TWAS-2 site during the two wet weather sample events and at the MLS during the first wet weather event where toxicity was observed. This is a region wide and state wide problem, and is currently being addressed by the Department of Pesticide Regulation.
	Wet Weather Urban Runoff Areas	MS4 Program Data, Source Identification Monitoring, Coastal Storm Drain Monitoring	(No COCw identified or no data from the programs to date)	NA		

* Note: MS4 Outfall Monitoring and Source Identification Monitoring Program data were not included in this assessment and will be incorporated in future data assessments.

2.1.6 TRIAD DECISION MATRIX

The triad decision matrix incorporates the chemistry data from both wet and dry weather events with toxicity and bioassessment results to provide indications of pollutant loading, potential impacts to organisms, and the ecological health of the WMA. The triad assessment presents possible conclusions regarding the WMA and provides possible actions or decisions for future monitoring and assessment efforts. A summary of these results are included in Table 2-6.

Table 2-6. Los Peñasquitos Watershed Management Area Triad Decision Matrix Results

Chemistry	Toxicity	Benthic Alteration	Possible Conclusion(s)	Possible Actions or Decisions
There were persistent exceedances of water quality benchmarks (TWAS-2 pyrethroids).	There was evidence of persistent toxicity (ambient toxicity at TWAS-1 for *C. dubia* reproduction and wet weather toxicity at TWAS-2 for *H. azteca*).	There were indications of benthic alteration.	There was strong evidence of pollution-induced degradation.	1) Toxicity tests at higher dilutions to better quantify toxicity; Use TIE to identify contaminants of concern, based on TIE metric. 2) Evaluate/identify upstream source as a high priority.

Fecal coliform and TDS were each identified as a high frequency of occurrence COC_ws. Enterococci and TDS were each identified as a high frequency of occurrence COC_as. However, neither TDS nor indicator bacteria are considered in the triad decision-making process since they are not believed to induce a toxic response to aquatic organisms (see Methods Section in Appendix B for more complete details). The synthetic pyrethroid Bifenthrin was detected in both wet weather samples where toxicity was observed to *H. azteca*. Additionally, persistent toxicity was observed to *C. dubia* reproduction during ambient weather events at TWAS-1. There were no persistent chemicals identified that may be causing toxicity at the TWAS-1 Site. Therefore, based on the triad decision matrix, there was evidence of persistent chemistry benchmark high frequency exceedances (Bifenthrin). There were, however, indications of benthic alteration. Toxicity to *H. azteca* related to synthetic pyrethroids is not specific to this WMA and can be considered both a regional and state issue. Although a TIE is recommended based on the triad decision matrix, TIEs conducted in the Agua Hedionda Watershed and the Chollas Creek Watershed confirmed synthetic pyrethroids to be the likely causative agent of toxicity to *H. azteca* during wet weather monitoring events. TIEs may be useful for identifying the causative agent of toxicity to *C. dubia* reproduction in the TWAS-1 location. However, the level of toxicity did not warrant conducting a TIE due to the low level of toxicity observed. It is recommended to continue monitoring to gather long-term trend information, to consider TIEs at the TWAS-1 location during ambient weather events, to consider the potential role of physical habitat disturbance, and to identify upstream sources of COCs.

2.2 WATER QUALITY PROBLEM(S)

The Los Peñasquitos WURMP Copermittees used the process developed in the regional watershed strategy to identify the water quality problems in the Los Peñasquitos WMA.

2.2.1 303(D) IMPAIRED WATER BODIES LISTINGS

Table 2-7 lists the impaired water bodies within the Los Peñasquitos WMA from the 2006 303(d) Impaired Water Bodies Listings. These listings were not considered in the Baseline Water Quality Priority Ratings discussed below and summarized in Table 2-8. The listings include Sediment/Siltation, Phosphate and TDS in the Miramar Hydrological Area (HA).

Table 2-7. 2006 303(d) listings for Los Peñasquitos Watershed

Water Body Name	Hydrologic Area (HSA)	HSA No.	Pollutant/Stressor
Los Peñasquitos Lagoon	Miramar	906.1	Sediment/Siltation
Los Peñasquitos Creek	Miramar	906.1	Phosphate, TDS

Source: SWRCB, 2006

The baseline water quality priority ratings presented in the 2005–2006 Urban Runoff Monitoring Report are also presented in this report in Table 2-8 to compare annual WMA assessment results. This table is a tool for managers to prioritize WMA activities and to identify data gaps. The priority ratings are based on the methodology presented in the BLTEA report (Weston et al., 2005) and are summarized in the Methods section of the 2007-2008 Urban Runoff Monitoring Report.

The BLTEA ratings are used to guide long-term programmatic WMA activities and are performed on a five-year cycle. The WMA assessments are used to guide annual water quality monitoring activities and to evaluate annual differences or change through time. The WMA COCs are compared to the BLTEA ratings to evaluate if activities are showing improvements or impairments through the five-year cycle.

Table 2-8. Los Peñasquitos Watershed Management Area 2001–2006 Water Quality Priority Ratings

Watersheds/ Subwatersheds	Percentage of Total Area	Priority Ratings*										
		Constituent Groups									Stressor Groups	
		Heavy Metals	Dissolved Minerals	Organics	Oil and Grease	Sediments	Pesticides	Nutrients	Gross Pollutants	Bacterial/ Pathogens	Benthic Alterations	Toxicity
Los Peñasquitos WMA	**100%**	***D***	***A***	***D***	***D***	***A***	***D***	***D***	***D***	***A***	***A***	***C***
Miramar Reservoir HA (906.10)	55%	*C*	*A*	*D*	*D*	*A*	*D*	*C*	*C*	*A*	*A*	*C*
Poway HA (906.20)	45%	*D*	*A*	*D*	*D*	*C*	*D*	*D*	*D*	*B*	*B*	*C*
2006–2008 High Frequency of Occurrence COCs (from WMA Integrated Assessment)												
2006–2007 High[1] Frequency of Occurrence Ratings			♦♦♦ TDS									
2007–2008 High[1] Frequency of Occurrence Ratings	Wet Weather		♦♦♦ TDS							♦♦♦ Fecal coliform	Very Poor IBI	Persistent Toxicity to *H. azteca* (TWAS-2)
	Ambient		♦♦♦ TDS							♦♦♦ Entero-cocci	Very Poor IBI	Persistent Toxicity to *C. dubia* reproduc-tion (TWAS-1)

1. High frequency of occurrence ratings are derived from the constituent exceedances tables and are provided for comparison purposes.

Notes:

** = Rating Calculated Based on Area Weighted Averages of Score Value from the subwatershed areas.*

*** = Priority Level (Highest-A to Lowest-D)*

High-Priority Level Based on Data

2006 SWRCB Section 303d listing

Constituent groups and stressor groups are given a ranking from A to D, with A being the highest priority rating and D the lowest. Items ranked with a D indicate that the constituent group or stressor is a low priority or does not have sufficient data to support a higher ranking. The BLTEA priority ratings were based on the data record from 2001–2006 from the following programs and will be updated on a five-year cycle:

- Storm Water Mass Loading Monitoring (LPC-MLS)—Wet Weather Data (2000–2006).
- Copermittee Dry Weather Data Monitoring (2003–2005).
- Available Third-Party Data (SWAMP, 2004).
- Ambient Bay, Lagoon, and Coastal Receiving Water Monitoring (2003–2005).
- Urban Stream Bioassessment Monitoring (2000–2006).
- Triad Assessment—Toxicity Testing of Storm Water (2000–2006).
- SWRCB Section 303(d) Listing (2003).

High-priority (A) ratings for the Los Peñasquitos WMA included dissolved minerals, sediment, bacteria/pathogens, and benthic alterations. The Miramar Reservoir HA (906.10) has the same high-priority ratings as the entire Los Peñasquitos WMA. The Poway HA (906.20) only had a high-priority rating for dissolved minerals, while bacteria, pathogens and benthic alterations received B priority ratings. The A and B priority ratings for these COCs

are consistent with higher urbanized land uses. All other constituents were given either a C or D rating.

High frequency of occurrence ratings for COCs from the Los Peñasquitos WMA criterion assessments were compared to the water quality priority ratings summary table (Table 2-8) for the Los Peñasquitos WMA assessment. A high frequency of occurrence rating was determined for TDS during both wet and ambient weather conditions. Fecal coliform was identified as a high frequency of occurrence COC_w, while enterococci was identified as a high frequency COC_a. In comparison, the BLTEA ratings were similar for the overall WMA and Miramar HA for these categories, while the Poway HA had these COCs with B ratings.

A list of potential likely or unknown sources for the nutrients and bacteria categories in the Los Peñasquitos WMA that are based on the threat to water quality inventory ratings tables can be found in the BLTEA report (Weston et al., 2005).

2.2.2 HIGH PRIORITY WATER QUALITY PROBLEMS

Based on the assessments above and the available water quality data, the Los Peñasquitos WURMP Copermittees have determined that the High Priority Water Quality Problems in the Los Peñasquitos WMA remain unchanged from previous assessment and are:

1. Bacteria / Pathogens in all HAs (under both ambient and wet weather conditions)
2. Sediment in the Miramar Area

It should be noted that the High Priority Water Quality Problems have not changed from previous assessments or the Los Peñasquitos WURMP, even though this year's assessment included the first year of expanded monitoring data as required under the Municipal Permit (Order R9-2007-0001).

2.3 POTENTIAL POLLUTANT SOURCES ASSESSMENT

This section identifies, to the extent possible, the potential sources, pollutant discharges, and/or other factors causing the Los Peñasquitos WMA's high priority water quality problems.

In 2005 as part of the BLTEA process, the Regional Copermittees identified thirty-four (34) sources of pollutants on which to focus their efforts. The process included characterizing the sources and determining the potential for each source (Source Load Potential – SLP) to produce one of the eight pollutant types: heavy metals; organics; oil & grease; sediment; pesticides; nutrients; gross pollutants, and; bacteria.

The BLTEA also developed a process to establish Threat-To-Water-Quality (TTWQ) ratings for the sources based on water quality priority ratings for each HA and the SLP of the inventoried sources within each WMA. Together the water quality ratings and the SLP determined the TTWQ ratings of the sources based the sources' likelihood to generate pollutants that cause the water quality problems.

For the Los Peñasquitos WMA, the TTWQ ratings tables for the high priority water quality problems in each HA are summarized below. Table 2-9 represents the highest TTWQ rated sources within each HA based on the high priority water quality problems.

The process used to develop the table was taken directly from the BLTEA. The data used for the process includes the following: (1) 2007 Baseline Water Quality Priority Ratings

(Weston Solutions, 2007); (2) 2007 inventory information from all watershed Copermittees; (3) the SLP ratings from the BLTEA (Weston, MOE, LWA, 2005), and; (4) Copermittees' dry weather monitoring data.

Table 2-9. High Priority Sources in HAs

Source	Animal Facilities		Botanical/ Zoological Gardens		Eating or Drinking Establishments		Landscaping		POTWs	
	Bacteria	Sediment	Bacteria	Sediment	Bacteria	Sediment	Bacteria	Sediment	Bacteria	Sediment
906. 1 - Miramar HA (Bacteria, Sediments)	19		3		474		90		3	
906.2 - Poway HA (Bacteria)	8		3		260		26		1	

Shaded Cells mean that the pollutant type is not a high priority for the HA
Note: Source quantities are based on updated inventory information from Copermittees. The geocoding process may limit the representation of sources

3 IMPLEMENTATION OF WATERSHED ACTIVITIES

3.1 WATERSHED WATER QUALITY ACTIVITIES

The Los Peñasquitos WURMP Copermittees are responsible for identifying and implementing water quality activities that address the High Priority Water Quality Problems in the WMA. These activities may be implemented individually or collectively, and may be implemented at the regional, watershed or jurisdictional level. The activity selection process is described fully in the 2008 Los Peñasquitos WURMP.

During the reporting period, the Los Peñasquitos WURMP Copermittees implemented six water quality activities. Table 3-1 below lists the activities that were in active implementation during the reporting period. Details of the each activity can be found on the Activity Implementation Sheets located in Appendix A. In addition, other activities were in the active planning, design or assessment phases during the reporting period. For more details on all of the activities, refer to Table 3-6 and Appendix A.

Table 3-1. Watershed Water Quality Activities Implemented During FY 2007-08

ID #	Activity/Project Name
LP-WQA1	San Diego Coastkeeper Trash Cleanup Sponsorship
LP-WQA5	Targeted Inspections
LP-WQA6	Alpha Project for the Homeless, Inc. Trash Cleanups
LP-WQA8	ILACSD Trash Cleanup Sponsorship
LP-WQA11	Aubrey Street Continuous Deflective Separation Device
LP-WQA12	Gate Drive Detention Basin Modification

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

3.2 WATERSHED EDUCATION ACTIVITIES

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

The Los Peñasquitos WURMP Copermittees have made significant progress in developing and implementing programs aimed at improving storm water and urban runoff water quality in the WMA. Table 3-2 below list the three education activities implemented during FY 2008 by the Los Peñasquitos WURMP Copermittees. In addition, other activities were in the active planning or assessment phases during the reporting period. For more details on all of the activities, refer to Table 3-6 and Appendix A.

Table 3-2. Watershed Education Activities Implemented During FY 2007-08

ID #	Activity/Project Name
LPHU-WQEA1	Mobile Advertising
LPHU-WQEA2	Public Service Announcements
LPHU-WQEA8	Transit Shelters

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

3.3 PUBLIC PARTICIPATION ACTIVITIES

3.3.1 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.

3.3.2 ACTIVITIES CONDUCTED

WURMP documents and reports have been posted on the Project Clean Water website, where they are available to all interested stakeholders. During FY 2008, the Los Peñasquitos WMA web page on the Project Clean Water website received 1,487 hits and the Los Peñasquitos WURMP page received 440 hits. These totals are similar to those seen in the previous reporting period. A monthly breakdown of the hits can be found in the tables below.

Table 3-3. Number of Hits on the Project Clean Water Los Peñasquitos WMA Web Site

July 07	Aug 07	Sep 07	Oct 07	Nov 07	Dec 07	Jan 08	Feb 08	March 08	April 08	May 08	June 08	Total
148	123	106	118	104	91	110	113	118	158	152	146	1,487

Table 3-4. Number of Hits on the Project Clean Water Los Peñasquitos WURMP Web Site

July 07	Aug 07	Sep 07	Oct 07	Nov 07	Dec 07	Jan 08	Feb 08	March 08	April 08	May 08	June 08	Total
53	42	27	42	29	34	29	27	36	47	36	38	440

During this reporting period, the Los Peñasquitos WURMP Copermittees participated in 12 community events that reached more than 16,000 participants, as shown in Table 3-5 below. Watershed concepts and principles were incorporated into booth displays and event activities.

Table 3-5. Community Events in FY 08-09

Date	Event Title	Target Audience	Estimated Attendance	Location	Jurisdiction
7/5/07	Beach Cleanup	Public	No data	Del Mar	Del Mar
9/14/07	Fall Home and Garden Show	Public	400	Del Mar Fairgrounds	Del Mar
9/15/07	Community Day	Public	9,000	Poway Community Park	Poway
9/15/07	Beach Cleanup	Public	No data	Del Mar	Del Mar
9/29/07	Sea World Garden Festival	Public	250	Sea World Garden of Discovery	San Diego
11/14/07	Surfrider Foundation (San Diego Chapter) Water Quality	Members of Surfrider Foundation	43	Forum Hall	San Diego
1/31/08	Community Workshop: General IPM and Ants	Public	19	Pacific Beach Kiwanis Club	San Diego
2/29/08	Spring Home and Garden Show	Public	250	Del Mar Fairgrounds	Del Mar
4/19/08	Earth Day/Arbor Day Celebration	Public	450	Blue Sky Nature Reserve	Poway
5/3/08	Clairemont Garden Tour	Public	150	Clairemont	San Diego
6/7/08	National Trails Day: Manure Management & Watershed Awareness	Public – Horse Owners, Hikers, and Mountain Bikers	500	Los Peñasquitos Canyon Preserve	County of San Diego
6/14/08	Flower and Garden Show	Public	5,000	Del Mar Fairgrounds	Del Mar

As noted in section 3.1 of this report, Water Quality Activities, several community cleanup events were held during FY 2008. These cleanup events involved more than 168 volunteer participants.

3.4 FUTURE EFFORTS

The Los Peñasquitos WURMP 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.

3.5 COLLABORATIVE LAND-USE PLANNING EFFORTS

3.5.1 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 Los Peñasquitos WURMP 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.

3.5.2 ACTIVITIES CONDUCTED

As noted in the Activity Implementation Sheets in Appendix A of this report, the City of San Diego has been an active participant in the Integrated Regional Water Management (IRWM) planning process (IRWMPP). 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. Participation in the IRWMPP has already led to funding approval for a number of BMP installation projects that will benefit the WMA by reducing runoff. In addition, informational presentations on the IRWMP were given to the City Councils of the Cities of Del Mar and Poway to increase awareness of the need to coordinate land-use and other planning activities across WMAs and the region.

Coordination of land-use planning will also benefit from the development of the Low Impact Development (LID) Handbook and the associated education program. The Handbook, which was developed by the County of San Diego in association with the LID Technical Advisory Committee, was completed in December 2007. The LID and Watershed Planning Education activity involves educating local planning and sponsor groups throughout the unincorporated County on Low Impact Development (LID) and watershed planning principles, practices, and requirements. Since the recommendations of local planning and sponsor groups have some influence over whether, and under what conditions, development projects are approved within the unincorporated County, this education is intended to aid these groups in making informed recommendations on aspects of development projects that would affect WMA water quality.

This education program, which consists of a PowerPoint presentation and provides Planning and Sponsor Group members each a set of LID Handbooks, was successfully developed on schedule during the spring of FY 2008. Presentations have not yet been conducted in the Los Peñasquitos WMA.

3.5.3 FUTURE EFFORTS

In FY 08-09, the City of San Diego will continue to participate in the IWRMP process, and the expenditure of grant money and implementation of BMP projects will begin. 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.

LID and Watershed Planning Education for Community Planning and Sponsor Groups will be conducted in the Los Peñasquitos WMA during FY 2009. This education activity will help increase knowledge of watershed planning and LID principles and will provide common guidelines for implementation during land-use planning.

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

3.6 UPDATED 5-YEAR STRATEGIC PLAN

3.6.1 NEW WMA ACTIVITIES

A list of the proposed new WMA activities is included below. 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 High Priority Water Quality Problems in the WMA. Activity Implementation Sheets can be found in Appendix A.

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 High Priority Water Quality Problem(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 Los Peñasquitos WURMP Copermittees will implement identified WMA activities pursuant to the proposed schedule. For each Permit year, no less 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 High Priority Water Quality Problem(s). Water quality activities that are capital projects are in active implementation for the first year of implementation only.

The new proposed activities include:

1) LP-WQA18 – Sweeping Route Posting and Enforcement
2) LP-WQA20 – Sediment Source ID Study
3) LP-WQEA8 – Transit Shelters

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

3.6.2 UPDATED 5-YEAR STRATEGIC PLAN

This section describes the results of the Collective Watershed Strategy process described 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 High Priority Water Quality Problems in each HA.

The second step was to identify the sources that are most likely to contribute (having the highest TTWQ ratings) to the High Priority Water Quality Problems for each HA-High Priority Water Quality Problem combination in the WMA. Based on the available data, the Los Peñasquitos WURMP 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 Los Peñasquitos WURMP Copermittees will use 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 at the end of this section is intended to supersede the earlier version presented in the Los Peñasquitos WURMP.

Table 3-6 Updated 5-Year Strategic Plan

Watershed Water Quality Activities		Jurisdiction	Watershed WQ Priorities		Implementation Schedule			
			Bacteria	Sediment	FY 07-08	FY 08-09	FY 09-10	Future Fiscal Year(s)
LP-WQA1	SDCK Trash Cleanup Sponsorship	SD	X		WQI	WQI	WQI	WQI
LP-WQA2	Targeted Animal Related Facility Inspections	SD	X		Combined with LP-WQA5			
LP-WQA3	Targeted Landscaping-Related Facility Inspections	SD	X					
LP-WQA4	Targeted Municipal Facility Inspections	SD	X		-	To be reported in City of SD JURMP		
LP-WQA5	Targeted Inspections (formerly Targeted Restaurant Facility Inspections)	SD	X		WQI	WQI	WQI	WQI
LP-WQA6	Alpha Project for the Homeless, Inc. Trash Cleanups	SD	X		WQI	-	-	-
LP-WQA7	Marindustry Hydrodynamic Separator Installation	SD	X	X	P	P	P	WQI
LP-WQA8	ILACSD Trash Cleanup Sponsorship	SD/POW	X		WQI	WQI	WQI	WQI
LP-WQA9	Mira Mesa Biorention and Infiltration BMP Retrofit	SD	X		P	P	P	P,M, WQI
LP-WQA10	Municipal Rain Barrel Installation and Downspout Disconnects	SD	X	X	P	P	WQI	A
LP-WQA11	Aubrey Street Continuous Deflective Separation (CDS) Device	POW		X	WQI	A	A	A
LP-WQA12	Gate Drive Detention Basin Modification	POW	X		WQI	A	A	A
LP-WQA13	Median Irrigation System Replacement	DM	X		P	WQI	A	A
LP-WQA14	Park and Open Space Irrigation and Controllers	DM	X		P	WQI	A	A
LP-WQA15	Over-Irrigation/Dry Weather Runoff Reduction	POW	X		-	P	WQI	A
LP-WQA16	Residential Rain Barrel & Xeriscaping Incentive Program	SD	X	X	-	P	P	WQI
LP-WQA17	Increase Trash Receptacles and Dogi-Pot stations	POW/SD	X		-	P	WQI	WQI
LP-WQA18	Sweeping Route Posting and Enforcement	SD	X	X	-	P	P,WQI	WQI
LP-WQA19	City of San Diego *Strategic Plan for Watershed Activity Implementation*	SD	X	X	P	I	I	I
LP-WQA20	Sediment Source Identification Study	SD	X	X	-	P	I	-

Watershed Water Education Activities								
LP-WQEA1	Mobile Advertising	SD	X	X	WE	WE	WE	WE
LP-WQEA2	Public Service Announcements: *Karma and Karma Second Chance*	SD	X		WE	WE	WE	WE
LP-WQEA3	LP WMA Inspection Outreach - formerly Restaurant Inspection Outreach	SD	X		E	E	E	E
LP-WQEA4	LID and Watershed Planning Education	COUNTY/ DM	X	X	P	WE	A	-
LP-WQEA5	Infiltration BMP Retrofit Outreach	SD	X		P	P	P	WE
LP-WQEA6	Residential Water Conservation Outreach	DM	X		-	-	-	P, WE
LP-WQEA7	Over-Irrigation/Dry Weather Runoff Reduction Education	POW	X		-	P	WE	WE
LP-WQEA8	Transit Shelters	SD	X	X	WE	WE	WE	WE
LP-WQEA9	Our Water, Our Responsibility Pamphlet Distribution	SD	X	X	E	E	E	-
LP-WQEA10	Erosion and Sediment Control Poster	SD	X	X	E	E	E	-
LP-WQEA11	Restaurant Best Management Practices Booklet	SD	X		E	E	E	E

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)

4 EFFECTIVENESS ASSESSMENT

The Municipal 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, and to assess the effectiveness of the activities to meet those goals and objectives or identify areas that may need improvement. This report section is written pursuant to the requirements of Section J.2.i of the Municipal Permit, and reports on the activities planned and implemented during FY 2007-08, the first of a 5-year cycle.

4.1 ASSESSMENT OF OVERALL WURMP EFFECTIVENESS

Activities collaborated upon and selected by the Los Peñasquitos WURMP Copermittees address the overall goal of the WURMP by focusing on the High Priority Water Quality Problems 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 watershed Los Peñasquitos WURMP Copermittees in FY 2008, and where in this report required compliance points are fulfilled or described.

Table 4-1. Permit Compliance Outcomes

Targeted Outcome	Measure	Report Section
Update any watershed maps.	Completed	2.0
Update assessments and analyses of the WMA's current and past applicable water quality data, reports, analyses, and other information, including identification of the WMA's water quality problems and High Priority Water Quality Problem(s) during the reporting period.	Completed	2.1-2.2
Identify the likely sources, pollutant discharges and/or other factors causing the High Priority Water Quality Problems within the WMA.	Completed	2.3
Update list of potential Water Quality Activities.	Completed	3.5
Identify and describe the Water Quality Activities implemented by each Copermittee during the reporting period.	Completed	3.1
Update list of potential Education Activities.	Completed	3.5
Identify and describe the Education Activities implemented by each Copermittee during the reporting period.	Completed	3.2
Describe the public participation mechanisms used during the reporting period and the parties that were involved.	Completed	3.3
A description of Copermittee collaboration efforts including meeting as the Los Peñasquitos WURMP Workgroup.	Completed	1.1
Describe the efforts implemented to encourage collaborative, watershed-based, land-use planning.	Completed	3.4
Describe all TMDL activities implemented for each approved TMDL in the WMA. 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.	Not Applicable	N/A

As shown in Table 4-1, the Los Peñasquitos WURMP Copermittees were in compliance with all Level 1 WURMP-related Municipal Permit requirements during FY 2008.

4.2 ACTIVITIES ASSESSMENT

The effectiveness of each Water Quality and 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. Los Peñasquitos WURMP Copermittees collaborated on and selected activities that would address High Priority Water Quality Problems not only within not only each jurisdiction, but throughout the WMA. In some cases, these activities will reach a regional audience. The following is a description of the activities planned and implemented during this timeframe.

Each Activity Implementation Summary sheet in Appendix A identifies specific targeted outcomes (Levels 1-6) that will be assessed, and the measures and methods that will be used to gauge activity effectiveness. Each WMA 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).

Table 4-2. Outcome Levels: Levels 1-6

	Outcome Level	Anticipated Outcome of Activity	Effectiveness Metrics or Methods
1	Permit Compliance	Compliance with Permit requirement to implement WMA Activities	Number of applicable WMA 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 of targeted audience attitudes.
3	Behavioral Change	Reduction in targeted audience behaviors that generate pollutants. Increase in targeted audience behaviors that support WMA 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 2008, there were nine activities in the active implementation phase, six of which focused on water quality and three focused on education. These activities addressed the

High Priority Water Quality Problems in the Los Peñasquitos WMA; which include bacteria and sediment; and are the activities for which the Copermittees are counting towards the minimum requirement to have two active water quality and two active education activities each year. Table 4-3, below, summarizes the assessments of the water quality and education activities to provide a snapshot of the overall effectiveness of the watershed activities.

Generally, more water quality data is available after the first year of Regional Monitoring under the Municipal Permit. However, an initial qualitative assessment of the cumulative impacts of the watershed activities can be made from the activities implemented during this fiscal year.

Also, four activities were in the active planning phase during FY 2008. Activities in active planning are listed in a separate table below. Although these activities should be implemented in future years, some planning progress was made such as site selection or equipment purchases.

4.3 Assessment of TMDL BMP Implementation Plan Effectiveness

At this time, there are no adopted TMDLs currently in effect within the Los Peñasquitos WMA.

Table 4-3 Summary of Implemented Water Quality and Water Education Activities for FY 2008

Activity:	HA:	Type:	Priority Problems Addressed	Level Outcomes:	Pollutant Load Reduction, Source Abatement or Other Benefit Derived:
SDCK Trash Cleanup Sponsorship	906.1 906.2	Water Quality	Bacteria & Trash	Level 1 & Level 4	*During this event 50 participants removed 500 pounds of trash and debris for an efficiency of $2.00 per pound collected.*
Targeted Municipal Facility Inspections	906.1 906.2	Water Quality	Bacteria & Sediment	Level 1, Level 3 & Level 4	*Inspections led to education, BMP implementation, and load-reducing effectiveness.*
Alpha Project for the Homeless, Inc. Trash Cleanups	906.1 906.2	Water Quality	Bacteria	Level 1 & Level 4	*Alpha Project removed 3,260 pounds of trash during three separate clean-up events using an average of 4 volunteers per site for an efficiency of $0.51 per pound collected.*
ILACSD Trash Cleanup Sponsorship	906.1 906.2	Water Quality	Bacteria	Level 1 & Level 4	*During this event 178 participants removed or recycled 1900 pounds of trash and debris, of which approximately 236 pounds was recycled for an efficiency of $0.44 per pound collected.*
Aubrey Street Continuous Deflective Separation Device	906.2	Water Quality	Sediment	Level 1, Level 4 & Level 5	*A total of 1 yard of floating trash and 1 yard of silt and heavy debris was removed from the unit, and 3 hydrocarbon-absorbent pillows required replacement. These amounts are the verified load reduction achieved by this unit.*
Gate Drive Detention Basin Modification	906.2	Water Quality	Sediment	Level 1, Level 4 & Level 5	*Completion of this basin occurred during the dry season. Sampling results from other similar basins converted and operated demonstrate substantial reductions in pollutants, and similar results are expected when sampling is conducted during the next reporting period.*
Mobile Advertising	906.1 906.2	Water Education	Bacteria & Sediment	Level 1, Level 2 & Level 3	*A mobile truck drove pre-determined routes in the Los Peñasquitos WMA in an effort to reach targeted, high priority within the WMA to increase awareness and promote behavior change.*
Public Service Announcements: Karma/Karma Second Chance Public Service Announcements	906.1 906.2	Water Education	Bacteria	Level 1 & Level 2	*PSAs were developed and broadcasted in FY 2007-2008 via TV and radio stations throughout the Los Peñasquitos WMA in both English and Spanish. Effectiveness was measured by tabulating the number of households or listeners reached by the PSAs via surveys. After airing the PSAs, another survey will be conducted to assess changes in knowledge and/or behavior.*
Transit Shelter Advertisements	906.1 906.2	Water Education	Bacteria & Sediment	Level 1 & Level 2	*Think Blue transit shelter advertisements were located at two locations in Los Peñasquitos WMA in FY 2008 in an effort to educating the public about the causes of storm water pollution to encourage positive behavioral change. Effectiveness was measured via telephone surveys and focus groups.*

Table 4-4. Summary of Planned Water Quality and Water Education Activities for Future Years

Planned Activity:	HA:	Type:	Priority Problems Addressed:	Level Outcomes:	Expected Benefit:
Marindustry Drive Hydrodynamic Separator Installation	906.1	Water Quality	Bacteria & Sediment	Level 1 & Level 4	*No water quality monitoring studies have been completed to date, however field verification and site selection occurred in FY 2008.*
Mira Mesa Library Bioretention and Infiltration Retrofit	906.1	Water Quality	Bacteria & Sediment	Level 1 & Level 4	*Assessment or monitoring have not been accomplished at this time, however the conceptual design for this project occurred in FY 2008.*
LID and Watershed Planning Education for Community Planning and Sponsor Groups	906.2	Water Education	All	Level 1 & Level 2	*Educating,Planning and Sponsoring group members on the new permit requirement. Effectiveness will be measured by tabulating results of pre- and post- presentation surveys.*
Infiltration BMP Retrofit Outreach	906.1 906.2	Water Education	Sediment & Bacteria	Level 1, Level 2, Level 3 & Level 4	*Increased infiltration to reduce urban runoff and pollutant loading from MS4 and into receiving waters.*
Watershed Municipal Rain Barrel Installation and Downspout Disconnect Project	906.1 906.2	Water Quality	Bacteria	Level 1 & Level 4	*Determining whether rain barrel/downspout disconnect systems reduce stormwater runoff and associated pollutant loads. Procurement of rain barrels and other materials began during the second quarter of FY2008.*

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5 CONCLUSIONS AND PROGRAM IMPROVEMENTS

5.1 CONCLUSIONS

During FY 2008, the Los Peñasquitos WURMP Copermittees strove to address the overall goal of the WURMP—to positively impact the water quality of the Los Peñasquitos WMA—by focusing on its High Priority Water Quality Problems. To target the identified pollutants, the Copermittees employed the strategy articulated in their 2008 Los Peñasquitos WURMP, which strives to link identified water quality problems to their potential sources. Based on the Water Quality Assessment in Section 2, the Copermittees determined that the High Priority Water Quality Problems in the Los Peñasquitos WMA are bacteria/pathogens in all HAs and sediment in the Miramar HA. It should be noted that the High Priority Water Quality Problems have not changed from previous assessments even though this year's evaluation included the first year of expanded monitoring mandated under the new Municipal Permit.

To effectively address the Los Peñasquitos WMA's High Priority Water Quality Problems, the Copermittees identified and then evaluated them for likely sources at the individual watershed level (please refer to Table 2-9). 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 suspected sources of the High Priority Water Quality Problems and are mostly viewed as effective at reducing the impacts of the sources. Based on this analysis, the Copermittees focused their activities on the following suspected priority sources: eating and drinking establishments; animal facilities; nurseries, greenhouses and botanical or zoological gardens; landscaping-golf courses; cemeteries; and construction sites.

The Los Peñasquitos WURMP Copermittees then developed and implemented watershed water quality and education activities to address these High Priority Water Quality Problems and their sources. Tables 3-1 and 3-2 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 Municipal Permit requirements (e.g., identifying likely pollutant sources, updating water quality and education activities, updating assessments and analyses, etc.). Moreover, ten activities were implemented, six of which focused on water quality and four on education. All of these activities concentrated on the High Priority Water Quality Problems in Los Peñasquitos WMA, which include bacteria and sediment.

The Los Peñasquitos WURMP Copermittees have responded to meet the challenges of implementing the new requirements outlined in the Municipal 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 Los Peñasquitos WURMP Copermittees will continue to implement the activities described in Section 3 of this document in future reporting periods.

5.2 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 Los Peñasquitos WURMP 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, 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 High Priority Water Quality Problems – 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.

In April 2008, the RWQCB and its consultant, PG Environmental, conducted an audit of the WURMP programs within the San Diego region. The review focused primarily on the Carlsbad and San Diego Bay Watersheds. The final audit report was delivered to the San Diego Regional Copermittees in September 2008. The audit report included overall comments on the watershed programs, assessments of individual watershed activities, and an analysis of the efficacy of the Permit's WURMP requirements as currently written. It also

recommended that a dialogue be initiated between RWQCB staff and the Copermittees to amend permit language where necessary to better develop and meet program goals. The San Diego Regional Copermittees, through the Regional WURMP Workgroup, initiated dialogue with RWQCB staff on these issues in November 2008.

The Los Peñasquitos WURMP Copermittees are committed to continue their involvement in this process during the 2009 reporting period. It is anticipated that some changes to the Five-Year Strategic Plan may be necessary based on the outcome of the ongoing discussions between the Copermittees and the RWQCB.