

**APPENDIX A**

**PROGRAM ACTIVITY SUMMARY DESCRIPTIONS FOR FISCAL YEAR 2010-11**

**Watershed Activities Matrix for 2010-11 Activities**

ACTIVITY NAME	Collaborative Watershed Activity	Individual Watershed Activity	Regional Watershed Activity	HIGH PRIORITY POLLUTANTS TO BE ADDRESSED						COMPONENTS IN PROGRESS IN FISCAL YEAR 2010-11							Activity Status for Fiscal Year 2010-11*	Activity Description Location**
				Bacteria	TDS	Total Phosphorous	DO	Gross Pollutants	Turbidity	Planning / Development	Monitoring	Inspections	BMP Implementation	Source Identification	Outreach	Pollutant / Load Reduction		
<b>Activities to Address High Priority TTWQ Sources:</b>																		
Additional Dry Weather Monitoring (City of La Mesa)		X		X	X	X	X	X	X	X	X			X			O	Appendix A-1
Adopt a Park/Adopt A Block (City of La Mesa)		X		X	X		X		X	X			X		X	X	O	Appendix A-2
Bacteria Source Investigation Tracking Study (City of San Diego)		X		X										X			O	Appendix A-4
Canine Corners Harry Griffith Park (City of La Mesa)		X		X	X		X						X		X	X	O	Appendix A-5
Coastal Cleanup Day Sponsorship - University Channel & Alvarado Channel (City of La Mesa)		X		X			X	X		X			X		X	X	O	Appendix A-7
Forrester Creek Homeless Encampment Removal Project (City of El Cajon)		X		X				X					X	X		X	O	Appendix A-8
I Love a Clean San Diego Creek to Bay Cleanup Event Sponsorship (City of La Mesa, City of San Diego and County of San Diego)	X			X			X	X		X			X		X	X	O	Appendix A-9A, A-9B, and A-9C
Increase in Dry Weather Monitoring for Bacterial Indicators in Suspected Problem Areas (City of Santee)		X		X						X				X			O	Appendix A-10
Park Appreciation Days (City of La Mesa)		X		X	X		X	X	X	X			X		X	X	O	Appendix A-11
Prevention of the Release of Pet Fecal Matter in Public Parks (County of San Diego and City of Santee)		X		X			X						X		X	X	O	Appendix A-13A and A-13B
San Diego River Park Foundation Cleanup Event Sponsorship (City of San Diego)		X		X				X		X			X		X	X	O	Appendix A-14
San Diego River Watershed Property Based Inspections (City of San Diego)		X		X				X	X	X		X			X		O	Appendix A-15
San Diego Riverbed Homeless Encampment Removal Project (City of Santee)		X		X				X				X			X		O	Appendix A-16
Trash Removal Activities in Santee (City of Santee)		X		X				X					X		X	X	O	Appendix A-17
Qualcomm Stadium Trash BMP Installation (City of San Diego)		X		X			X	X	X	X							O	Appendix A-52
Robb Field Stormwater Reuse (City of San Diego)		X		X						X							O	Appendix A-53
Stormwater Quality Master Plans for Special Drainage Fee Areas (County of San Diego)		X		X	X	X	X	X	X	X							O	Appendix A-55
Commercial BMP Self Certification Pilot Project (City of La Mesa)		X		X	X	X	X	X	X	X				X	X	X	O	Appendix A-63
Pet Waste Bag Dispenser (City of San Diego)		X		X						X							O	Appendix A-69
Industrial Facility Trash Enclosure Assessment (City of Santee)		X		X				X		X		X		X			N	Appendix A-73
Multi-Family Residential Trash Enclosure Assessment (City of Santee)		X		X				X		X							N	Appendix A-74
Joint Investigation and Enforcement Activities at Carlton Hills Golf Course (Cities of Santee and San Diego)	X			X		X				X		X		X	X		N	Appendix A-75
Multi-Family Residential Trash Area Pilot Program (City of La Mesa)		X		X				X		X		X		X			N	Appendix A-76
Qualcomm Stadium Drop Off Community Cleanup and Recycling Event Sponsorship (City of San Diego)		X						X		X				X	X		N	Appendix A-77
Rainwater Harvesting Rebate Pilot Program (City of San Diego)		X		X	X	X	X	X	X	X							N	Appendix A-78
<b>Activities to Address Watershed High Priority Pollutants:</b>																		
Cabrillo Heights Park Rain Garden Infiltration Project - LID pilot (City of San Diego)		X		X						X							O	Appendix A-19
Coastal Cleanup Day Sponsorship (City of San Diego)		X		X				X					X		X	X	O	Appendix A-20
Land Acquisitions MSCP (County of San Diego)		X		X	X	X	X	X	X	X			X		X		O	Appendix A-23
Maintenance/Inspections of Forrester Creek Trash Barriers (Cities of El Cajon and Santee)		X		X				X				X	X		X		O	Appendix A-24A and A-24B
Park Ridge Blvd Bacteria Treatment Project (City of San Diego)		X		X						X							O	Appendix A-26
Woodside Avenue Detention Basin (County of San Diego)		X		X	X			X		X	X	X			X		O	Appendix A-32
Strategic Plan Implementation (City of San Diego)		X		X	X	X	X	X	X	X							O	Appendix A-48
Additional Receiving Water Monitoring (City of Santee)		X		X	X	X	X	X	X	X							O	Appendix A-49
San Diego River Park Foundation Cleanup Event (County of San Diego)		X		X	X	X	X	X	X	X							O	Appendix A-58
Allied Gardens Green Lot (City of San Diego)		X		X	X	X	X	X	X	X							O	Appendix A-65

Special Studies / Source ID / Pollution Reduction

**Watershed Activities Matrix for 2010-11 Activities**

	ACTIVITY NAME	Collaborative Watershed Activity	Individual Watershed Activity	Regional Watershed Activity	HIGH PRIORITY POLLUTANTS TO BE ADDRESSED						COMPONENTS IN PROGRESS IN FISCAL YEAR 2010-11						Activity Status for Fiscal Year 2010-11*	Activity Description Location**	
					Bacteria	TDS	Total Phosphorous	DO	Gross Pollutants	Turbidity	Planning / Development	Monitoring	Inspections	BMP Implementation	Source Identification	Outreach			Pollutant / Load Reduction
Land Use Activities	Complex Street Green Mall (City of San Diego)		X		X	X	X	X		X	X						O	Appendix A-66	
	Famosa Slough Erosion Sediment Control (City of San Diego)		X							X	X						O	Appendix A-67	
	Residential Rain Barrell Subsidies and Distribution (County of San Diego)		X		X	X	X	X	X	X					X		O	Appendix A-71	
	Addition of Infiltration Strips to Concrete Channels (City of Santee)	X	X	X	X	X	X	X	X	X							F	Appendix A-72	
Education Activities	Focused Outreach to Equestrian Community (County of San Diego)		X		X		X		X						X		O	Appendix A-70	
	Kids Care Fest (City of La Mesa)		X		X	X	X	X		X	X				X		O	Appendix A-64	
	Oktoberfest (City of La Mesa)		X		X	X	X	X		X	X				X		O	Appendix A-39	
	Outreach to Residents Regarding Pet Waste Management (City of Santee)		X		X										X		O	Appendix A-41	
	Public Presentations, Outreach and Media (City of Santee)		X		X	X	X	X	X						X		O	Appendix A-42	
	San Diego River Watershed Brochure (City of San Diego)		X		X	X	X	X	X	X					X		O	Appendix A-54	
	Pet Waste Outreach (County of San Diego, Cities of San Diego, El Cajon, Santee and La	X			X						X	X			X		O	Appendix A-56	
	La Mesa Harry Griffen Park Kiosk (City of La Mesa)		X		X						X				X		N	Appendix A-79	
Public Participation	San Diego River Coalition Meetings (all)	X			X	X	X	X		X	X				X		O	Appendix A-45	
	Project Clean Water - San Diego River Watershed Website (all)	X			X	X	X	X		X	X				X		O	Appendix A-46	
	Public Participation (City of Santee)		X		X	X		X	X						X		O	Appendix A-47	
Administrative Activities																			

\* N = New; O = Ongoing; C = Completed or Cancelled; F = Future

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**TITLE: ADDITIONAL DRY WEATHER MONITORING**  
**ID #: SDR-A1**

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### **ACTIVITY DESCRIPTION**

The City of La Mesa (City) has been focused on eliminating pollutants from entering our receiving water bodies and identifying pollutant sources. Consequently, the City conducted additional non-storm water quality monitoring within the San Diego River Watershed. The purpose of the study was to evaluate the water quality of the discharged flow. Two sampling locations were identified within the Alvarado Drainage Basin. All water samples during this study were taken for the 2011 reporting year and were evaluated for the same suite of constituents measured in the city's annual Dry Weather Field Screening and Analytical Monitoring Program, receiving water body 303 (d) listings constituents, and watershed constituent of concerns as reported in the WURMP. Additional locations were also monitored for Total Coliform, Fecal Coliform, and Enterococcus.

This included measuring flow, temperature, pH, conductivity, turbidity, nitrate, ammonia, orthophosphate, dissolved oxygen, and MBAS in the field and total hardness, dissolved metals, chlorpyrifos, diazinon, surfactants, oil and grease, TDS, TSS, total coliform, fecal coliform, and enterococcus bacteria in the laboratory. Results have been received and are being analyzed.

### **TMDL APPLICABILITY**

Dry weather sampling results support identifying exceedances in pollutant loading for constituents included in the forthcoming comprehensive load reduction plans prepared for the regional Bacteria TMDL.

### **TIME SCHEDULE FOR IMPLEMENTATION**

Multi Year, Ongoing

### **LEAD WATERSHED COPERMITTEE**

- City of La Mesa

### **OTHER PARTICIPATING COPERMITTEES**

### **OTHER PARTICIPATING ENTITIES**

### **HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED**

- Bacteria
- TDS
- Total Phosphorus, Dissolved Oxygen, and pH

### **CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY**

This activity is above and beyond the Dry Weather Field Screening and Analytical Monitoring Program. Analyzing samples of non-storm water discharge from two locations within the San Diego River Watershed provides insight into water quality leaving The City of La Mesa. It also enables the City to conduct potential follow-up investigation of potential pollutant sources. Monitoring is intended as a long-term activity; however, sampling locations may vary each year. This activity is consistent with WURMP Strategic Goals 2 through 5.

### **EFFECTIVENESS MEASUREMENTS**

Monitoring data collected over time in conjunction with identifying and eliminating sources of pollutants will help assess the effectiveness of the program to improve water quality/pollutant load reduction within the City. Data will provide the City with pertinent information that may lead to implementation of various best management practices that may be assessed.

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**TITLE: ADOPT A PARK/ADOPT A BLOCK**  
**ID #: SDR-A2**

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**ACTIVITY DESCRIPTION**

The City of La Mesa has encouraged the public to participate in activities that help reduce pollutant load. Consequently, the City encourages a group of volunteers as part of the Adopt-a-Park and Adopt-a-Block Program. Volunteers are encouraged to routinely pick trash from various parks within the watershed or along their block. There are seven parks within the San Diego River Watershed that are maintained by the volunteer groups. Although specific amount of debris collected is not recorded, the groups efforts are considered a load reduction from debris entering the storm drain system and receiving water body. Volunteers logged approximately 2,000 service hours of time under these programs during this reporting period.

**TMDL APPLICABILITY**

Outreach and pollutant reduction will be a portion of the San Diego River Comprehensive Load Reduction Plans, which will be developed in the 2011-2012 Fiscal Year.

**TIME SCHEDULE FOR IMPLEMENTATION**

Multi Year, Ongoing

**LEAD WATERSHED COPERMITTEE**

- City of La Mesa

**OTHER PARTICIPATING COPERMITTEES**

**OTHER PARTICIPATING ENTITIES**

**HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED**

- Bacteria
- TDS
- DO
- Turbidity

**CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY**

There are seven parks and numerous residential areas located within the San Diego River Watershed. Volunteers assigned to parks or within residential areas routinely collect trash and debris within the watershed. These efforts result in a reduction of debris entering the storm water conveyance system and receiving water. Removal of debris constitutes a reduction in pollutants that are sources of bacteria, TDS, and may reduce turbidity or low oxygen concentration in receiving waters due to eutrophication. This activity is considered by the City as a long term watershed activity.

**EFFECTIVENESS MEASUREMENTS**

Presence of the program activity on each given year . More detailed metrics such as amount of trash collected is not included.

### **ACTIVITY DESCRIPTION**

Phase II San Diego River Source Tracking Investigation was conducted within the City of San Diego's jurisdiction in the San Diego River Watershed Management Area (WMA). The purpose of this investigation was to monitor for fecal bacteria, total dissolved solids (TDS), Total Phosphorus, Nitrogen compounds, total suspended solids, total and dissolved metals, and pesticides. Samples were collected during two storm events. Cleaning of 13 catch basins was performed during dry weather and samples were collected during the cleaning efforts. The objective of the study was to understand the implications of future total maximum daily loads (TMDLs) for fecal bacteria including Bacteroids, total dissolved solids (TDS), phosphorus, and dissolved oxygen (DO). The monitoring results provide the basis to assess the land uses and related activities which contribute bacteria to the San Diego River WMA.

#### Results and Findings

##### Wet weather monitoring:

- 1) The lowest bacteria loads were found at Site 6 at the jurisdictional boundary with La Mesa. However, during the second wet weather sampling event, the majority of samples collected from this jurisdictional boundary were positive for human-specific Bacteroides (an indicator for recent human fecal contamination), suggesting the presence of human fecal matter in the wet weather flows from upstream of the City. Further investigation upstream of this sampling location should be undertaken to investigate and confirm the source of this contamination, which may include homeless populations living within the river floodway, groundwater / septic systems, sanitary sewer systems, and/or illegal dumping.
- 2) Site 9 (at the jurisdictional boundary with the City of Santee) had the highest loads of dissolved orthophosphate, total Kjeldahl nitrogen (TKN), and total nitrogen.
- 3) Site 2 (at the base of the watershed) had the highest loads of nitrite, total phosphorus, total orthophosphate and total dissolved solids (TDS) compared with other subdrainages, or sectors.

##### Dry weather monitoring:

- 1) Standard mechanical catchbasin cleaning, as conducted by the City on an annual basis, appears to effectively reduce pesticide concentrations in dry weather flows.
- 2) Standard catchbasin cleaning, which involves the removal of large solids only, was not found to be effective in the reduction of bacterial concentrations.
- 3) Intensive cleaning, using vacuum and steam cleaning was conducted at three catchbasin locations. One of the three locations was shown to have a decrease in enterococci concentrations. The other two sites did not have high enough bacteria concentrations to evaluate any significant decreases in indicator bacteria concentrations.

### **TMDL APPLICABILITY**

San Diego Region Beaches and Creeks Bacteria TMDL

### **TIME SCHEDULE FOR IMPLEMENTATION**

A Monitoring Plan for Phase II of the San Diego River Source Tracking Investigation was completed in FY 2010. Monitoring occurred in 2010 and reporting was to be completed in 2011, however, due to budgetary constraints the report has yet to be written.

### **LEAD WATERSHED COPERMITTEE**

- City of San Diego

### **OTHER PARTICIPATING COPERMITTEES**

### **OTHER PARTICIPATING ENTITIES**

- None

### **HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED**

- Bacteria/Pathogens

### **CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY**

Both the City's *Strategic Plan for Watershed Activity Implementation* and the Collective Watershed Strategy for the San Diego River WMA identify bacteria as a high priority water quality problem in the WMA, and recommend implementing load reduction/source abatement activities to address them. Implementation of this activity will identify the potential sources or areas that are impacting water quality within the San Diego River, and provide specific management and Best Management Practices (BMPs) recommendations and implementation strategies to reduce bacterial loading from the identified sources.

### **EFFECTIVENESS MEASUREMENTS**

Effectiveness is not being assessed as this study is neither an implementation nor education activity. This study is filling pollutant source data gaps as identified above. Future activities implemented in response to the results of the monitoring study will be reported as separate activities.



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**TITLE: CANINE CORNERS HARRY GRIFFEN PARK**  
**ID #: SDR-A5**

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**ACTIVITY DESCRIPTION**

The City of La Mesa has encouraged the public to participate in activities that help reduce pollutant load. Consequently, the City encourages a group of volunteers known as the Canine Corners to clean up pet waste at Harry Griffen Park. This park is located within the San Diego River Watershed. Although the specific amount of pet waste is not recorded, the group's effort is considered a load reduction for pet waste and a potential reduction in bacteria entering into the storm drain conveyance system.

**TMDL APPLICABILITY**

Outreach and pollutant reduction will be a portion of the San Diego River Comprehensive Load Reduction Plans which will be developed in the 2011-2012 Fiscal Year.

**TIME SCHEDULE FOR IMPLEMENTATION**

Multi Year, Ongoing

**LEAD WATERSHED COPERMITTEE**

- City of La Mesa

**OTHER PARTICIPATING COPERMITTEES**

**OTHER PARTICIPATING ENTITIES**

**HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED**

- Bacteria
- TDS
- Dissolved Oxygen

**CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY**

Harry Griffen Park is located within the San Diego River Watershed. A volunteer group known as the Canine Corners, collect pet waste from the park and dispose of it appropriately. These efforts result in a reduction of pet waste entering the storm water conveyance system and receiving water. Pet waste is considered a source that contributes to elevated levels of bacteria, reduction in dissolved oxygen and increased total dissolved solids. This is considered by the City as long term activity.

**EFFECTIVENESS MEASUREMENTS**

The presence of the program in an active state is the effectiveness measurement. More detailed information related to the amount of material collected is not recorded.

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**TITLE: COASTAL CLEAN UP DAY ALVARADO CHANNEL**  
**ID #: SDR-A7**

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**ACTIVITY DESCRIPTION**

The City of La Mesa supported and participated in the California Coastal Cleanup Day conducted on September 25, 2010 in coordination with I Love a Clean San Diego. A poster specifying date and time for the clean up was placed on the City's bulletin board. California Coastal Cleanup Day is one of the most successful large-scale cleanup projects in the Country. This event enlists thousands of volunteers throughout the state to clean up over 700 polluted coastal and inner-coastal areas. Volunteers met at a designated site in Alvarado Channel to collect debris during this reporting period.

**TIME SCHEDULE FOR IMPLEMENTATION**

Multi Year, Ongoing

**LEAD WATERSHED COPERMITTEE**

- City of La Mesa

**OTHER PARTICIPATING COPERMITTEES**

**OTHER PARTICIPATING ENTITIES**

- I Love A Clean San Diego

**HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED**

- Bacteria (high priority)
- Dissolved Oxygen (high priority)
- Gross Pollutants/Trash

**CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY**

The California Coastal Cleanup Day at Alvarado Channel is considered an important activity in the San Diego River Watershed because removal of trash and debris ultimately improves water quality within the watershed. Trash and debris may result in a number of negative impacts that contribute to increased contamination such as elevated numbers of bacteria in the water and depletion of dissolved oxygen during the decay/breakdown of organic material. The cleanup is an effective means of addressing priority pollutants in the watershed such as bacteria and dissolved oxygen. It is conducted on an annual basis and encourages the public to be active and aware of the importance of pollution prevention. This activity also constitutes a load reduction in pollutants within the watershed. 250 pounds of trash and debris were collected by 32 volunteers during this event. A San Diego River Watershed fact sheet was also provided to volunteers at the Alvarado Channel site and the City's Storm Water Program Manager discussed watershed concepts and concerns prior to commencement of the cleanup. This activity is conducted on an annual basis and considered as a long-term activity to reduce trash and debris in receiving water bodies.

**EFFECTIVENESS MEASUREMENTS**

Number of participants and collective amount of trash/recycling collected.

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**TITLE: FORESTER CREEK HOMELESS ENCAMPMENT REMOVAL PROJECT****ID #: SDR-A8**

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**ACTIVITY SUMMARY**

The City's Public Works Department and the El Cajon Police Department coordinated efforts and conducted nine (9) homeless encampment sweeps along Forrester Creek within the City's jurisdiction. After the removal of illegal encampments, trash and debris was collected and removed from Forrester Creek.

**PARTICIPATING JURISDICTION**

- City of El Cajon

**WATERSHED PRIORITY POLLUTANTS ADDRESSED**

- Trash (high priority)
- Bacteria (high priority)

**HOW THIS ACTIVITY RELATES TO THE SAN DIEGO RIVER WATERSHED**

The sweeps were conducted during the 2010-11 reporting period and targeted homeless camps along Forrester Creek and tributaries. During most of the sweeps, the Police encountered transients and their camps and took appropriate law enforcement action; Public Works maintenance crews then removed the trash and encampment items used for the illegal lodging. The encampment removal contributed to the betterment of the San Diego River Watershed by removing trash and sources of bacteria pollution. This activity is consistent with WURMP Strategic Goal 5 for Bacteria Source Reduction.

**TASKS IMPLEMENTED DURING FY 2010-11**

The following tasks were conducted as part of the Encampment Removal activities during fiscal year 2010-11:

- Removal of trash and debris = 24 Cubic Yards (Cumulative)

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**TITLE: CREEK TO BAY CLEANUP**  
**ID #: SDR-A9A**

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### **ACTIVITY DESCRIPTION**

The City of La Mesa supported and participated in the Creek to Bay Cleanup conducted on April 30, 2011 in coordination with I Love a Clean San Diego. A poster specifying date and time for the clean up was placed on the city's bulletin board. 35 Volunteers from the City, met along Alvarado Channel in La Mesa from 9am to 12pm to collect trash and debris along the channel.

The following tasks were implemented as part of the Creek to Bay Cleanup during 2010-2011:

- 1) Advertised and placed posters for the event on the bulletin board.
- 2) Sponsored event for \$1,000.
- 3) Encouraged the public to participate in the event, which included 35 participants.
- 4) Provided watershed specific fact sheets to volunteers.
- 5) 350 lbs of trash, and 17 lbs of recyclable material were removed from the channel.

### **TMDL APPLICABILITY**

Outreach and pollutant reduction will be a portion of the San Diego River Comprehensive Load Reduction Plans which will be developed in the 2011-2012 Fiscal Year.

### **TIME SCHEDULE FOR IMPLEMENTATION**

Multi Year, Ongoing

### **LEAD WATERSHED COPERMITTEE**

- City of La Mesa

### **OTHER PARTICIPATING COPERMITTEES**

### **OTHER PARTICIPATING ENTITIES**

### **HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED**

- Bacteria
- Dissolved Oxygen

### **CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY**

The Creek to Bay Cleanup is considered an important activity in the San Diego River Watershed because removal of trash and debris ultimately improves water quality within the watershed. Trash and debris may result in a number of negative impacts that contribute to increased contamination such elevated numbers of bacteria in the water and depletion of dissolved oxygen during the decay/breakdown of organic material. The cleanup is an effective means of addressing priority pollutants in the watershed such as bacteria and dissolved oxygen. It is conducted on an annual basis and encourages the public to be active and aware of the importance of pollution prevention. This activity also constitutes a load reduction in pollutants within the watershed. A total of 475 pounds of trash and debris were collected during this event. A San Diego River Watershed fact sheet was provided to volunteers at the cleanup. This activity is considered a long-term activity to reduce pollutants from entering receiving water bodies.

### **EFFECTIVENESS MEASUREMENTS**

Number of participants and collective amount of trash/recycling collected.

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**TITLE: I LOVE A CLEAN SAN DIEGO TRASH SPONSORSHIP**  
**ID #: SDR-A9B**

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### **ACTIVITY DESCRIPTION**

Each spring, I Love A Clean San Diego (ILACSD) conducts its Creek to Bay Cleanup event to target various inland and coastal sites in San Diego County in need of trash and debris removal. ILACSD recruits and organizes site captains and groups of volunteers for each site. A media center is also designated, which promotes environmental stewardship, including the importance of keeping litter and debris from spoiling the region's watersheds. The whole event is marketed throughout San Diego County through a variety of media, including television, radio public service announcements, newspapers, newsletters, electronic mail, bulletin boards, community outreach activities, calendar listings, and word of mouth.

The ILACSD Creek to Bay Cleanup occurred on April 30, 2011. The City of San Diego (City) sponsored the San Diego River, Mission Valley Preserve site in the San Diego River Watershed Management Area (WMA). Approximately 80 volunteers removed 4,220 pounds of trash and debris over a two mile area.

### **TMDL APPLICABILITY**

Indicator Bacteria: Beaches and Creeks SD Region

### **TIME SCHEDULE FOR IMPLEMENTATION**

The Creek to Bay Cleanup has historically been held in April of each year. Prior to that month, the City will coordinate with ILACSD staff to ensure that sites within the San Diego River WMA are included in the list for cleanups and that proper sponsorship arrangements are made.

### **LEAD WATERSHED COPERMITTEE**

- City of San Diego

### **OTHER PARTICIPATING COPERMITTEES**

### **OTHER PARTICIPATING ENTITIES**

- I Love A Clean San Diego Volunteers from the general public

### **HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED**

- Bacteria/Pathogens
- Trash

### **CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY**

Both the City's *Strategic Plan for Watershed Activity Implementation* and the Collective Watershed Strategy for the San Diego River WMA identify bacteria as high priority water quality problems throughout the WMA, and recommend implementing load reduction/source abatement activities to address it.

### **EFFECTIVENESS MEASUREMENTS**

#### **Management Questions**

- 1) What is the load reduction associated with sponsorship?
- 2) What is the efficiency of the trash cleanup? (\$/pound collected)

#### **Targeted Measurable Outcome(s)**

- 1) Achieve load reduction due to reduction of trash (any amount) due to trash cleanup sponsorship

**Assessment Method(s)**

- 1) Tabulation (e.g., number of participants)
- 2) Quantification (e.g., pounds of trash collected)

**Data Recorded**

- 1) Pounds of trash removed (Outcome Level 4): 4,220 lbs
- 2) Total pounds of trash removed (Outcome Level 4): 4,220 lbs
- 3) Number of participants (Outcome Level 1): 80
- 4) Amount of money spent on cleanups for all six watersheds (Outcome Level 1): \$30,000
- 5) Estimated amount of money spent on cleanups for the San Diego River watershed (Outcome Level 1): \$5,000
- 6) Efficiency (Total Cost/Total Pounds Removed): \$1.18/lb

**EXPECTED BENEFITS**

Sponsorship of the Creek to Bay Cleanup will result in load reduction of trash and debris directly and of bacteria indirectly.

**ANALYSIS RESULTS**

At the event, 80 participants removed 4,220 pounds of trash and debris. The average estimated sponsorship cost was \$5,000 per watershed; thus, there was a 4,220 pound load reduction and an efficiency of \$1.18 per pound collected. The efficiency was calculated by dividing the sponsorship cost for the San Diego River WMA by the total pounds of trash removed and recycled.

**CONCLUSIONS**

This trash cleanup activity fulfills a watershed water quality activity for FY2011 because this activity resulted in a measurable pollutant load reduction (Outcome Level 4) of 4,220 pounds of trash removed and recycled during the reporting period. Implementation and assessment of load reduction and efficiency for the cleanup sponsorship will occur again in FY 2012.

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**TITLE: COUNTY SPONSORED CLEAN UP EVENT, FACILITATED BY ILACSD**  
**ID #: SDR-A9C**

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**ACTIVITY DESCRIPTION**

The County of San Diego is one of several sponsors of the annual Creek to Bay clean-up event, facilitated by I Love A Clean San Diego. The April 30, 2011 event marked the 9th year ILACSD managed the county-wide clean up. This year, ILACSD organized 5,350 volunteers that spanned across 75 coastal and inland cleanup sites throughout San Diego County, removing more than 80 tons of trash and debris. While volunteers removed the typical trash items such as cigarette butts and plastic bags, a few unusual items were reported removed as well including tires, a bathroom sink, AstroTurf and an Easy Bake oven. In addition to removing trash and these other items, volunteers had the opportunity to take ownership of their neighborhoods by restoring and enhancing beaches, open spaces and parks. Restoration and enhancing activities include mural painting, storm drain stenciling, graffiti removal, native planting, brush maintenance, tree planting, weeding and general park maintenance activities. The event also empowers local residents to take an active role in preserving their environment year-round.

Specific to the San Diego River Watershed, following are the clean-up sites and statics for trash and recycling removal:

<b>SDR Watershed Site Location</b>	<b>Miles Covered</b>	<b>Volunteers</b>	<b>Trash Removed (lbs)</b>	<b>Recycling Removed (lbs)</b>	<b>Total</b>
Ocean Beach Pier - Veteran's Plaza	1	81	137	0	<b>137</b>
Ocean Beach Pier - Veteran's Plaza	2	48	64	12	<b>76</b>
Serra Mesa – Ruffin Canyon	1	43	2,940	0	<b>2,940</b>
San Diego River – MVP	1	80	4,220	0	<b>4,220</b>
La Mesa – Alvarado Channel	.25	35	320	19	<b>339</b>
Lakeside – Los Coches Creek	1	14	210	52	<b>262</b>
Lakeside – Cactus County Park	1.25	30	3,000	0	<b>3,000</b>
El Cajon – E. Park Ave and Roanoke	3	36	197	30	<b>227</b>
Santee – Forester Creek	1	73	325	43	<b>368</b>
<b>Total:</b>	<b>12.25</b>	<b>462</b>	<b>11,766</b>	<b>194</b>	<b>11,960</b>

**TMDL APPLICABILITY**

This activity supports implementation of the Bacteria TMDL for Beaches and Creeks, which became effective in April 2011.

**TIME SCHEDULE FOR IMPLEMENTATION**

The one-day event took place April 30, 2011

**LEAD WATERSHED COPERMITTEE**

- County of San Diego

#### **OTHER PARTICIPATING COPERMITTEES**

- City of San Diego
- City of Santee
- City of El Cajon
- La Mesa

#### **OTHER PARTICIPATING ENTITIES**

- I Love A Clean San Diego

#### **HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED**

- Bacteria/Pathogens
- Trash

#### **CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY**

Bacteria indicators and trash have been identified as priority water quality problems in the San Diego River Watershed. This activity demonstrates a reduced pollutant load of trash and associated bacteria, which benefits the receiving water quality. Since this activity addresses priority water quality problems it is consistent with the collective watershed strategy.

#### **EFFECTIVENESS MEASUREMENTS**

Activity effectiveness is measured by assessing the amount of trash, debris and recycling removed from the watershed at various locations (Level 4 Outcome). A total of 11,960 lbs of trash, debris and recycling were removed from 10 locations (11,766 lbs of trash and 194 lbs of recycling materials).



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**TITLE: INCREASE IN DRY WEATHER MONITORING FOR BACTERIAL INDICATORS IN SUSPECTED PROBLEM AREAS**  
**ID #: SDR A-10**

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**ACTIVITY DESCRIPTION**

The San Diego Municipal Storm Water Permit (Orders No. 2001-01 and 2007-0001) requires Copermittees to conduct annual dry weather monitoring. In an effort to better track and eradicate bacteria as well as other pollutants of concern, the City of Santee conducts an additional round (total of two rounds) of dry weather monitoring each year. Dry weather monitoring is conducted during the early part of the dry season (May) and at the end of the dry season (September).

**TMDL APPLICABILITY**

This activity will provide additional data on where bacterial indicators are observed in the MS4 which will facilitate the identification of sources and locations of sources of bacterial indicators within the City.

**TIME SCHEDULE FOR IMPLEMENTATION**

2011

**LEAD WATERSHED COPERMITTEE**

- City of Santee

**OTHER PARTICIPATING COPERMITTEES**

- None

**OTHER PARTICIPATING ENTITIES**

- None

**HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED**

- Bacteria/Pathogens
- Conditions
- Gross Pollutants
- Metals
- Nutrients
- Oil & Grease
- Pesticides
- Sediment
- Trash

**CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY**

Fecal coliforms are designated as a 303 (d) impairment in the San Diego River. The City of Santee is required to conduct dry weather monitoring of bacterial indicators once a year under its municipal permit. Bacterial indicators monitored included total coliforms, fecal coliforms and enterococci. Additional monitoring will be conducted on behalf of the City of Santee to facilitate the detection of illegal connections and discharges of fecal matter to the MS4. This activity is consistent with WURMP Strategic Goal 5 for Bacteria Source Reduction.

### **EFFECTIVENESS MEASUREMENTS**

Effectiveness can be assessed up to level 5 (changes in discharge quality) as the activity incorporates the direct measurement of discharge quality over multiple events to assess trends. Monitoring has been conducted since the 1996 and conducted twice a year (with the exception of 2002) since 1997. Overall exceedence rates for bacterial indicators have generally decreased over recent years, compared to the earlier years of the program. No exceedences were reported during May 2011, despite new dry weather monitoring locations being used during 2010 in an effort to find new sources of pollutants within the storm drain system.

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**TITLE: PARK APPRECIATION DAY**  
**ID #: SDR-A11**

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**ACTIVITY DESCRIPTION**

The City of La Mesa (City) has been focused on eliminating pollutants from entering our receiving water bodies. Consequently, the City has organized a Park Appreciation Day for volunteers to remove trash and debris from local parks. Park Appreciation Day takes place once a year and is independent of the Adopt-A-Park Program. A watershed message is read to volunteers at each site location.

**TMDL APPLICABILITY**

Outreach and pollutant reduction will be a portion of the San Diego River Comprehensive Load Reduction Plans which will be developed in the 2011-2012 Fiscal Year.

**TIME SCHEDULE FOR IMPLEMENTATION**

Multi Year, Ongoing

**LEAD WATERSHED COPERMITTEE**

- City of La Mesa

**OTHER PARTICIPATING COPERMITTEES**

**OTHER PARTICIPATING ENTITIES**

**HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED**

- Bacteria
- DO
- Turbidity/TSS
- Trash

**CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY**

There are seven parks in the City of La Mesa that fall within the San Diego River Watershed. Organization of the Park Appreciation Day enabled residents to participate in cleaning up the environment within the San Diego River Watershed. Trash and debris as well as green waste was collected and disposed of appropriately. This event is considered a long-term activity.

**EFFECTIVENESS MEASUREMENTS**

Levels of trash and green waste collected, as well as the number of attendees hearing the watershed message, which is explained at each site.

**ACTIVITY DESCRIPTION**

The installation of Doggie Bag dispensers provides pet owners with bags to collect their pets fecal matter for proper disposal (i.e., in a trash bin). This reduces the accumulation of pet fecal matter in public places, which otherwise would eventually be washed into storm drain facilities and into the watershed. An additional benefit is public health, as it prevents other park users (such as children) coming into contact with the excrement. This activity is also associated with public awareness and outreach. By placing the dispensers and accompanying signage, including municipal code sections, the public becomes aware that not picking up after their pets is a violation of the municipal code and negatively impacts the environment. During FY 2011, City parks personnel continued to maintain pet waste bag dispensers throughout six City parks, and at other popular dogwalking locations. Additional pet waste dispensers have been installed at Woodglen Vista Park (2), Mast Park (2), Town Center Community Park (3) and West Hills Park (1). A total of 360,000 pet waste bags were used during FY 2011. The City of Santee maintained Doggie Bag dispensers at all public parks, along Forester Creek and along Cuyamaca Street, a popular dog walking location. The City encourages residents to cleanup after their pets, and the notices on the dispensers serve as a reminder to owners to clean up after their pet. Using the results of the San Elijo study, this is estimated to represent approximately 93,600 pounds of pet waste eliminated from the watershed, which constitutes a load reduction in both pet waste and bacteria from entering the storm water conveyance system.

**TMDL APPLICABILITY**

This activity removes a source of bacteria which may be discharged into the MS4. This is the type of activity that may be incorporated into a load reduction plan for the Bacteria TMDL.

**TIME SCHEDULE FOR IMPLEMENTATION**

No final year

**LEAD WATERSHED COPERMITTEE**

- City of Santee

**OTHER PARTICIPATING COPERMITTEES**

- None

**OTHER PARTICIPATING ENTITIES**

- None

**HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED**

- Bacteria/Pathogens
- Gross Pollutants
- Nutrients
- Trash

**CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY**

This activity is consistent with WURMP Strategic Goal 5 for bacteria source reduction.

**EFFECTIVENESS MEASUREMENTS**

Effectiveness can be measured at level 3 (behavioral change/BMP implementation) and level 4 (load reduction) by assessing the number of bags used (assuming all bags are used for removing pet waste and that if bags were not provided, then the waste would be left on the ground). Effectiveness can be measured at level 5 (changes in discharge quality) through the

dry weather monitoring program, as this program is designed to assess sources of pollution in the storm drain system, although any change may be inferred, not directly measured. Data collected before and after doggie bag dispensers have been deployed can be used to assess if sources of bacterial indicators have been reduced or eliminated.

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<b>TITLE:</b>	<b>PET WASTE BACTERIAL LOAD REDUCTION / DOGGIE BAG DISPENSER PROGRAM</b>
<b>ID #:</b>	<b>SDR-A13B</b>

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### **ACTIVITY DESCRIPTION**

The installation of Doggie Bag dispensers provides pet owners with bags to collect their pet fecal matter for proper disposal (i.e., in a trash bin). This reduces the accumulation of pet fecal matter in public places, which otherwise would eventually be washed into storm drain facilities and into the watershed. An additional benefit is public health, as it prevents other park users (such as children) coming into contact with the excrement. This activity is also associated with public awareness and outreach. By placing the dispensers and accompanying signage, including municipal code sections, the public becomes aware that not picking up after their pets is a violation of the municipal code and negatively impacts the environment.

The Pet Waste Bacterial Load Reduction Program is considered an important activity in the watershed because it will reduce bacteria and oxygen demand loads into the storm drain system. This is a long-term activity; however, it will be assessed and adjusted on an annual basis through the annual reporting process. Two important goals of this program are to reduce the amount of pet waste found in parks and to educate the public on the need to clean up after their pets. Realization of these goals will thereby result in the reduction of a source of pollutants, most notably bacteria and nutrients, which could be released into the watershed. This activity is also consistent with WURMP Strategic Goal 5 for Bacteria Source Reduction.

### **TMDL APPLICABILITY**

This activity supports implementation of the Bacteria TMDL for Beaches and Creeks, which became effective in April 2011.

### **TIME SCHEDULE FOR IMPLEMENTATION**

- Ongoing

### **LEAD WATERSHED COPERMITTEE**

- County of San Diego

### **OTHER PARTICIPATING COPERMITTEES**

- City of El Cajon
- City of La Mesa
- City of San Diego
- City of Santee

### **OTHER PARTICIPATING ENTITIES**

- None

### **HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED**

- Bacteria/Pathogens

### **CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY**

Bacteria indicators have been identified as a priority water quality problem in the San Diego River Watershed. This activity demonstrates a reduced pollutant load of bacteria, which benefits the receiving water quality. Since this activity addresses a priority water quality problem it is consistent with the collective watershed strategy.

### **EFFECTIVENESS MEASUREMENTS**

These stations distributed approximately 83,980 bags, preventing an estimated 16,796 pounds of pet waste from entering the watershed. Bacteria load reduction estimates are based on the number of bags distributed and the following assumptions obtained from a 2004 County of San Diego study conducted at the San Elijo Lagoon Ecological Reserve:

Assumption 1: The average weight of pet waste per bag is approximately 0.2 lbs

Assumption 2: In addition to the bags taken from the County's dispensers, an additional 30% of pet waste bags are brought to the parks by the pet owners themselves.

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**TITLE: SAN DIEGO RIVER PARK FOUNDATION PARTNERSHIP**  
**ID #: SDR-A14**

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**ACTIVITY DESCRIPTION**

The City of San Diego (City) will partner with the San Diego River Park Foundation (SDRPF) in an effort to help raise awareness of the pollution, bacteria, and sediment issues affecting the San Diego River. The City will provide funding for a number of SDRPF initiatives, including the annual River Days event designed to promote awareness of the pollution issues surrounding the San Diego River. Additionally, funding will support the SDRPF's Clean and Green Team, a volunteer program designed to remove trash and plant native plants within the San Diego River Watershed Management Area (WMA). Funding will also be used to support public cleanups and other educational endeavors.

FY 2011 activities included funding of the SDRPF's Clean and Green Sponsorship. One year of support was provided for the Clean and Green Team. Funding went to:

- 1) Removal and hauling of debris;
- 2) Purchase of tools and supplies;
- 3) Printed materials for volunteers;
- 4) Staff time at the events.

The City sponsored fifteen cleanup events. A total of 58,600 pounds of trash was removed and 3,897 hours of volunteer service occurred through the fifteen cleanup events.

**TMDL APPLICABILITY**

San Diego Region Beaches and Creeks Bacteria TMDL

**TIME SCHEDULE FOR IMPLEMENTATION**

The City will coordinate with SDRPF to provide funding for various projects throughout FY 2012 and beyond. Cleanups will be scheduled as appropriate. Trash Cleanup Events efforts take place throughout the year, and River Days is scheduled to occur in May of each year

**LEAD WATERSHED COPERMITTEE**

- City of San Diego

**OTHER PARTICIPATING COPERMITTEES**

**OTHER PARTICIPATING ENTITIES**

- San Diego River Park Foundation; REI; Union Bank; Home Depot; New Belgium Brewery; John Smith Earthworks

**HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED**

- Trash

**CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY**

The Collective Watershed Strategy identifies bacteria as a high priority water quality problem in the San Diego River WMA. Providing funding to SDRPF will increase awareness of the bacteria and pollution issues surrounding the San Diego River, and the various cleanup initiatives will assist in reducing pollution throughout the San Diego River WMA.



Partnership with SDRPF will provide funding to address bacteria indirectly by removing a bacterial source: trash. Literature published by the United States Environmental Protection Agency on its website states that debris may be contaminated by pathogens that have adverse effects on humans. By decreasing the amount of trash, bacteria loads are reduced. Funding SDRPF's public education and outreach programs will help increase awareness of the pollution issues affecting the San Diego River and foster appropriate behavior change.

## **EFFECTIVENESS MEASUREMENTS**

### **Management Questions**

- 1) What is the load reduction associated with sponsorship?
- 2) What is the efficiency of trash cleanup? (\$/person or \$/ton collected)

### **Targeted Measurable Outcome(s)**

- 1) Load reduction due to reduction of trash (any amount) due to trash cleanup sponsorship

### **Assessment Method(s)**

- 1) Tabulation (e.g., number of participants)
- 2) Quantification (e.g., pounds of trash collected)

### **Data Recorded**

- 1) Pounds of trash removed (Outcome Level 4): 58,600 lbs
- 2) Number of volunteer hours (Outcome Level 1): 3,897 hours
- 3) Total amount of money spent on twenty-eight cleanups (Outcome Level 1): \$33,000
- 4) Activity Efficiency (Total Cost/Total Pounds of Trash and Debris Removed and Recycled): \$0.56/lbs

## **EXPECTED BENEFITS**

The goal of the assessment is to determine the load reduction effectiveness and efficiency of the sponsored cleanups. Partnership with SDRPF will provide funding to address bacteria indirectly by removing a bacterial source: trash. Literature published by the United States Environmental Protection Agency on its website states debris may be contaminated by pathogens that have adverse effects on humans. By decreasing the amount of trash, bacteria loads are reduced. Funding SDRPF's public education and outreach programs will help increase awareness of the pollution issues affecting the San Diego River and foster appropriate behavior change.

## **ANALYSIS RESULTS**

FY 2011 activities included funding of the SDRPF's Clean and Green Sponsorship. One year of support was provided for annual river clean-ups and other activities, the purchase of supplies, trash removal and disposal, volunteer support, and direct staff support of program. The City sponsored twenty-eight events. Over the course of the fifteen events, 58,600 pounds of trash were removed and 3,897 hours of volunteer service occurred. The efficiency of the fifteen cleanup events was \$0.56 per pound, calculated by dividing the total sponsorship cost by the total pounds of trash and debris removed and recycled during all twenty-eight events.

## **CONCLUSIONS**

This activity fulfills a watershed water quality activity for FY 2011 as the effectiveness assessment demonstrates this activity resulted in a measurable pollutant load reduction during this reporting period. The City will coordinate with SDRPF to provide funding for various projects throughout FY 2012 and beyond. Cleanups will be scheduled as appropriate. Clean and Green Team efforts take place throughout the year, and River Days is scheduled for May of each year. Implementation and assessment of load reduction and efficiency of these cleanups will occur again in FY 2012. Future results may be used to compare various types of trash cleanups completed and their associated costs as well as comparing the same types of trash cleanups

that are sponsored each year over time. Effectiveness of public outreach and educational will be measured via citywide surveys comprised of residents in the San Diego River WMA to determine awareness and knowledge retention of water quality issues, as well as changes in behavior. Additionally, water quality monitoring will be conducted throughout the San Diego River WMA to determine whether improvements have occurred.

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**TITLE: SAN DIEGO RIVER PROPERTY-BASED INSPECTIONS**  
**ID #: SDR-A15**

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**ACTIVITY DESCRIPTION**

This activity is part of a larger study in the San Dieguito River, Los Peñasquitos, Mission Bay and La Jolla, San Diego River and Tijuana River watershed management areas (WMAs). The City of San Diego (City) performed an inspection program activity specifically focused on properties with multi-businesses. The activity involved inspecting properties and the businesses located on the properties, regardless whether they are part of the City's commercial and industrial inventory. Traditionally, the City performs individual business inspections in the City's commercial and industrial inventory.

The City developed and implemented a focused inspection activity designed to evaluate the effectiveness of performing multi-business property-based inspections and answer the following management questions related to the commercial and industrial inspections program:

- 1) Does focusing inspections and follow-up on property owners/managers increase BMP compliance?
- 2) Are Property-Based inspections feasible?

The areas selected for inspection were shopping centers, industrial parks, and office parks within five watershed management areas.

The inspections occurred over two phases. Property inspections and business investigations were conducted during both phases. During the first phase, inspectors performed a full inspection of each property. Properties were inspected for BMP compliance, general site observations, pollutant discharge potential, and illicit connections/illegal discharges (IC/IDs) similar to an individual business inspection. Site observations and BMP deficiencies were noted on the inspection form. When an issue was noted during the property inspection and could be associated to a particular business, the inspector initiated an investigation of the business, or businesses. These individual business inspections were limited to investigating the significant deficiencies observed. If an issue could not be associated to one or more businesses on the property, the issue was considered to be the responsibility of the property owner or management company, and no business inspections were performed.

The property inspection reports were sent to the property management company, or to the property owner on file. Where applicable, business inspections reports were sent to corporate offices. If a business was not part of a corporation, the report was sent directly to the business at its physical location, or mailing address.

In phase two of the activity, selected properties from phase one that were determined to be high priority follow-ups were inspected. Each property was inspected using the same procedures utilized in the initial inspections. As part of phase two, business investigations were also performed to those businesses likely responsible for potential storm water issue(s) in the area.

During both phases, if violations were identified, they were recorded for appropriate follow-up. Follow-up inspections occurred based on the severity of the identified violations. If discharges were identified, they were immediately reported to the City's Storm Water hotline number. Lastly, education material was distributed, as applicable, during phase one and two of the inspection activity.

## **TMDL APPLICABILITY**

Indicator Bacteria - Beaches and Creeks SD Region

## **TIME SCHEDULE FOR IMPLEMENTATION**

Implementation and assessment took place during FY2011. This project is complete, and will no longer be included in future reporting updates.

## **LEAD WATERSHED COPERMITTEE**

- City of San Diego

## **OTHER PARTICIPATING COPERMITTEES**

## **OTHER PARTICIPATING ENTITIES**

- None

## **HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED**

- Bacteria/Pathogens
- Oil & Grease
- Sediment
- Trash

## **CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY**

The Collective Watershed Strategy for the San Diego River WMA identifies bacteria as high priority water quality problem in the San Diego River WMA and recommends implementing load reduction/source abatement activities to address it. Implementation of the property inspections contributes to addressing discharges, correcting behaviors, and abating sources associated with bacteria.

## **EFFECTIVENESS MEASUREMENTS**

### **Management Questions**

- 1) Does focusing inspections and follow-up on property owners/managers increase BMP compliance?
- 2) Are Property-Based inspections feasible?

### **Targeted Measurable Outcome(s)**

- 1) Identification of sources of constituents of concern in the San Diego River Watershed

### **Assessment Method(s)**

- 1) Inspections
- 2) Quantification
- 3) Monitoring
- 4) Tabulation
- 5) Reporting

### **Data Recorded**

#### **Phase One Property Inspections**

Number of property inspections = 130

Number of properties recommended for follow-up inspection= 35

Total IC/IDs Observed = 3

Total IC/IDs Eliminated During Inspection = 0

#### **Phase One Business Investigations**

Number of business investigations = 91

Number of sites recommended for follow-up inspection = 72  
Number of Sites That Implemented Some Corrective Action During Inspection (BMP implemented) (Outcome 3) = 2  
Number of Sites with Assumed Source Abatement (based on corrective actions taken) (Outcome 4) = 2  
Total IC/IDs Observed = 7  
Total IC/IDs Eliminated During Inspection = 0

#### Phase Two Property Inspections

Number of property inspections = 27  
Number of properties recommended for follow-up inspection = 22  
Total IC/IDs Observed = 0  
Total IC/IDs Eliminated During Inspection = N/A

#### Phase Two Business Investigations

Number of business investigations = 49  
Number of sites recommended for follow-up inspection = 49  
Number of Sites That Implemented Some Corrective Action During Inspection (BMP implemented) (Outcome 3) = 0  
Number of Sites with Assumed Source Abatement (based on corrective actions taken) (Outcome 4) = N/A  
Total IC/IDs Observed = 0  
Total IC/IDs Eliminated During Inspection = N/A

#### Overall

Number of Sites That Implemented Some Corrective Action Between the Two Phases (Outcome Level 3) = 8  
Number of Sites with Assumed Source Abatement (based on corrective actions taken) (Outcome Level 4) = 8

### **EXPECTED BENEFITS**

The goal of this assessment is to determine the effectiveness of property-based inspections as a method to conduct inspections, which includes identifying and eliminating potential sources of storm water pollution.

### **ANALYSIS RESULTS**

During phase one, 31 properties received property inspections. A total of 32% of these properties needed follow-up to verify that corrective actions/BMPs were implemented. From the phase one property inspections, thirty-six businesses were investigated. For phase two, eight properties from phase one received a follow-up property inspection. Four of the eight properties were recommended for follow-up to verify that corrective actions/BMPs were implemented. From the eight property inspections, there were ten business investigations in phase two. Overall between the two phases of inspections, there were four sites that implemented some corrective action. Lastly, the number of IC/IDs decreased from four to zero between the two phases of the eight property inspections.

Property inspections are an efficient and effective method to assess shared areas and evaluate visible, outdoor areas for BMP implementation at shopping centers, industrial parks, and office parks. Overall, there was a reduction of IC/IDs and improvement in BMP implementation at the properties inspected between the two phases of inspection. There are some BMPs normally

addressed during business inspections that did not apply to property inspections, as they required input from a business representative, or are requirements specific to business operations, such as employee training. In addition, follow-up inspection priorities improved between the inspection phases. Lastly, common areas that have the highest threat to water quality, such as trash, landscaping, and storm drain areas, can be effectively evaluated during a property inspection.

### **CONCLUSIONS**

Overall, property-based commercial and industrial inspections provide efficiency in both cost and coverage, with the ability to inspect a large area with multiple businesses in a short amount of time. Also common areas of high pollutant generating activities are addressed during these inspections, including IC/IDs, trash areas, landscaping and storm drain issues. Only three IC/IDs were observed during the first property inspections phase, and called into the City's hotline for response and follow-up for abatement. No IC/ID was found during the second property inspections phase in the San Diego River WMA. In addition, seven sites implemented some corrective action between the two phases of inspections. Although a load reduction was not calculated, abatement of potential sources may be assumed with corrective actions being implemented; therefore, demonstrating both Level Three (change in behavior/BMP implementation) and Level Four (source abatement/load reduction) outcomes being achieved as a result of conducting the property inspection activity. This activity fulfills the requirement of one of the two required watershed water quality activities.

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**TITLE: SAN DIEGO RIVER HOMELESS ENCAMPMENT REMOVAL PROJECT**  
**ID #: SDR A-16**

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### **ACTIVITY DESCRIPTION**

On behalf of the City of Santee, the San Diego County Sheriff conducts sweeps during the reporting period along the San Diego River within City jurisdiction to remove trash and encampment items. These activities are incorporated into the Sheriff's usual duties within Santee. Local knowledge, including data collected by the San Diego River Park Foundation Riverblitz, and referrals from the public are used to identify where encampments are occurring. Particular effort is invested prior to public participation events (such as trash clean-up events) to ensure that volunteers focus efforts where they can be most beneficial and participants have a safe and pleasant experience.

### **TMDL APPLICABILITY**

Waste from homeless activity in the San Diego River and its tributaries contributes to pollutant loadings in the receiving water. Pollutants may include bacterial indicators and trash.

### **TIME SCHEDULE FOR IMPLEMENTATION**

- Ongoing

### **LEAD WATERSHED COPERMITTEE**

- City of Santee

### **OTHER PARTICIPATING COPERMITTEES**

- None

### **OTHER PARTICIPATING ENTITIES**

- The San Diego River Park Foundation volunteers provide data on the location of homeless encampments.

### **HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED**

- Bacteria/Pathogens
- Conditions
- Gross Pollutants
- Metals
- Nutrients
- Trash

### **CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY**

The sweeps target homeless camps along the San Diego River. During the sweeps, the Sheriff encounters transients and their camps and takes appropriate law enforcement action to remove trash and encampment items used for the illegal lodging. This activity contributes to the betterment of the San Diego River Watershed by removing trash and sources of bacteria pollution. This activity is consistent with WURMP Strategic Goal 5 for Bacteria Source Reduction.

### **EFFECTIVENESS MEASUREMENTS**

Effectiveness assessment can be indirectly assessed up to level 6. Changes in receiving water quality (level 6) could also be observed through monitoring programs, however the causes of what will likely be small changes in receiving water could be numerous and it would not be possible to differentiate the proportional impact of each. Tracking the numbers of homeless encampment within the activity area over time (such as through the results of the San Diego

River Park Foundation Riverblitz surveys) can be used to assess level 3 (behavioral change); level 4 load reductions can be measured through the volume of material removed (not currently tracked by the City of Santee).



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**TITLE: TRASH REMOVAL ACTIVITIES IN SANTEE**  
**ID #: SDR A-17**

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**ACTIVITY DESCRIPTION**

The City hosted or facilitated nine clean-up events within the City during FY 2011. A total of over 23,100 pounds of trash and debris were collected. Six of these were in or adjacent to the San Diego River or Forester Creek. All the events were held within the watershed and should reduce the loading of trash and debris in the river. The City of Santee partners with local volunteer groups such as the San Diego River Park Foundation; Rotarian groups; and churches to host public participation events. City staff help identify where these events are needed, assist with logistical planning; promotion of the event through the City website; and provides waste disposal facilities. If needed, City staff will contact the Sheriff to ensure that any homeless camps in the event area are vacated. During April 2011, a City staff member captained a Creek to Bay Clean-up in Forester Creek to ensure that a site in Santee was included in this regionwide event. Forester Creek was to be subject to another clean-up earlier in the month, but rain resulted in this event being cancelled, making participation in the Creek to Bay Clean-up critical. The staff member helped promote the event, coordinated the provision of support staff and equipment to conduct the event; attended the training provided by event organizers, I Love a Clean San Diego (ILACSD); and provided the data collected during the event to ILACSD.

**TMDL APPLICABILITY**

Trash can provided a potential breeding location of bacteria within the watershed. Removal of trash may result in a reduction of bacterial indicators.

**TIME SCHEDULE FOR IMPLEMENTATION**

No end date for implementation.

**LEAD WATERSHED COPERMITTEE**

- City of Santee

**OTHER PARTICIPATING COPERMITTEES**

**OTHER PARTICIPATING ENTITIES**

- San Diego River Park Foundation, Rotarian groups and churches.

**HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED**

- Bacteria/Pathogens
- Trash

**CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY**

This activity removes trash within the watershed and thereby reduces the potential breeding of bacteria within the watershed, which is consistent with the WURMP Strategic Goal 5 for Bacteria Source Reduction.

**EFFECTIVENESS MEASUREMENTS**

Effectiveness can be measured up to level 4 (pollutant load reduction) by assessing the volume (or weight) of the material removed. Over 23,100 pounds of trash was removed during FY 2011.

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**TITLE: CABRILLO HEIGHTS PARK RAIN GARDEN INFILTRATION PROJECT**  
**ID #: SDR-A19**

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**ACTIVITY DESCRIPTION**

This activity involves the implementation of a large scale low impact development (LID) project in the San Diego River Watershed Management Area (WMA) to reduce runoff volume. The large scale LID site selection focused on city owned parks and parcels that would be suitable for infiltrating off site flow. Site visits were performed to evaluate the field conditions at approximately ten sites in FY 2007 through FY 2008. Cabrillo Heights Park was eventually selected as the site of choice for the Rain Garden Infiltration Project.

The concept for this park includes the installation of rain gardens at two sites within the park. The rain gardens, or bioretention basins, will be used to trap particulate pollution, encourage evapotranspiration, and reduce the amount of trash, oils and grease that make its way to the storm drain system. Flows are mainly filtered through the rain garden, collected, and returned to the storm drain system. A portion of the storm water will remain within the planted bed and be used by plants for evapotranspiration and growth.

The first site, located on the western edge of the park, will be used to treat storm flows from the western parking lot on Kearny Villa Road. All parking lot flows will enter into the storm distribution piping through a couple of storm water catch basins located in the parking lot. These catch basins shall include grating to prevent large solids from entering into the piping, and inserts to prevent trash and other debris from entering the rain garden. PVC storm drain piping will convey the parking lot flows to the rain garden located at the southern end of the parking lot.

The second site is located on the eastern portion of the park and will treat flows from Angier Elementary School and a sporting event parking lot on the east side of the park. All flows from these two locations are directed to two existing separate catch basins; one dedicated for school flows, and one for parking lot flows. Distribution piping will capture flow from these two locations and convey it to the rain garden. Time Schedule for Implementation The project was transferred to the Preliminary Engineering section of the Engineering & Capital Projects Department in September 2008 for the purpose of managing the project through final design, construction and project closeout. The project is currently working on 100% design. Project design is anticipated to continue into FY 2012. Construction is anticipated to begin in FY 2012. Water quality monitoring will be conducted before and after construction to assess the effectiveness in reducing runoff volume and pollutant loading.

**TMDL APPLICABILITY**

San Diego Region Beaches and Creeks Bacteria TMDL

**TIME SCHEDULE FOR IMPLEMENTATION**

The project was transferred to the Preliminary Engineering section of the Engineering & Capital Projects Department in September 2008 for the purpose of managing the project through final design, construction and project closeout. The project is currently working on 100% design. Project design is anticipated to continue into FY 2012. Construction is anticipated to begin in FY 2012. Water quality monitoring will be conducted before and after construction to assess the effectiveness in reducing runoff volume and pollutant loading.

## **LEAD WATERSHED COPERMITTEE**

- City of San Diego

## **OTHER PARTICIPATING COPERMITTEES**

## **OTHER PARTICIPATING ENTITIES**

- None

## **HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED**

- Bacteria/Pathogens

## **CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY**

The Collective Watershed Strategy for the San Diego River Watershed Management Area (WMA) identifies metals and bacteria as high priority water quality problems in the Pueblo Watershed (more specifically Hydrologic Area 908.2) and recommends implementing load reduction/source abatement activities to address them. Implementation of this activity will address both high priority water quality problems by reducing and treating runoff volume via infiltration.

## **EFFECTIVENESS MEASUREMENTS**

### **Management Questions**

- 1) What is the load reduction efficiency due to infiltration?
- 2) How effective is the infiltration at reducing loads of priority pollutants?
- 3) Does the implementation of the infiltration result in a detectable receiving water quality improvement?

### **Targeted Measurable Outcome(s)**

- 1) Reduction in priority pollutant loads

### **Assessment Method(s)**

- 1) Inspections (e.g., ensure the infiltration is working as designed)
- 2) Quantification (e.g., use drainage area and rainfall information to calculate estimated load reduction)
- 3) Monitoring (e.g., collect special study information to collect concentrations and flows to estimate load reduction)
- 4) Tabulation (e.g., amount of money spent on implementation and maintenance, amount of money spent on educational materials)
- 5) Reporting (e.g., estimates of load reduction from 3rd party data)

### **Data Recorded**

N/A

## **EXPECTED BENEFITS**

The goal of the analysis is to determine the load reduction efficiency of LID Best Management Practice (BMP) retrofits. The load reduction efficiencies will also be estimated and used to determine the efficacy of future LID BMP implementations.

## **ANALYSIS RESULTS**

This activity was not in active implementation in FY 2011. Therefore, assessment is not possible at this time.

## **CONCLUSIONS**

No conclusions regarding the effectiveness and efficiency of this activity in reducing pollutant loads and runoff volume can be made at this time.

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**TITLE: COASTAL CLEANUP DAY SPONSORSHIP**  
**ID #: SDR-A20**

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**ACTIVITY DESCRIPTION**

Each fall, San Diego Coastkeeper (SDCK) and I Love A Clean San Diego (ILACSD) conduct the Coastal Cleanup Day event to target various inland and coastal sites in San Diego County in need of trash and debris removal. They recruited and organized site captains and groups of volunteers for each site. A media center is also designated, which promotes environmental stewardship, including the importance of keeping litter and debris from spoiling the region's watersheds. The whole event is marketed throughout San Diego County through a variety of media, including television, radio public service announcements, newspapers, newsletters, electronic mail, bulletin boards, community outreach activities, calendar listings, and word of mouth.

Coastal Cleanup Day occurred on September 25, 2010. The City of San Diego (City) sponsored the San Diego River, Mission Valley Preserve site in the San Diego River Watershed Management Area (WMA). Approximately 86 volunteers removed 1,520 pounds of trash and debris and recycled 10 pounds of trash and debris.

**TMDL APPLICABILITY**

Indicator Bacteria Beaches and Creeks SD Region

**TIME SCHEDULE FOR IMPLEMENTATION**

Coastal Cleanup Day has historically been held in September of each year. Prior to that month, the City will coordinate with SDCK and ILACSD staff to ensure that sites within the San Diego River WMA are included in the list of cleanups.

**LEAD WATERSHED COPERMITTEE**

- City of San Diego

**OTHER PARTICIPATING COPERMITTEES**

**OTHER PARTICIPATING ENTITIES**

- I Love A Clean San Diego San Diego Coastkeeper Volunteers from the general public

**HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED**

- Bacteria/Pathogens
- Trash

**CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY**

Both the City's Strategic Plan for Watershed Activity Implementation and the Collective Watershed Strategy for the San Diego River WMA identify bacteria as a high priority water quality problem throughout the WMA, and recommend implementing load reduction/source abatement activities to address it.

**EFFECTIVENESS MEASUREMENTS**

**Management Questions**

- 1) What is the load reduction associated with sponsorship?
- 2) What is the efficiency of the trash cleanup? (\$/pound collected)

**Targeted Measurable Outcome(s)**

- 1) Achieve load reduction due to reduction of trash (any amount) due to trash cleanup sponsorship

**Assessment Method(s)**

- 1) Tabulation (e.g., number of participants)
- 2) Quantification (e.g., pounds of trash collected)

**Data Recorded**

- 1) Pounds of trash removed (Outcome Level 4): 1,520 lbs
- 2) Pounds of trash recycled (Outcome Level 4): 10 lbs
- 3) Total pounds of trash removed and recycled (Outcome Level 4): 1,530 lbs
- 4) Number of participants (Outcome Level 1): 86
- 5) Amount of money spent on cleanups for all six watersheds (Outcome Level 1): \$30,000
- 6) Estimated amount of money spent on cleanups for the San Diego River watershed (Outcome Level 1): \$5,000
- 7) Efficiency (Total Cost/Total Pounds Removed): \$3.27/lb

**EXPECTED BENEFITS**

Sponsorship of Coastal Cleanup Day will result in load reduction of trash and debris directly and of bacteria indirectly.

**ANALYSIS RESULTS**

At the event, 86 participants removed 1,520 pounds of trash and debris and recycled 10 pounds of trash and debris, which was tracked using data cards provided by the Ocean Conservancy. The average estimated sponsorship cost was \$5,000 per watershed; thus, there was a 1,530 pound load reduction and an efficiency of \$3.27 per pound collected. The efficiency was calculated by dividing the sponsorship cost for the San Diego River WMA by the total pounds of trash removed and recycled.

**CONCLUSIONS**

This trash cleanup activity fulfills a watershed water quality activity for FY2011 because this activity resulted in a measurable pollutant load reduction (Outcome Level 4) of 1,530 pounds of trash removed and recycled during the reporting period. Implementation and assessment of load reduction and efficiency for the cleanup sponsorship will occur again in FY 2012.

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**TITLE: LAND ACQUISITIONS**  
**ID #: SDR-A23**

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**ACTIVITY DESCRIPTION**

The San Diego County Board of Supervisors approved the Multiple Species Conservation Program (MSCP) in 1997 as an integral part of the County's efforts to protect parks and open space. The goal of the MSCP (a 50-year program) is to maintain and enhance biological diversity in the region and maintain viable populations of endangered, threatened, and key sensitive species and their habitats. Land acquisition also provides a significant water quality benefit for the watersheds in which it occurs. MSCP acquisition precludes development from occurring and allows land to retain its natural ability to infiltrate stormwater/runoff. The MSCP is a cooperative effort among the County and other local jurisdictions and the U.S. Fish and Wildlife Service and the California Department of Fish and Game (the Wildlife Agencies). These public partners work with various private landowners, conservation groups, and community planning groups, developers, and other stakeholders. The County of San Diego has adopted an MSCP for the southwestern portion of the County. MSCP plans for the Northern and Eastern portion of the County are in the planning stages. It is expected that the Northern Subarea Plan may be approved during the lifetime of the current stormwater permit. While the northern and eastern plan have yet to be approved by the County of San Diego, lands have been and will continue to be acquired from willing sellers.

**ACTIVITY IMPLEMENTATION**

During the FY2010-11 reporting period there were 261.10 acres of land acquired in the San Diego River Watershed. The current acquisitions are shown in the table below.

<b>Property</b>	<b>Acres</b>	<b>Date</b>	<b>Watershed ID</b>	<b>APNs</b>
Sycamore Canyon, South	160	FY10-11	907.12	325-060-03, 04, 05, 06, 07, 10, 11, 12, 17-24
Fernbrook	29.47	FY10-11	907.21, 907.24	329-171-04
El Monte Flume Trail	18.78	November 17, 2010	907.15	390-061-06, 393-022-10
El Monte Hanson	52.85	August 26, 2010	907.12	Portions of each 392-150-10, and -15
<b>Total</b>	<b>261.10</b>			

During the FY2009-10 reporting period there were no land acquisitions in the San Diego River Watershed.

During the FY2008-09 reporting period there were 557.50 acres of land acquired in the San Diego River Watershed.

During the FY 2007-08 reporting period there were 197.07 acres of land acquired in the San Diego River Watershed.

**TMDL APPLICABILITY**

While it may be supportive of TMDL goals, this activity is not specifically implemented as part of a TMDL compliance program.

### **TIME SCHEDULE FOR IMPLEMENTATION**

- Ongoing

### **LEAD WATERSHED COPERMITTEE**

- County of San Diego

### **OTHER PARTICIPATING COPERMITTEES**

- None

### **OTHER PARTICIPATING ENTITIES**

- U.S. Fish and Wildlife Service
- California Department of Fish and Game
- Private land owners
- Conservation groups
- Community planning groups
- Developers

### **HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED**

- Bacteria/Pathogens
- Gross Pollutants
- Nutrients
- Oil & Grease
- Pesticides
- Trash

### **CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY**

Land acquisition is consistent with the collective watershed strategy and the Strategic Goals of the WURMP in that it averts development, thereby eliminating the possibility of future sources in need of abatement or future pollutant loads in need of reduction.

### **EFFECTIVENESS MEASUREMENTS**

Activity effectiveness will be measured by tracking the number and total acreage of land acquisitions within the watershed on an annual basis. It may also be possible to estimate pollutant loadings avoided as a result of these acquisitions. The County will consider presenting load reduction estimations in WURMP Annual Reports if it determines that they are helpful for the purposes of assessing overall program effectiveness.

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**TITLE: FORESTER CREEK DEBRIS BARRIER**  
**ID #: SDR-A24A**

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#### **ACTIVITY SUMMARY**

The City of El Cajon Public Works Department (City) installed a debris barrier. The debris barrier was custom manufactured for Forester Creek and placed to intercept plastic bottles, Styrofoam cups, paper, shopping carts, and other debris. The barrier was strategically placed in an area adjacent to the City's Public Works Maintenance Yard best suited for prompt cleanup following significant storm events and before it can reach the San Diego River.

#### **PARTICIPATING JURISDICTIONS/ORGANIZATIONS**

- City of El Cajon

#### **WATERSHED PRIORITY POLLUTANTS ADDRESSED**

- Trash (high priority)
- Sediment
- Bacteria (indirect through trash and sediment; high priority)

#### **HOW THIS ACTIVITY RELATES TO THE SAN DIEGO RIVER WATERSHED**

The removal of trash and debris in the San Diego River is important in order to improve water quality in the river. Trash and debris enters the storm water system, Forester Creek and eventually the San Diego River and the Pacific Ocean, posing a threat to wildlife and human health. The debris barrier controls and contains trash and other debris reducing pollutants from ultimately discharging into the San Diego River. This activity is an ongoing long-term activity and trash and debris will continue to be collected and monitored. This activity is consistent with WURMP Strategic Goal 5 for Bacteria Source Reduction.

#### **TASKS IMPLEMENTED DURING FY 20010-2011**

Collection and removal of a total of 1,106.5 cubic yards of trash and debris was conducted as part of maintenance activities by the City of El Cajon. The collection of trash and debris was as follows:

- Assorted Trash/Debris = 47.5 Cubic Yards
- Organic Materials = 41 Cubic Yards
- Sediment = 1,018 Cubic Yards



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**TITLE: MAINTENANCE/INSPECTIONS OF FORESTER CREEK TRASH BARRIER**  
**ID #: SDR 24B**

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**ACTIVITY DESCRIPTION**

The City of Santee installed a debris barrier as part of the Forester Creek Improvement Project. The debris barrier was custom manufactured for Forester Creek and placed to intercept plastic bottles, Styrofoam cups, paper, shopping carts, and other debris. The barrier was strategically placed adjacent to the Prospect Avenue Bridge where the creek transitions from concrete-lined to unlined. The barrier needs to be routinely maintained to remove the collected debris. The debris barrier was installed during 2008. The activity comprises routine maintenance of the barrier, such as before the rainy season and between rain events.

**TMDL APPLICABILITY**

Trash can provide a breeding ground for bacteria, therefore its removal reduces potential bacteria loadings within the watershed.

**TIME SCHEDULE FOR IMPLEMENTATION**

Ongoing

**LEAD WATERSHED COPERMITTEE**

- City of Santee

**OTHER PARTICIPATING COPERMITTEES**

- None

**OTHER PARTICIPATING ENTITIES**

- None

**HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED**

- Bacteria/Pathogens
- Trash

**CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY**

This activity is consistent with WURMP Strategic Goal 5 for Bacteria Source Reduction.

**EFFECTIVENESS MEASUREMENTS**

Effectiveness can be assessed up to level 4 (load reduction), however data specific to removal of trash from the barrier (versus the creek and storm drain maintenance as a whole) is not collected.

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**TITLE: PARK RIDGE BOULEVARD BACTERIA TREATMENT PROJECT**  
**ID #: SDR-A26**

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**ACTIVITY DESCRIPTION**

The City of San Diego proposed construction of a new catch basin, storm drain, trash segregation unit, and bacterial treatment system at the southern terminus of Park Ridge Boulevard. Upon further review of monitoring data conducted by another municipality, it was determined that the bacterial treatment system would be ineffective and this was removed from the project.

A new catch basin was proposed along the western right-of-way south of the intersection with Murray Park Drive. The catch basin will be sized for the full design flow reaching that location. Flows up to an 85th percentile storm event will exit the catch basin and flow through a trash segregation unit, followed in series by the bacterial treatment system. Flows in excess of an 85th percentile storm will exit the catch basin via an overflow pipe and bypass the treatment system.

A manhole will receive flows from both the treatment system and the overflow pipe. From that manhole, a new storm drain will convey flows to the outlet location for the existing storm drain system within the eastern Park Ridge Boulevard right-of-way. A new headwall sized to accommodate both outlets will be required at this location.

**TMDL APPLICABILITY**

San Diego Region Beaches and Creeks Bacteria TMDL

**TIME SCHEDULE FOR IMPLEMENTATION**

The project was transferred to the Preliminary Engineering section of the Engineering and Capital Projects Department in September 2008 for the purpose of managing the project through final design, construction and project closeout. Design began February 2010 and is anticipated to continue through FY 2012. Construction is expected to be completed in FY 2013. Water quality monitoring will be conducted before and after construction to assess the effectiveness in reducing runoff volume and pollutant loading.

**LEAD WATERSHED COPERMITTEE**

- City of San Diego

**OTHER PARTICIPATING COPERMITTEES**

**OTHER PARTICIPATING ENTITIES**

- None

**HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED**

- Bacteria/Pathogens

**CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY**

Both the City's *Strategic Plan for Watershed Activity Implementation* and the Collective Watershed Strategy for the San Diego River Watershed Management Area (WMA) identify bacteria as a high priority water quality problem in the WMA, and recommend implementing load reduction/source abatement activities to address it. Implementation of this activity will

reduce bacterial pollutant loads in the watershed by installing a new catch basin which diverts runoff to a trash segregation unit.

## **EFFECTIVENESS MEASUREMENTS**

### **Management Questions**

- 1) What is the bacteria load reduction efficiency?
- 2) How effective are the catch basin, storm drain and trash segregation unit installations at reducing loads of priority pollutants?

### **Targeted Measurable Outcome(s)**

- 1) Reduction in priority pollutant loads

### **Assessment Method(s)**

- 1) Inspections (e.g., ensure the treatment is working as designed)
- 2) Quantification (e.g., use drainage area and rainfall information to calculate estimated load reduction)
- 3) Monitoring (e.g., collect special study information to collect concentrations and flows to estimate load reduction)
- 4) Tabulation (e.g., amount of money spent on implementation and maintenance, amount of money spent on educational materials)
- 5) Reporting (e.g., estimates of load reduction from 3rd party data)

### **Data Recorded**

N/A

## **EXPECTED BENEFITS**

The goal of this assessment is to determine the project's effectiveness and efficiency for reducing bacteria load with the installation of catch basins, storm drains, and trash segregation units on Park Ridge Boulevard.

## **ANALYSIS RESULTS**

This activity was not in active implementation in FY 2011. Therefore, assessment is not possible at this time.

## **CONCLUSIONS**

No conclusions regarding the effectiveness and efficiency of this activity in reducing pollutant loads and runoff volume can be made at this time.

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**TITLE: WOODSIDE AVENUE DETENTION BASIN**  
**ID #: SDR-A32**

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**ACTIVITY DESCRIPTION**

In 2003, the County of San Diego received Proposition 13 funding from the State Water Resources Control Board (SWRCB) to perform conveyance restoration and construction of an extended detention basin (EDB) to treat urban runoff and low storm flows from a 1.4 square mile area within Hydrologic Area (HA) 907.12 before discharging into Los Coches Creek and the San Diego River. The site is located in the unincorporated community of Lakeside on a vacant property adjacent to Woodside Avenue near Winter Gardens as shown in the attached figure. The constructed basin and concrete removal were designed to act as a demonstration for the effectiveness of similar BMPs at removing pollutants. A water quality monitoring component was also initiated to provide hard evidence of the BMP's pollutant removal capabilities. Although the grant was completed in May 2007, the County continues to monitor the site to gauge its effectiveness at removing pollutants.

**TMDL APPLICABILITY**

This activity is not specifically implemented in compliance with a TMDL.

**TIME SCHEDULE FOR IMPLEMENTATION**

- Implementation of Detention Basin Complete in 2007
- Water Quality monitoring ongoing, annually

**LEAD WATERSHED COPERMITTEE**

- County of San Diego

**OTHER PARTICIPATING COPERMITTEES**

- None

**OTHER PARTICIPATING ENTITIES**

- None

**HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED**

- Conditions
- Dissolved Minerals
- Metals
- Nutrients

**CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY**

This activity targets high priority water quality problems within the watershed by treating urban runoff before it discharges into Los Coches Creek. As such, this activity is consistent with the collective watershed strategy.

**EFFECTIVENESS MEASUREMENTS**

An initial effectiveness assessment of this project was conducted in 2006. The results were presented in detail in: Woodside Avenue Extended Detention Basin Effectiveness Assessment Monitoring Final Report, March, 2007, prepared by Weston Solutions. As previously described, additional monitoring is ongoing.

**Activity Assessment FY 2010-11**

Generally, the results indicate that, constituent concentrations at the outlet of the EDB were often higher than at the inlet. There were, however, overall load reductions for the majority of

constituents measured during both dry and wet weather (for wet weather, only the March 2011 storm event data were included in the calculations). The load reductions were most likely due to the EDB allowing settling or absorption of pollutants before reaching the outlet.

For dry weather, the exceptions (mean loads higher at the outlet than at the inlet of the EDB) included total lead, dissolved zinc and TSS; for wet weather TOC, DOC and nitrate as N had loads that were higher at the outlet. The increased mean dry weather loads of zinc, lead and TSS were due to measurements taken during just one of the three dry weather events (the January 20, 2011 event) during which instantaneous loadings of most constituents were higher at the outlet than at the inlet. This was due to a higher instantaneous flow rate measured at the outlet during that event. In terms of constituent concentrations alone, it may be concluded that the EDB functioned well in reducing nitrate-N, ammonia and total copper concentrations in non storm flows and TDS, TSS, ammonia, total phosphate as P, and metals concentrations during wet weather. The concentrations of other constituents measured, however, were not consistently reduced and were often higher at the outlet of the EDB. The often higher concentrations of metals at the outlet during dry weather conditions may have been due to the deposition of metals and dust near the outlet as it is located adjacent to a high-traffic road.

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**TITLE: OKTOBERFEST**  
**ID #: SDR-A39**

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**ACTIVITY DESCRIPTION**

The City of La Mesa is committed to education outreach at community events. Each year the City hosts an Oktoberfest Event. During the event on October 1-3, 2010 the city's Storm Water Program staff ensured fact sheets were distributed to all Oktoberfest vendors regarding storm water pollution prevention.

**TMDL APPLICABILITY**

Outreach and pollutant reduction will be a portion of the San Diego River Comprehensive Load Reduction Plans which will be developed in the 2011-2012 Fiscal Year.

**TIME SCHEDULE FOR IMPLEMENTATION**

Multi Year, Ongoing

**LEAD WATERSHED COPERMITTEE**

- City of La Mesa

**OTHER PARTICIPATING COPERMITTEES**

**OTHER PARTICIPATING ENTITIES**

- La Mesa Merchants Association

**HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED**

- Bacteria
- TDS
- Turbidity/TSS
- Diazanone
- Metals
- Total Phosphorus, Dissolved Oxygen, and pH

**CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY**

The City took steps to ensure that vendors were knowledgeable regarding pollution prevention during the event, which is located within the San Diego River Watershed.

**EFFECTIVENESS MEASUREMENTS**

The City currently tracks if the vendor fact sheets were distributed to vendors.

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**TITLE: OUTREACH TO RESIDENTS REGARDING PET WASTE MANAGEMENT**  
**ID #: SDR-A41**

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### **ACTIVITY DESCRIPTION**

Concentrations of fecal bacteria have been reported at certain sampling locations during dry weather monitoring in Santee. Based on the observations made during dry weather monitoring, it has been recommended that educational outreach be made to residents in specific areas of the City of Santee where fecal bacteria and/or animal waste has been observed. The objective of this outreach is to educate residents on the importance of properly disposing of pet fecal waste to prevent it from eventually entering the storm drain system. By reducing the amount of pet fecal matter in the storm drain system, this educational effort would eventually assist in the reduction of fecal coliforms in the San Diego River. The City has developed information on pet waste management for residents and participated in the development of a presentation on the subject by the WURMP group. During this fiscal year outreach has focused on the findings of dry weather monitoring and complaints. Typically the outreach is provided to addresses surrounding an area where an issue has been observed. Also, information has been provided to residents who wish to conduct outreach within their communities.

### **TMDL APPLICABILITY**

This activity focuses on the elimination of a source of bacterial indicators.

### **TIME SCHEDULE FOR IMPLEMENTATION**

This is an ongoing activity.

### **LEAD WATERSHED COPERMITTEE**

- City of Santee

### **OTHER PARTICIPATING COPERMITTEES**

- None

### **OTHER PARTICIPATING ENTITIES**

- None

### **HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED**

- Bacteria/Pathogens
- Gross Pollutants
- Nutrients
- Trash

### **CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY**

The activity is consistent with strategic goal 5, bacteria source reduction.

### **EFFECTIVENESS MEASUREMENTS**

Effectiveness can be assessed at level 2 (changes in knowledge/awareness), or possibly at level 4 (load reductions). A survey is conducted every year at a Santee community event. The data from this could be assessed to determine if there have been any changes in knowledge/awareness, although knowledge would be influenced by number of factors and could not be linked to a single educational campaign. Load reductions can be inferred by the elimination of exceedences of bacterial indicators in areas where outreach activities have been focused.

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**TITLE: PUBLIC PRESENTATIONS, OUTREACH AND MEDIA**  
**ID #: SDR-A42**

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**ACTIVITY DESCRIPTION**

During the reporting period, the City of Santee distributed articles specific to storm water in the periodic newsletter entitled 'Santee Review'. The newsletter reaches potentially 21,500 residential, commercial, and industrial addresses. The newsletter is intended to educate residents and visitors about watershed issues and to solicit their cooperation and participation. Articles are included in issues of the Santee Review. The Santee Review has transitioned online, using the City Website, Facebook and Twitter accounts. Online articles have also been posted on stormwater infrastructure maintenance. Future articles will be posted on the City website, Facebook page and Twitter feeds.

**TMDL APPLICABILITY**

Education is a tool that can be used to foster behavioral change. Education focuses on watershed priority pollutants, which are constituents on the 303(d) list or for which a TMDL has already been developed.

**TIME SCHEDULE FOR IMPLEMENTATION**

- Ongoing

**LEAD WATERSHED COPERMITTEE**

- City of Santee

**OTHER PARTICIPATING COPERMITTEES**

- None

**OTHER PARTICIPATING ENTITIES**

- San Diego River Park Foundation events with the City of Santee are promoted on the City of Santee's website.

**HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED**

- Bacteria/Pathogens
- Dissolved Minerals
- Gross Pollutants
- Nutrients
- Pesticides
- Sediment
- Trash

**CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY**

This activity is consistent with WURMP Strategic Goal 4, source reduction at residential land uses, as education typically focuses on residential activities.

**EFFECTIVENESS MEASUREMENTS**

Effectiveness can be measured at level 2 (changes in knowledge/awareness). A survey is conducted at an annual Santee community event and the results can be used to assess overall knowledge in the community. However changes are likely to occur due to multiple factors and cannot be directly attributed to one educational campaign.



### **ACTIVITY DESCRIPTION**

The Project Clean Water website ([http://www.projectcleanwater.org/html/ws\\_map.html](http://www.projectcleanwater.org/html/ws_map.html)) provides a venue for public participation and involvement in local watershed activities. The Watershed Map page is the starting point of the watershed website. Visitors wishing to learn more about a particular watershed can simply 'click' on a desired watershed in the Watershed Map. Once selected, the visitor is linked to the watershed's summary page and provided with additional link options. The visitor can view multiple informational pages on the San Diego River Watershed which include:

- 1) San Diego River Watershed Summary Page (main page)
- 2) San Diego River Watershed Plan Page
- 3) San Diego River Watershed Project Page
- 4) San Diego River Watershed Activities Page

During the FY 2008-09 reporting period, revisions were made to update the content and documents available via the site, including adding reports, repairing broken links, and updating 303(d) listings.

### **TMDL APPLICABILITY**

While it may be supportive of TMDL goals, this activity is not specifically implemented as part of a TMDL compliance program.

### **TIME SCHEDULE FOR IMPLEMENTATION**

- Ongoing

### **LEAD WATERSHED COPERMITTEE**

- County of San Diego

### **OTHER PARTICIPATING COPERMITTEES**

- City of El Cajon
- City of La Mesa
- City of San Diego
- City of Santee

### **OTHER PARTICIPATING ENTITIES**

- None

### **HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED**

- All

### **CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY**

This method of public participation is consistent with the collective watershed strategy in that it encourages any member of the public to take an interest in their watershed and to participate in Copermittee activities.

### **EFFECTIVENESS MEASUREMENTS**

Activity effectiveness is not being measured directly, but can be inferred from tracking the number of 'hits' the web pages received on an annual basis.

1) Watershed Copermittees continued to post the WURMP and annual reports on the Project Clean Water website.

2) There were 4,093 hits on the San Diego River Watershed webpage.

3) There were 786 hits on the San Diego River WURMP webpage.

**ACTIVITY DESCRIPTION**

During the reporting period, the City of Santee has continued to promote the opportunities for public participation in its stormwater program through the storm drain stenciling program and the Roadside Pride program. The storm drain stenciling program has multiple benefits including: 1) Providing stencils on storm drains reminds people in the vicinity that the drain provides a direct connection to the river and that their activities can have a direct impact on the health of the river. This reminder may result in the modification of their behavior to prevent the discharge of pollutants into the storm drain. 2) This program provides groups within the community an opportunity to participate in an activity that is related to an issue that they are interested in. This activity may also provide them with the necessary experience to achieve a goal related within the organization (such as fulfilling a community service requisite). 3) The activity may provide education for people who volunteer to help with the activity who may have limited knowledge of stormwater issues. This knowledge may result in changes to their behavior. The Roadside Pride Program provides Santee-based community groups with an opportunity to earn a small amount of money in exchange for removing litter from roadsides within the community. This on-going program will be promoted alongside other public participation opportunities.

**TMDL APPLICABILITY**

Storm drain stenciling may not be directly addressing a specific pollutant source, but it does serve as a reminder of the public of their connection to the river and the need to prevent the discharge of pollutants.

**TIME SCHEDULE FOR IMPLEMENTATION**

This is an ongoing activity.

**LEAD WATERSHED COPERMITTEE**

- City of Santee

**OTHER PARTICIPATING COPERMITTEES**

- None

**OTHER PARTICIPATING ENTITIES**

- None

**HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED**

- Bacteria/Pathogens
- Dissolved Minerals
- Gross Pollutants
- Trash

**CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY**

This activity is consistent with strategic goal 2, source reduction at park/municipal land uses, as it helps deter illegal discharges into the storm drain from road and pavements.

**EFFECTIVENESS MEASUREMENTS**

Effectiveness can be assessed at level 2 (changes in knowledge/awareness) through a residential survey conducted each year at a community event. However changes in knowledge cannot be attributed solely to the stenciling of storm drain inlets and citizen knowledge will be influenced by a number of factors.

**ACTIVITY DESCRIPTION**

In spring 2006, the City of San Diego (City) initiated efforts to proactively address present and anticipated Total Maximum Daily Load (TMDL), Area of Special Biological Significance (ASBS) protection, and Municipal Storm Water Permit requirements using an integrated approach to maximize resources and achieve efficiencies. The result of these efforts was the *Strategic Plan for Watershed Activity Implementation* (Strategic Plan). Its preparation involved reviewing and assessing available monitoring and source data, land use data, and current and anticipated regulatory drivers. The review and assessment were used to prioritize the water quality problems and their sources for the Watershed Management Areas (WMAs) that the City has jurisdiction in and to geospatially prioritize the City portion of each of those WMAs, using best professional judgment, for activity implementation.

The Strategic Plan uses an integrated, tiered, and phased approach with regards to activity implementation. Activities that address multiple regulations simultaneously and offer multiple environmental sustainability benefits are favored over those that do not (integration). Activities that target pollutant sources and prevent pollutant generation and release in the first place are emphasized and maximized before the implementation of more expensive structural and treatment solutions (tiering). Furthermore, the City pilots activities on a limited scale to measure their effectiveness and efficiency before it implements them on a broad scale (phasing).

The City of San Diego assisted with writing the proposed Senate Bill, provided financial resources for technical experts to assist with its development, participated in negotiations with the automobile and brake pad manufacturers, and provided lobbyist assistance to Senator Kehoe to obtain political support for the passage of the bill. Due to the automobile manufacturers renewed interest in this bill, negotiations were re-initiated to obtain support from all stakeholders, as required by the governor. The bill was rewritten multiple times and discussed by all parties before it was presented to Assembly subcommittees for review and approval. After the reporting period, SB346 was passed by both houses, signed into legislation by the governor on September 25, 2010, and incorporated into the California Health and Safety Code, Article 13.5, commencing with Section 25250.50.

The Outdoor Water Conservation Rebate Program conducted by the Public Utilities Department involved launching a city wide rebate program to assist residents and businesses conserve water by reducing the volume of irrigation and landscape runoff by incentivizing three irrigation modifications: the installation of irrigation smart controllers, micro-irrigation and turf conversion to low water use plants. Rebates are offered through a State of California grant and are available on a first come first served basis until funds are exhausted. The rebate program was implemented in FY11.

In addition, the City is of the opinion that the integration of storm water and urban runoff pollution management with other environmental efforts and infrastructure improvements is crucial for achieving efficiencies and cost savings in a period of seemingly perpetual municipal budget deficits. This integration is also crucial for obtaining the support of storm water and urban runoff pollution management efforts of the public. Development of the Strategic Plan included the formulation of a list of activities to implement during Phase I. These activities have been integrated into the various Watershed Urban Runoff Management Programs (WURMPs) that the City implements in conjunction with other local jurisdictions. Each fiscal year, the City

updates its list of activities to reflect new data, schedule changes, and staffing and budgetary considerations. Many of these activities are reported as watershed water quality and education activities in the various WURMPs. However, the City has a list of project types and sources it plans to implement/target with no specific information. Because these are so conceptual in nature, the City does not report on them as specific activities. Those that are concepts not yet into development but planned for initiation within the next few years are listed in the table below.

### **TMDL APPLICABILITY**

San Diego Region Beaches and Creeks Bacteria TMDL

Note: In addition to current and pending TMDLs, the Strategic Plan reviewed the Clean Water Act 303(d) list of impaired water bodies for the San Diego region and used the information to help prioritize the water quality problems, pollutant sources, and areas of the City to target for activity implementation.

### **TIME SCHEDULE FOR IMPLEMENTATION**

Each activity has its own specific implementation schedule. However, implementation of Phase I of the Strategic Plan (the piloting stage before implementation on a broader scale) is anticipated to occur from FY 2008 through FY 2013.

### **LEAD WATERSHED COPERMITTEE**

- City of San Diego

### **OTHER PARTICIPATING COPERMITTEES**

### **OTHER PARTICIPATING ENTITIES**

- None

### **HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED**

- Bacteria/Pathogens
- Gross Pollutants
- Metals
- Nutrients
- Oil & Grease
- Organics
- Pesticides
- Sediment
- Trash

### **CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY**

Subsequent to the adoption of the Municipal Storm Water Permit (Order No. R9-2007-0001) in January 2007, the Copermittees developed a Model Watershed Strategy to help guide their planning, implementation, and assessment efforts in the various WMAs. The Model Watershed Strategy assists the Copermittees in developing a Collective Watershed Strategy for each WMA. Application of the Model Watershed Strategy results in prioritizing areas within each WMA for activity implementation; selecting and prioritizing appropriate watershed activities, including monitoring and pollutant source identification studies, for each of the prioritized areas; and identifying data gaps with regards to monitoring and pollutant sources, which need to be filled to enable more refined future management decisions.

Although developed independently of each other, the City's Strategic Plan and the Copermittees' Model Watershed Strategy share the approach of reviewing the best available data (e.g., water quality and pollutant source data) and analyzing them geospatially to make management decisions regarding: (1) water quality problems to target and activities to implement; and (2) geospatial prioritization of the WMAs for focused activity implementation.

Note that the Strategic Plan is primarily an activity implementation approach. However, the conclusions that it makes regarding priority water quality problems are in harmony with the conclusions made in Section 3, Water Quality Assessment, of this WURMP annual report.

### **EFFECTIVENESS MEASUREMENTS**

Assessment of the Strategic Plan is a long-term effort and will involve tracking the city's progress on piloting activities over the next five years to be able to make conclusions on how to optimize the efficiency of its storm water program to meet water quality goals and regulations.

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**TITLE: ADDITIONAL RECEIVING WATER MONITORING**  
**ID #: SDR A-49**

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**ACTIVITY DESCRIPTION**

The City of Santee has conducted an additional study each year since 2002 to assess constituents of concern at five receiving water locations within the watershed. These locations include Forester Creek as it enters the City of Santee and prior to its confluence with the San Diego River (two locations); the San Diego River as it enters the City of Santee; Sycamore Creek as it discharges into the San Diego River; and the San Diego River just as it leaves the City of Santee (three locations). These locations are typically sampled twice during the dry season, at the beginning and towards the end of the dry season. This investigation was reviewed during Fiscal Year 2007 and revised to incorporate the constituents listed on the 303(d) list for the Forester Creek and San Diego River. During 2010, a Quality Assurance Project Plan (QAPP) was developed for this activity and all subsequent monitoring activities have been compliant with the QAPP. The City of Santee contracts with a consultant to conduct the monitoring.

**TMDL APPLICABILITY**

Ambient monitoring is conducted for constituent included on the 303(d) for the San Diego River downstream of the City of Santee. This data can be used to assess if exceedences for these constituents are occurring in the City of Santee and to assess trends in water quality. Ambient monitoring can indicate on which segment where exceedences are occurring, helping to direct initial TMDL planning efforts.

**TIME SCHEDULE FOR IMPLEMENTATION**

- Ongoing

**LEAD WATERSHED COPERMITTEE**

- City of Santee

**OTHER PARTICIPATING COPERMITTEES**

- None

**OTHER PARTICIPATING ENTITIES**

- None

**HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED**

- Bacteria/Pathogens
- Dissolved Minerals
- Gross Pollutants
- Metals
- Nutrients
- Sediment
- Trash

**CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY**

Fecal coliforms are designated as a 303(d) impairment in the San Diego River. This activity is consistent with WURMP Strategic Goal 5 for bacteria source reduction.

### **EFFECTIVENESS MEASUREMENTS**

Effectiveness can be assessed up to level 5 (changes in receiving water quality) as the activity incorporates the direct measurement of receiving water quality over multiple events to assess trends. Fecal coliform levels in recent years are lower than the levels recorded in the earlier years of the program. Data for 2010 indicates that during both rounds of monitoring fecal coliform counts decreased from where Forester Creek enters the City to its confluence at the San Diego River. The area where this improvement occurs includes the 1.2-mile restored portion of the Creek.



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**TITLE: QUALCOMM STADIUM TRASH SEGREGATION BEST MANAGEMENT PRACTICE (BMP) INSTALLATION**  
**ID #: SDR-A52**

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**ACTIVITY DESCRIPTION**

Stormwater Drain Inlet Pilot Study involves the installation of one area inlet insert in the San Diego River Watershed Management Area (WMA) to prevent trash and debris from entering the MS4. The insert is installed directly in the existing area within Qualcomm Parking Lot. This site includes the installation of one storm drain area inlet inserts as a retrofit within the existing storm drain system. The inlet insert will be used to reduce the amount of trash, leaves, sediment, and oils and grease that make its way into the storm drain system.

This project was originally identified as Trash Segregation Device Installation in the 2008 San Diego River WURMP. In January 2011, the Qualcomm site was selected and the conceptual design was released for this project.

This project is part of a Storm Drain Inlet Inserts Pilot Project that initiated planning in FY2008. The City of San Diego issued a Request for Proposals (RFP) from interested vendors and advertised the project as a pilot at no cost to the City. Interested vendors submitted their proposals in July 2010 and the City conducted a selection process to evaluate the submitted proposal. Based on the selection panel recommendation, vendor product(s) that met the performance standards and requirements of the RFP have been awarded. The catch basin inlets have been retrofitted with the selected drainage inserts during the month of March in 2011 and the first phase of monitoring started during the month of September in 2011.

**TMDL APPLICABILITY**

San Diego and Creeks Bacterial TMDL Region Beaches

**TIME SCHEDULE FOR IMPLEMENTATION**

Planning was initiated in 2008. The catch basin inlets have been retrofitted during March 2011 and first phase of monitoring started in September 2011.

**LEAD WATERSHED COPERMITTEE**

- City of San Diego

**OTHER PARTICIPATING COPERMITTEES**

**OTHER PARTICIPATING ENTITIES**

- None

**HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED**

- Bacteria/Pathogens
- Oil & Grease
- Sediment
- Trash

**CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY**

Both the City's *Strategic Plan for Watershed Activity Implementation* and the Collective Watershed Strategy for the San Diego River WMA identify bacteria as a high priority water quality problem throughout the watershed, and recommend implementing load reduction/source

abatement activities to address it. Implementation of this activity will address bacteria via the facilitation of trash and debris removal.

## **EFFECTIVENESS MEASUREMENTS**

### **Management Questions**

- 1) What is the load reduction efficiency of the catch basin insert?
- 2) How effective are these catch basin inserts at reducing priority pollutant loads?

### **Targeted Measurable Outcome(s)**

- 1) Reduction in priority pollutant loads

### **Assessment Method(s)**

- 1) Inspections (e.g., ensure the catch basin inserts are working as designed)
- 2) Quantification (e.g., use drainage area and rainfall information to calculate estimated load reduction)
- 3) Monitoring (e.g., collect special study information to collect concentrations and flows to estimate load reduction)
- 4) Tabulation (e.g., amount of money spent on implementation and maintenance)
- 5) Reporting (e.g., estimates of load reduction from 3rd party data)

### **Data Recorded**

- 1) How much money spent on inspections and maintenance
- 2) Trash Capacity
- 3) Flooding Issues
- 4) Functionality during storm event
- 5) % Trash Bypass

## **EXPECTED BENEFITS**

Drain inserts are moderately effective at reducing discharge of trash to receiving waters when loadings are compatible with the maintenance frequency. Excessive flow bypasses is the main cause of reduced performance.

## **ANALYSIS RESULTS**

An effectiveness assessment of this activity is currently underway. The City will conduct project monitoring to evaluate the effectiveness of the drainage insert selected in load reduction and effluent quality.

## **CONCLUSIONS**

Effectiveness and efficiency will be determined by comparing future load reductions to the cost of installation, maintenance and monitoring efforts.

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**TITLE: ROBB FIELD WATER TREATMENT AND REUSE PROJECT**  
**ID #: SDR-A53**

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**ACTIVITY DESCRIPTION**

This project will construct a storm runoff collection and treatment facility at the northwest corner of Robb Field, a Park & Recreation Facility. Once treated, the storm water will be stored and used to irrigate the adjacent 14 acre grass athletic field. The City has named this model approach for Low Impact Development (LID) in commercial and industrial areas as "Storm water Reuse" and, if proven to be effective, anticipates eventually implementing similar LID projects. This project has not moved forward since last fiscal year.

**TMDL APPLICABILITY**

San Diego Region Beaches and Creeks Bacteria TMDL

**TIME SCHEDULE FOR IMPLEMENTATION**

Project planning began in June 2009. The work performed in 2009 included the conceptual design and the City facility stakeholder, Park and Recreation Department (PRD). The City of San Diego is currently assessing our options for implementing this project.

**LEAD WATERSHED COPERMITTEE**

- City of San Diego

**OTHER PARTICIPATING COPERMITTEES**

**OTHER PARTICIPATING ENTITIES**

- None

**HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED**

- Bacteria/Pathogens

**CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY**

The Collective Watershed Strategy for the San Diego River Watershed Management Area (WMA) identifies metals and bacteria as high priority water quality problems in the Pueblo Watershed (more specifically Hydrologic Area 908.2) and recommends implementing load reduction/source abatement activities to address them. Implementation of this activity will address both high priority water quality problems by reducing and treating runoff volume via infiltration.

**EFFECTIVENESS MEASUREMENTS**

**Management Questions**

- 1) How much load reduction can be achieved by retrofitting commercial and industrial streets with LID features such as porous asphalt and infiltration planters?
- 2) How much reduction in runoff volume can be achieved through LID retrofits?
- 3) How efficient are LID retrofits in reducing pollutant loads?

**Targeted Measurable Outcome(s)**

- 1) Reduction in priority pollutant loads

**Assessment Method(s)**

- 1) Inspections (e.g., ensure LID retrofits working as designed)
- 2) Quantification (e.g., use drainage area and rainfall information to calculate estimated pollutant load and runoff volume reduction)

- 3) Monitoring (e.g., collect data on pollutant concentrations and flows to estimate pollutant load and runoff volume reduction)
- 4) Tabulation (e.g., amount of money spent on implementation and maintenance)
- 5) Reporting (e.g., estimates of pollutant load and runoff volume reduction from third-party data)

**Data Recorded**

N/A

**EXPECTED BENEFITS**

The goal of the assessment is to determine the effectiveness and efficiency of the reuse project in reducing runoff volume and reducing pollutant loads. This information will be used to help estimate the pollutant load reduction efficiency of future similar projects.

**ANALYSIS RESULTS**

This activity was not in active implementation in FY 2011. Therefore, assessment is not possible at this time.

**CONCLUSIONS**

No conclusions regarding the effectiveness and efficiency of this activity in reducing pollutant loads and runoff volume can be made at this time.

**ACTIVITY DESCRIPTION**

The City of San Diego (City) and *Think Blue* will implement a new brochure program for the six (6) watershed management areas (WMAs) assigned to the City. These brochures will be used to inform San Diego residents on the benefits of taking steps to reclaim an environmentally and economically healthy watershed. The education pieces will help address high priority water quality problems in each WMA. It will also be used to make citizens aware of specific pollutants and ways individual action can be used to protect each water source as a way to promote a watershed stewardship (all individual actions within each watershed adds up in a cumulative way to influence the health of the water resource).

The main goals of the brochures are to capture the audience's attention, enhance the public's understanding of basic watershed principals, address the high priority water quality problems in each WMA, educate best management practices (BMPs) for future use, and encourage citizens to take positive steps in preventing pollution from entering the storm drain system.

The following WMAs will have a watershed specific brochure created:

- 1) Tijuana River
- 2) San Diego River
- 3) San Diego Bay
- 4) Mission Bay
- 5) San Dieguito River
- 6) Los Peñasquitos

**TMDL APPLICABILITY**

Brochures will target pollutants associated with TMDLs as applicable.

**TIME SCHEDULE FOR IMPLEMENTATION**

Project planning began in FY 2009 and will continue through FY 2012. Implementation and distribution is expected to occur in early FY 2012.

**LEAD WATERSHED COPERMITTEE**

- City of San Diego

**OTHER PARTICIPATING COPERMITTEES**

**OTHER PARTICIPATING ENTITIES**

- None

**HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED**

- Bacteria/Pathogens
- Conditions
- Dissolved Minerals
- Metals
- Nutrients
- Oil & Grease
- Organics
- Pesticides

- Sediment
- Trash

### **CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY**

This activity will address the high priority water quality problems identified in both the City's *Strategic Plan for Watershed Activity Implementation* and the Collective Watershed Strategy for each of the Watershed Management Areas.

### **EFFECTIVENESS MEASUREMENTS**

#### **Management Questions**

- 1) Can we create watershed brochures that increase the public's understanding of basic watershed principals and storm water best management practices (BMPs) and create awareness of the high priority water quality problems in each WMA?
- 2) Can we create watershed brochures that encourage citizens to take positive steps in preventing pollution from entering the storm drain system?

#### **Targeted Measurable Outcome(s)**

- 1) Increased knowledge of basic watershed principles and storm water BMPs after reading the watershed brochure.
- 2) Increased awareness of the high priority water quality problems in each WMA after reading the watershed brochure.
- 3) Increased intent to act to prevent storm water pollution after reading the watershed brochure.

#### **Assessment Method(s)**

- 1) Assessment is still being developed for this activity. Potential assessment methods could include a focused evaluation with two target audiences in combination with various event booths (or workshops). Event attendees would be randomly selected to either receive or not receive the brochure, then asked to complete a response card. At a later point, those who provided contact information will be contacted and asked a series of follow-up questions about awareness, knowledge, and behavior to determine if the brochure had an impact.

#### **Data Recorded**

N/A

### **EXPECTED BENEFITS**

The goal of this assessment is to determine the effectiveness of the watershed brochure in increasing knowledge and awareness in each watershed to create positive behavioral changes. This activity will address the high priority water quality problems identified for each of the Watershed Management Areas.

### **ANALYSIS RESULTS**

An effectiveness assessment of this activity is not possible at this time because the watershed brochure has not yet been distributed.

### **CONCLUSIONS**

The City completed two watershed brochures (Tijuana and San Diego River) in FY 2010 and will continue to create brochures for the remaining watersheds in FY 2012. In FY 2011 it was determined that the watershed brochures for all 6 watersheds within the City of San Diego would need to be revised, including the already completed Tijuana and San Diego River watershed brochures. Watershed brochure revision will be completed in FY2012. Effectiveness assessments are scheduled to begin in late FY 2012. This activity will be used as a watershed education activity as required by the Municipal Permit for education activities.

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**TITLE: STORMWATER QUALITY MASTER PLANS FOR SPECIAL DRAINAGE FEE AREAS**  
**ID #: SDR-A55**

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**ACTIVITY DESCRIPTION**

The County of San Diego is in the process of preparing Storm Water Quality Master Plans (SWQMPs) for ten Special Drainage Fee Areas (SDAs). The SWQMPs address water quality impacts within each area, and are being prepared concurrently with a GIS-based Drainage Facilities Master Plan (DFMP). The County has identified a need to replace or upgrade portions of the drainage systems within its SDAs to meet current drainage design standards. In the process of planning for the proposed drainage facility improvements, the County is seizing the opportunity to identify potential regional BMPs that would assist in improving watershed water quality and minimize associated drainage facility maintenance costs. Ultimately, the SWQMPs will identify and prioritize for implementation a list of potential regional BMPs. BMPs could include extended detention basins, hydrodynamic separators, or other BMP types. Prioritization criteria will include considerations of cost, BMP type, location, land use, and funding. Construction of recommended BMPs is contingent upon the approval of SDA fee increases by the County Board of Supervisors. SWQMPs with the potential to propose BMPs in the San Diego River Watershed include:

- 1) SDA 5 (Bostonia)
- 2) SDA 6 (Lakeside)
- 3) SDA 7 (Alpine)

**TMDL APPLICABILITY**

This activity is not specifically implemented in compliance with a TMDL.

**TIME SCHEDULE FOR IMPLEMENTATION**

Review and adoption of the Storm Water Quality Master Plan is expected to take place in FY 2012-13. Construction of BMPs is contingent upon approval of SDA fee increases by the County Board of Supervisors. If adopted, the Board is likely to consider fee increases in FY 2013-14.

**LEAD WATERSHED COPERMITTEE**

- County of San Diego

**OTHER PARTICIPATING COPERMITTEES**

- None

**OTHER PARTICIPATING ENTITIES**

- None

**HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED**

To be determined

**CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY**

To be determined

**EFFECTIVENESS MEASUREMENTS**

To be determined

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**TITLE: PET WASTE MANAGEMENT OUTREACH**  
**ID #: SDR-A56**

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**ACTIVITY DESCRIPTION**

This activity targets potential, new, and existing pet owners and seeks to educate them on the importance of cleaning up after their pets, as well as tying a water quality and watershed protection message into the outreach activity. A presentation was developed that includes a pre- and post-presentation survey asking participants about their pet waste management practices. Between the pre- and post- surveys, participants review a series of slides that define a watershed, a general description of the MS4 system, the link between bacteria and water quality, and the importance of cleaning up after their pets. The presentation includes tips for managing pet waste properly and encouraging participants to clean up after their pets each and every time. Each jurisdiction selected local pet-related businesses, selecting from pet day-care facilities, pet food retail stores, adoption centers, and/or veterinary clinics to present the materials.

**TMDL APPLICABILITY**

This activity supports implementation of the Bacteria TMDL for Beaches and Creeks, which became effective in April 2011.

**TIME SCHEDULE FOR IMPLEMENTATION**

- Presentation materials & businesses to target completed in 2009
- Commence delivering presentations FY09-10
- Completed presentations during FY10-11

**LEAD WATERSHED COPERMITTEE**

- County of San Diego

**OTHER PARTICIPATING COPERMITTEES**

- City of El Cajon
- City of La Mesa
- City of Santee
- County of San Diego

**OTHER PARTICIPATING ENTITIES**

- None

**HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED**

- Bacteria/Pathogens

**CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY**

Bacteria have been identified as priority water quality problem in the San Diego River Watershed. Pet waste in particular is a potential source of bacteria. Since this activity addresses a priority water quality problem and a priority source, it is consistent with the collective watershed strategy.

**EFFECTIVENESS MEASUREMENTS**

Ten pet waste management presentations were targeted for FY09-10 (Level 1 Outcome). Of the ten planned, all ten outreach events were ultimately completed within FY10-11 with all copermittees in the watershed participating. It is anticipated that an increased score in the post-



presentation survey will show an increase in knowledge and awareness (Level 2 Outcome), and hopefully a change in future behavior (Level 3 Outcome).

Using Community Based Social Marketing tools on the survey, Copermittees may be able to calculate a potential load reduction, as well. One such tool is to ask participants to commit to changing their behavior (e.g.: "I promise to clean up after my pet and dispose of pet waste properly every time") on the survey form. A load reduction may be calculated by estimating the number of participants who make the commitment multiplied by the number of pets they have or are planning to adopt (Level 4 Outcome).

### **FY 2009-10 ACTIVITY IMPLEMENTATION**

During FY09-10 the pet waste survey and training were finalized and used at a number of events.

#### **San Diego RiverFest 2010 – All copermittees in the watershed participated**

The San Diego River Watershed Copermittees participated in the first Annual San Diego RiverFest. The San Diego River Park Foundation held the Annual RiverFest event at the Qualcomm practice field. The event drew a large number of participants; it was initially estimated at approximately 5,000. Copermittees had an outreach booth at the event with educational materials targeting existing pet owners. The materials consisted of a presentation that included pre- and post-presentation surveys asking participants about their pet waste management practices. Between the pre- and post- surveys, participants reviewed a series of slides that defined a watershed, a general description of the storm drain system, the link between bacteria and water quality, and the importance of cleaning up after their pets. The presentation also included tips for properly manage pet waste and encourage participants to clean up after their pets each and every time.

The booth had representation from every Copermittee in the San Diego River Watershed. Every participant that reviewed the presentation and took both surveys received a bag that included a pet waste bag dispenser. Every person that stopped by the booth received informational materials about water quality and watersheds.

#### **City of El Cajon**

The City of El Cajon held an educational booth at the City's Dog Park. The Dog Park has a good influx of dog owners that attend the park throughout the day and provides a good opportunity for outreach. The booth offered educational materials to everyone who stopped by the booth, and giveaways only to pet owners that took the surveys and reviewed the presentation. Many pet owners approached the booth and received informational materials but only a fraction participated in the presentation and surveys. A total of fourteen pet owners took the pre and post presentation surveys.

#### **City of La Mesa**

The City of La Mesa targeted to educate potential, new, and existing pet owners with presentations about pet waste management practices. The presentations were conducted at the San Diego River Park Days event on May 16, 2010; and at the Creek to Bay Clean Up event on April 24, 2010.

In addition, this activity seeks to educate them on the importance of cleaning up after pets, as well as tying a water quality and watershed protection message into the outreach activity. Between the pre- and post- surveys, participants reviewed a series of slides that define a

watershed, a general description of the MS4 system, the link between bacteria and water quality, and the importance of cleaning up after their pets.

### **City of Santee**

The City of Santee contacted Petco, a pet store in Santee that does training sessions for new owners. City staff arranged with the manager at Petco to present the pet waste information at new owner training. Dates when this was done are presented below:

April 29th, 2010 – City staff attended scheduled training, however no pet owners were present to receive the training.

May 27th, 2010 – Two pet owners attended and received training on pet waste management from City staff. Petco has a fair once a year in the Spring where different organizations have booths. Based on a review of the City's business inventory there are no doggie daycare facilities. However the City will continue to find ways to reach out to residents through pet stores and animal hospitals within the City, as well as through community events such as pet licensing clinics.

### **City of San Diego**

On Sunday, May 23rd, Think Blue staff set up a booth at the OB Dog Wash in Ocean Beach to educate dog owners about proper disposal of pet waste. Patrons were asked to take a short pre-test to determine their knowledge of the proper disposal of pet waste and the impact bacteria from pet waste can have on local waterways. Patrons were then encouraged to review a brief flip book presentation entitled, "The Scoop On Dog Poop" which provided educational information about bacteria in found in pet waste, its potential impact on watersheds and methods of proper pet waste disposal. After reviewing the material, patrons were given a post test to determine if their knowledge of pet waste had increased. In exchange for their time patrons were given a pet theme related incentive item (e.g. collapsible dog bowl) for participating. Think Blue staff collected 19 surveys.

On June 5th, Think Blue staff set up a booth at the San Diego Chapter of the Bassett Hound Rescue Annual Picnic held at the Allied Gardens Community Park. Patrons were asked to take a short pre-test to determine their knowledge of the proper disposal of pet waste and the impact bacteria from pet waste can have on local waterways. Patrons were then encouraged to review a brief flip book presentation entitled, "The Scoop On Dog Poop" which provided educational information about bacteria in found in pet waste, its potential impact on watersheds and methods of proper pet waste disposal. After reviewing the material, patrons were given a post test to determine if their knowledge of pet waste had increased. In exchange for their time patrons were given a pet theme related incentive item (e.g. collapsible dog bowl) for participating. Think Blue staff collected 23 surveys.

### **FY 2010-11 ACTIVITY IMPLEMENTATION**

During FY2010-11 the outreach events were finalized and the goal of ten total presentations was met.

### **Results from the Lakeside Open House event (County, City of El Cajon, City of Santee)**

Results are calculated by comparing total correct answers from the pre- and post-presentation surveys, and determining the average percentage difference between the two. A positive percentage shows an increase in knowledge. Of the 31 surveys completed at this event, the overall result was a 28 % increase in knowledge between the pre- and post- surveys. Pre-survey correct answers totaled 101 and post-survey correct answers totaled 140. Out of 31

surveys, 11 participants were able to correctly identify the watershed they live within, and 23 participants signed the Personal Pledge to pick up after their pets regularly. Therefore, it can be concluded that for two-thirds of the surveys collected, we were able to reach Levels 1, 2 and 3 outcomes.

**Lakeside Health and Wellness Fair (County of San Diego)**

Results are calculated by comparing total correct answers from the pre- and post-presentation surveys, and determining the average percentage difference between the two. A positive percentage shows an increase in knowledge. Of the 9 surveys completed at this event, the overall result was a 22 % increase in knowledge between the pre- and post- surveys. Pre-survey correct answers totaled 31 and post-survey correct answers totaled 41. Out of 9 surveys, 4 participants were able to correctly identify the watershed they live within, and all 9 participants signed the Personal Pledge to pick up after their pets regularly. Therefore, it can be concluded that for all of the surveys collected, we were able to reach Levels 1, 2 and 3 outcomes.

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**TITLE: SAN DIEGO RIVER VOLUNTEER CLEAN UP EVENT**  
**ID #: SDR-A58**

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### **ACTIVITY DESCRIPTION**

San Diego River Park Foundation (SDRPF) staff and volunteers identified a site on County property within the City of Santee along the San Diego River that would benefit from a trash and debris removal event. With the sponsorship from the County of San Diego (County), the SDRPF organized and performed a volunteer clean-up effort, using 37 volunteers spending 111 volunteer hours, to remove garbage, debris and abandoned encampments as part of a community clean-up effort on County-owned property within the San Diego river corridor. The property is a 67 acre County-owned parcel located within the San Diego River corridor, APN 381-050-73-00. Staging occurred at the parking area at Cottonwood Avenue and Chubb Lane (see photo). Volunteers identified and removed trash and debris equating to over 2,700 lbs. For the County's sponsorship, the SDRPF provided:

- Event logistics and necessary supplies including tools, safety equipment and trash bags.
- Water and food for volunteers.
- Facilitation of dumpster delivery and placement/removal, including alternative waste disposal.
- Hazardous/alternative waste disposal for tires, car batteries and e-waste.
- Use of SDRPF vehicle.

### **TMDL APPLICABILITY**

This activity is not specifically implemented in compliance with a TMDL.

### **TIME SCHEDULE FOR IMPLEMENTATION**

- One day event held May 28, 2011, from 9AM to 12PM

### **LEAD WATERSHED COPERMITTEE**

- County of San Diego

### **OTHER PARTICIPATING COPERMITTEES**

- None

### **OTHER PARTICIPATING ENTITIES**

- San Diego River Park Foundation
- City of Santee

### **HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED**

- Bacteria/Pathogens
- Trash

### **CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY**

Bacteria indicators and trash have been identified as priority water quality problems in the San Diego River Watershed. This activity demonstrates a reduced pollutant load of trash and associated bacteria, which benefits the receiving water quality. Since this activity addresses priority water quality problems it is consistent with the collective watershed strategy.

### **EFFECTIVENESS MEASUREMENTS**

Activity effectiveness is measured by assessing the amount of trash and debris removed from the site (Level 4 Outcome). 2,745 lbs of trash (compared to 7,700 lbs. in 2010) and debris were removed. Items removed included 1 tire (last year, 17 were removed from this site), 1 dumpsite of burned household items that consisted of 8 bags of trash, 1 quart of oil, 20 lbs of E-waste, a

living room set, a porcelain toilet and 15 lbs of recycling were removed and properly disposed of.

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**TITLE: COMMERCIAL BMP SELF CERTIFICATION PILOT PROGRAM**  
**ID #: SDR-A63**

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### **ACTIVITY DESCRIPTION**

This program includes an assessment of urban runoff from a major, commercial parking lot in La Mesa (super market with additional shops). The load contribution of the parking lot will also be examined. The project also includes an education and outreach component in order to open dialogue with property management. The shopping center management will provide source control BMP maintenance records for the City to assess. Recommendations will be made to property management, and self certifications will be required annually. Additional wet weather samples will be collected for assessment. The City may decide to continue the program for different commercial centers within the watershed.

In FY 2010-2011 monitoring results obtained from target locations. Will continue in next fiscal year.

### **TMDL APPLICABILITY**

Outreach and pollutant reduction activities will be a component of the Comprehensive Load Reduction Plans developed for the Bacteria TMDL. The activity is designed to assess and reduce pollutant loading stemming from commercial parking lot locations.

### **TIME SCHEDULE FOR IMPLEMENTATION**

Multi Year, Ongoing

### **LEAD WATERSHED COPERMITTEE**

- City of La Mesa

### **OTHER PARTICIPATING COPERMITTEES**

### **OTHER PARTICIPATING ENTITIES**

### **HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED**

- Bacteria
- TDS
- Dissolved Oxygen

### **CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY**

The pilot program activity supports the Watershed Strategy by working with property managers in the watershed regarding good housekeeping measures and best management practices that prevent priority pollutants from being discharged into the storm drain system within the watershed.

### **EFFECTIVENESS MEASUREMENTS**

Follow up water quality samples will be collected in order to begin to assess the program. Additionally, due to the variability of sampling, increase in frequency of source control activities onsite will constitute a portion of the effectiveness metric of the activity.

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**TITLE: KIDS CARE FEST**  
**ID #: SDR-A64**

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**ACTIVITY DESCRIPTION**

The City of La Mesa is committed to education outreach at community events. Each year the City in conjunction with Grossmont Healthcare District hosts Kids Care Fest. During the event on September 25, 2010 the city's Storm Water Program had a booth staffed by environmental educators from I Love a Clean San Diego. Approximately 500 people visited the booth during the festival, and received San Diego River Watershed flyers designed to convey information regarding preventing pollution in the watershed. The "Operation Cleanup" watershed model was also demonstrated to visitors. The event is located at Briercrest Park, 9001 Wakarusa St. in La Mesa, CA.

**TMDL APPLICABILITY**

Outreach and pollutant reduction will be a portion of the San Diego River Comprehensive Load Reduction Plans which will be developed in the 2011-2012 Fiscal Year.

**TIME SCHEDULE FOR IMPLEMENTATION**

Multi Year, Ongoing

**LEAD WATERSHED COPERMITTEE**

- City of La Mesa

**OTHER PARTICIPATING COPERMITTEES**

**OTHER PARTICIPATING ENTITIES**

**HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED**

- Bacteria
- TDS
- Dissolved Oxygen

**CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY**

Briercrest Park is located within the San Diego River Watershed. Education and outreach within the watershed allows residents to understand how their actions make a difference in downstream water quality.

**EFFECTIVENESS MEASUREMENTS**

Number of people visiting storm water booth (500).

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**TITLE: ALLIED GARDENS GREEN LOT**  
**ID #: SDR-A65**

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**ACTIVITY DESCRIPTION**

This project will replace a portion of the conventional asphalt in the parking lot of the Allied Garden Recreation Center with porous pavement to allow for the filtration of urban runoff. The runoff from the asphalt around the recreation center and tennis courts will drain to porous pavement. Underdrains beneath the porous pavement will convey the runoff to the existing catch basins.

**TMDL APPLICABILITY**

Future TMDLs: fecal coliform, low dissolved oxygen, phosphorous, total dissolved solids

**TIME SCHEDULE FOR IMPLEMENTATION**

The concept design for this project was completed in June 2010 and was transferred to the Engineering & Capital Projects Department for design and construction in September 2010. Construction is anticipated to finish in FY 2015. Water quality monitoring will be conducted after construction to assess the effectiveness in reducing runoff volume and pollutant loading.

**LEAD WATERSHED COPERMITTEE**

- City of San Diego

**OTHER PARTICIPATING COPERMITTEES**

**OTHER PARTICIPATING ENTITIES**

- None

**HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED**

- Bacteria/Pathogens
- Dissolved Minerals
- Gross Pollutants
- Nutrients
- Sediment

**CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY**

Both the City's *Strategic Plan for Watershed Activity Implementation* and the Collective Watershed Strategy for the San Diego River Watershed Management Area (WMA) identify dissolved oxygen, bacteria, phosphorous, turbidity, and total dissolved solids as high priority water quality problems throughout the San Diego River WMA, and recommend implementing filtration activities to address it.

**EFFECTIVENESS MEASUREMENTS**

**Management Questions**

- 1) What is the load reduction efficiency of retrofits?
- 2) How effective are retrofits at reducing loads of priority pollutants (metals and bacteria)?

**Targeted Measurable Outcome(s)**

- 1) Reduction in priority pollutant loads

**Assessment Method(s)**

- 1) Inspections (e.g., ensure the retrofit is working as designed)



- 2) Quantification (e.g., use drainage area and rainfall information to calculate estimated load reduction)
- 3) Monitoring (e.g., collect special study information to collect concentrations and flows to estimate load reduction)
- 4) Tabulation (e.g., amount of money spent on implementation and maintenance, amount of money spent on educational materials)
- 5) Reporting (e.g., estimates of load reduction from 3rd party data)

**Data Recorded**

N/A

**EXPECTED BENEFITS**

The goal of the project is to reduce runoff volume through filtration. The goal of this analysis is to determine the load reduction efficiency of Low Impact Development (LID) Best Management Practice (BMP) retrofits. The load reduction efficiencies will also be estimated and used to determine the efficacy of future LID BMP implementations of similar type.

**ANALYSIS RESULTS**

This activity was not in active implementation in FY 2011. Therefore, assessment is not possible at this time.

**CONCLUSIONS**

No conclusions regarding the effectiveness and efficiency of this activity in reducing pollutant loads and runoff volume can be made at this time.

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**TITLE: COMPLEX STREET GREEN MALL**  
**ID #: SDR-A66**

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**ACTIVITY DESCRIPTION**

This project will upgrade the existing sidewalk areas with curb cut-outs and vegetated bioretention cells which are designed to capture urban runoff from the tributary asphalt surfaces and provide a load reduction by filtering flows. Runoff absorbed into the amended soils will undergo evapotranspiration through native vegetation.

**TMDL APPLICABILITY**

None

**TIME SCHEDULE FOR IMPLEMENTATION**

The concept design for this project was completed in June 2010. This project is currently on hold pending funding availability. At this time, it is unknown when the project will resume.

**LEAD WATERSHED COPERMITTEE**

- City of San Diego

**OTHER PARTICIPATING COPERMITTEES**

**OTHER PARTICIPATING ENTITIES**

- None

**HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED**

- Bacteria/Pathogens
- Dissolved Minerals
- Gross Pollutants
- Nutrients
- Sediment

**CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY**

Both the City's *Strategic Plan for Watershed Activity Implementation* and the Collective Watershed Strategy for the San Diego River WMA identify dissolved oxygen, bacteria, phosphorous, turbidity, and total dissolved solids as high priority water quality problems throughout the San Diego River WMA, and recommend implementing filtration and infiltration activities to address it.

**EFFECTIVENESS MEASUREMENTS**

**Management Questions**

- 1) What is the bacteria load reduction efficiency?
- 2) How effective are the catch basin, storm drain and trash segregation unit installations at reducing loads of priority pollutants?

**Targeted Measurable Outcome(s)**

- 1) Reduction in priority pollutant loads

**Assessment Method(s)**

- 1) Inspections (e.g., ensure the treatment is working as designed)
- 2) Quantification (e.g., use drainage area and rainfall information to calculate estimated load reduction)

- 3) Monitoring (e.g., collect special study information to collect concentrations and flows to estimate load reduction)
- 4) Tabulation (e.g., amount of money spent on implementation and maintenance, amount of money spent on educational materials)
- 5) Reporting (e.g., estimates of load reduction from 3rd party data)

**Data Recorded**

N/A

**EXPECTED BENEFITS**

The goal of this assessment is to determine the project's effectiveness and efficiency for reducing pollutant loads with the installation of vegetative planters.

**ANALYSIS RESULTS**

This activity was not in active implementation in FY 2011. Therefore, assessment is not possible at this time.

**CONCLUSIONS**

No conclusions regarding the effectiveness and efficiency of this activity in reducing pollutant loads and runoff volume can be made at this time.

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**TITLE: FAMOSA SLOUGH EROSION SEDIMENT CONTROL BMP**  
**ID #: SDR-A67**

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**ACTIVITY DESCRIPTION**

Famosa Slough is a 37 acre wetland immediately upstream of the San Diego River. It is fed by rainwater from the surrounding urban drainage areas and is flushed with salt water from the main San Diego River channel.

This project takes place in two locations in the slough. At one location, curb and gutter as well as a new storm drain pipe and an energy dissipater will be added. The second location will include everything at the first location plus an infiltration channel.

**TMDL APPLICABILITY**

None

**TIME SCHEDULE FOR IMPLEMENTATION**

The concept plan for the project was completed in June 2010. The project is anticipated to be transferred to the Engineering & Capital Projects Department for design and construction in late FY 2011. Construction is anticipated in FY 2015.

**LEAD WATERSHED COPERMITTEE**

- City of San Diego

**OTHER PARTICIPATING COPERMITTEES**

**OTHER PARTICIPATING ENTITIES**

- None

**HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED**

- Sediment

**CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY**

Both the City's *Strategic Plan for Watershed Activity Implementation* and the Collective Watershed Strategy for the San Diego River Watershed Management Area (WMA) identify fecal coliform, low dissolved oxygen, phosphorous, and total dissolved solids as high priority water quality problems throughout the San Diego River WMA.

**EFFECTIVENESS MEASUREMENTS**

**Management Questions**

- 1) What is the load reduction efficiency of retrofits?
- 2) How effective are retrofits at reducing loads of priority pollutants (sediment)?

**Targeted Measurable Outcome(s)**

- 1) Reduction in priority pollutant loads

**Assessment Method(s)**

- 1) Inspections (e.g., ensure the retrofit is working as designed)
- 2) Quantification (e.g., use drainage area and rainfall information to calculate estimated load reduction)
- 3) Monitoring (e.g., collect special study information to collect concentrations and flows to estimate load reduction)

- 4) Tabulation (e.g., amount of money spent on implementation and maintenance, amount of money spent on educational materials)
- 5) Reporting (e.g., estimates of load reduction from 3rd party data)

**Data Recorded**

N/A

**EXPECTED BENEFITS**

The goal of this assessment is to determine the project's effectiveness and efficiency for reducing sediment load.

**ANALYSIS RESULTS**

This activity was not in active implementation in FY 2011. Therefore, assessment is not possible at this time.

**CONCLUSIONS**

No conclusions regarding the effectiveness and efficiency of this activity in reducing pollutant loads and runoff volume can be made at this time.

### **ACTIVITY DESCRIPTION**

The purpose of the activity is to assess the effectiveness of installing pet waste stations at Home Owners Associations and Business improvement Districts. When pet waste bags are available, pet owners are more apt to pick up pet wastes and dispose of it properly, thereby eliminating pollutants from the environment and potentially from receiving waters. The assessment focused on evaluating the installation of pet waste stations as a best management practice (BMP) in reducing pollutant loading in correlation with the number of bags deployed. The project includes site evaluations and selections, the installation of pet waste bag dispensers and all-in-one pet stations (dispenser and trash receptacle), pre- and post- site observations for the effectiveness assessments.

The sites were evaluated using a two-step process to screen and select potential project sites. An initial desktop site screening process was performed to identify candidate sites. Site visits were conducted at these locations to further assess the location and gather information used in the selection process.

Initial criteria used to identify the sites included: 1) areas of concentrated dog use adjacent to residential neighborhoods, 2) community and Storm Water Division staff input, 3) potential for partnerships to conduct ongoing operation and maintenance, and 4) positive community acceptance.

Geographical Information System maps depicting potential residential areas, trails, parks, schools, dog parks, and other points of interest, as well as water bodies that are 303(d) listed as impaired for bacterial indicators, nitrogen, and phosphorous, were used during the screening process to develop an initial list of potential project locations.

Based on the results of the initial screening and site assessment visits, the preliminary project locations for each watershed were further evaluated for: 1) dog-related activities within each area, 2) the availability of trash receptacles 3) the absence of pet waste receptacles, 4) the degree of pet waste observed, 5) the potential for vandalism, 6) the priority within the watershed, and 7) the potential for a site-specific contact group to be the point of contact at each site.

Two sites within the San Diego River WMA were selected: the Montanosa Condos, Westview Condos and Robb Field Bike Path. During the initial assessments for site selection, a moderate degree (between 10 and 20 piles) of pet waste was observed at the Montanosa Condos; a low degree (fewer than 10 piles) of pet waste was observed at the Howard Lane Neighborhood Park; a high degree (more than 20 piles) of pet waste was observed at the Robb Field Bike Path.

Two All-in-One Pet Stations (bag dispenser, trash receptacle and sign), were installed at the condos. Robb Field Bike Path was selected as a sign only installation, three signs were installed, each sign was mounted on existing infrastructure along the path.

### **TMDL APPLICABILITY**

San Diego Region Beaches and Creeks Bacteria TMDL

### **TIME SCHEDULE FOR IMPLEMENTATION**

Project planning and design started in FY 2010. Installation of the pet waste bag dispensers and the effectiveness assessment concluded during FY 2011.

### **LEAD WATERSHED COPERMITTEE**

- City of San Diego

### **OTHER PARTICIPATING COPERMITTEES**

### **OTHER PARTICIPATING ENTITIES**

- None

### **HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED**

- Bacteria/Pathogens

### **CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY**

Both the City's *Strategic Plan for Watershed Activity Implementation* and the Collective Watershed Strategy for the Tijuana River WMA identify bacteria as high priority water quality problems and recommends implementing load reduction/source abatement activities to address them. Implementation of this activity will address the high priority water quality problems by reducing exposed pet waste carrying bacteria.

### **EFFECTIVENESS MEASUREMENTS**

#### **Management Questions**

- 1) What are the high pet waste use areas throughout the City where pet waste creates a pollution issue?
- 2) What is the most cost-effective pet waste station configuration?
- 3) What are the installation and operations and maintenance costs associated with pet waste stations?
- 4) What types of opportunities for partnerships exist for businesses, HOAs, and other community groups to sponsor pet waste stations operations and maintenance?

#### **Targeted Measurable Outcome(s)**

- 1) Reduction in pet waste from installation of pet waste stations.
- 2) Assessment of pollutant load reduction.
- 3) Decrease in pet waste through awareness from signage.

#### **Assessment Method(s)**

- 1) Monitor the pet waste reduction from pre-installation to post-installation.
- 2) Monitor overall pollutant load reduction from pet waste installations.
- 3) Monitor outcomes from sign only installation versus pet waste station installation

#### **Data Recorded**

- 1) Weekly average of waste piles observed prior to installation (Montanosa Condos): 8.7
- 2) Weekly average of waste piles observed prior to installation (Westview Condos): 4.5
- 3) Weekly average of waste piles observed prior to installation (Robb Field Bike Path): 20.5
- 4) Weekly average of waste piles observed after installation (Montanosa Condos): 7.0
- 5) Weekly average of waste piles observed after installation (Westview Condos): 5.2
- 6) Weekly average of waste piles observed after installation (Robb Field Bike Path): 11.8
- 7) Weekly average number of bags dispensed (Montanosa Condos): 53.0
- 8) Weekly average number of bags dispensed (Westview Condos): 49.5
- 9) Weekly average number of bags dispensed (Robb Field Bike Path): Sign Only Site
- 10) Average Weekly waste pile reduction (Montanosa Condos): 1.7
- 11) Average Weekly waste pile reduction (Westview Condos): -0.7

- 12) Average Weekly waste pile reduction (Robb Field Bike Path): 8.7
- 13) Percent waste reduction (Montanosa Condos): 19%
- 14) Percent waste reduction (Westview Condos): 0
- 15) Percent waste reduction (Robb Field Bike Path): 42%
- 16) Ratio of bags dispensed to pet waste piles removed (Montanosa Condos): 31.8
- 17) Ratio of bags dispensed to pet waste piles removed (Westview Condos): N/A
- 18) Ratio of bags dispensed to pet waste piles removed (Robb Field Bike Path): N/A

### **EXPECTED BENEFITS**

The City of San Diego Transportation & Storm Water Department, Storm Water Division (Storm Water Division) commissioned the Pet Waste Bag Dispenser Station Design and Implementation Project to assess the effectiveness of the installation of pet waste bag dispenser stations as a Best Management Practice (BMP) for reducing bacteria in the watersheds within the City of San Diego's jurisdiction. The first phase of the Project emphasized installing pet waste bag dispensers in partnership with the Parks and Recreation Department in community parks and at open space trailheads. This second phase of the Project focused on the installation of pet waste stations in residential housing areas in partnership with Homeowners Associations (HOA), Business Improvement Districts (BIDs), and other community groups. The intent was to assess the potential for community partnerships to assist with ongoing maintenance and operation of the bag dispenser stations.

### **ANALYSIS RESULTS**

Observations and pet waste pile counts were conducted for a total of twelve weeks. For six weeks prior to the installation of the pet waste bag dispensers, weekly observations and cleaning were conducted to assess the conditions at each site. An additional six weeks of observations were conducted after the installations. One of the locations was a site with signs only installed to assess the effectiveness of a sign only approach as an alternative. Prior to the installation of the pet waste bag dispensers a weekly average of 8.7 piles and 4.5 piles were observed at the Montanosa and Westview Condos respectively and Robb Field Bike Path (sign only) 20.5 piles.

After the installation of the pet waste bag dispensers, a weekly average of 7.0 piles and 5.2 piles were observed at the Montanosa and Westview Condos, respectively and Robb Field Bike Path (sign only) 11.8 piles. The observations show an average weekly reduction of 1.7 piles at the Montanosa Condos. The Westview Condos had an increase, although minor in the amount of waste observed, to -0.7 piles. However, almost 50 bags per week were dispensed at this site on average.

The average weekly reduction was calculated by subtracting the pre-installation average count of observed waste and the post-installation average count of observed waste. This translates to 19.5% reduction at the Montanosa Condo and 42.4% reduction at the Robb Field Bike Path (sign only) in the amount of pet waste piles observed.

### **CONCLUSIONS**

A review of the collected data revealed the installation of the pet waste bag stations and the installation of signs contributed to the reduction of pet waste piles within the study area. The average number of bags dispensed weekly at the Montanosa and Westview Condos corresponds to an estimated removal of 10.7 pounds and 10.0 pounds of pet waste per week, respectively. At the signs only site Robb Field Bike Path reflected a weekly reduction of 8.7 piles.



Overall, this activity demonstrated that there are positive, measureable pollutant load reductions due to the installation of pet waste bag dispensers and related signage.

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**TITLE: FOCUSED OUTREACH TO THE EQUESTRIAN COMMUNITY**  
**ID #: SDR-A70**

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**ACTIVITY DESCRIPTION**

The County of San Diego conducts focused water quality outreach and education to the equestrian community and other owners of small animals and livestock in the unincorporated area. Education focuses on BMPs of importance to this community, including manure management, composting, and erosion control. Activities include, but are not limited to: workshops, booths at community events, development and distribution of educational materials, surveys, and partnerships with equestrian community groups.

**TMDL APPLICABILITY**

This activity will assist the County to achieve compliance with the multi-watershed Bacteria TMDL for beaches and creeks, and with other more localized TMDLs for constituents such as nutrients and sediment.

**TIME SCHEDULE FOR IMPLEMENTATION**

ACTIVITY IMPLEMENTATION FY09-10

**Workshops**

During FY09-10, the County of San Diego, in coordination with the Solana Center for Environmental Innovation (Solana Center) and the Mission Resource Conservation District (MRCDC), conducted workshops targeting equestrians to provide training on a variety of topics including:

- Manure management and composting basics
- Prevention of odors and flies
- Benefits of composting
- Application of compost to gardens and landscapes
- Land use regulations
- Protection of local water sources.

Workshops during FY09-10 were held in Bonita, Lakeside, Ramona, and Fallbrook. The table below identifies the primary watershed(s) addressed by each workshop.

<b>Location</b>	<b>Presentation Date</b>	<b>No. of Attendees</b>	<b>Primary Watershed Addressed</b>
Lakeside	11/7/09	23	San Diego River
Ramona	2/3/10	43	San Dieguito, San Diego River
Fallbrook	6/19/10	22	Santa Margarita, San Luis Rey
Bonita	6/28/10	25	Sweetwater

**Total** **113**

Funded by the County, the workshops were presented by staff from either the Solana Center or the MRCDC. They included presentations and handouts identifying resources available to equestrians. Information presented included local watershed awareness, manure management, and composting. Key elements included how proper manure management relates to horse health, water quality, and maintenance of positive relationships with neighbors. Question and answer sessions were conducted in all workshops.

The workshops in Lakeside and Fallbrook were held on Saturday mornings on private properties with horses and active compost piles at each location. Participants were encouraged to observe the compost piles and the BMPs in place to prevent contamination of runoff. The presentation at the Fallbrook workshop included poster boards of a Power Point presentation. The other two workshops (Ramona and Bonita) were held in classroom settings at community meeting rooms on weeknight evenings. Presentations were casual discussions that included BMPs to improve horse health, protecting properties from erosion, and preventing polluted runoff discharges. San Diego County watershed maps were displayed at all workshops, allowing attendees to locate their local watershed. Assessment was conducted in the form of pre- and post-workshop surveys.

### Community Events

County staff and/or contractors also provided targeted outreach to the equestrian community at four equestrian themed community events during FY09-10. At each of these events, the County staffed a booth, answered questions from attendees, and disseminated information on manure management, composting, and erosion control practices. A watershed map was displayed and participants were asked to complete surveys assessing general knowledge and awareness. Additional details on each community event are provided in the table below.

Date	Event Title	Location	No. of Attendees	Primary Watershed(s) Addressed
10/17/09 & 10/18/09	Vaquero Days Western Heritage Festival	Granville Martin Ranch/Museum	45	Sweetwater
5/16/2010	Creek Hollow Ranch Horse Dressage Event	Creek Hollow Ranch	10	San Dieguito
5/28&29/10	Valley Center Rodeo Days	Valley Center Community Center	35	San Luis Rey
6/19/2010	Sweetwater Farms Hunter/Jumper Horse Event	Sweetwater Farms	15	Sweetwater

### Development and Distribution of Educational Materials

During FY09-10, County staff created a coloring sheet and handout to direct interested equestrians to more detailed information regarding BMPs for manure management (see attached).

### Surveys

In order to promote knowledge, awareness, and proper manure management among horse owners in the unincorporated areas, the County contracted a firm with expertise in Community Based Social Marketing (CBSM) to conduct research to: 1) identify the specific manure management actions currently taken by horse owners, and 2) identify the barriers and benefits to proper manure management. Research included in-person interviews with horse owners in the unincorporated communities of Lakeside and Ramona. Intercept interviews were conducted at four retail outlets (feed stores) to reach a diverse set of horse owners. Interviews took place between June 16 and June 27, 2010. A total of 96 horse owners were interviewed. The results

of these interviews were summarized in a final report that contains key findings and recommendations for future outreach and program development (see attached report).

## **ACTIVITY IMPLEMENTATION FY10-11**

### **Workshop Activities**

During FY 2010-11, the County of San Diego, in coordination with the Solana Center for Environmental Innovation (Solana Center) and the Mission Resource Conservation District (MRCD), conducted workshops targeting equestrians to provide training on a variety of topics including:

- Manure management and composting basics
- Prevention of odors and flies
- Benefits of composting
- Application of compost to gardens and landscapes
- Land use regulations
- Protection of local water sources.

Workshops during FY10-11 were held in Lakeside, Ramona\*, Bonsall, and Rainbow. The table below identifies the primary watershed(s) addressed by each workshop. The Ramona event was rescheduled due to low attendance and the “make-up” workshop will be held on November 19, 2011.

<b>Location</b>	<b>Presentation Date</b>	<b>No. of Attendees</b>	<b>Primary Watershed Addressed</b>
Lakeside	6/25/11	24	San Diego River
Ramona	6/18/11	1	San Diego River, San Dieguito
Bonsall	6/25/11	22	Santa Margarita, San Luis Rey
Rainbow	6/18/11	14	Santa Margarita, San Luis Rey

**Total** **69**

Funded by the County, the workshops were presented by staff from either the Solana Center or the MRCD. They included presentations, demonstration BMPs, presentations, and handouts identifying resources available to equestrians. Information presented included local watershed awareness, manure management, and composting. Key elements included how proper manure management relates to horse health, water quality, and maintenance of positive relationships with neighbors. Question and answer sessions were conducted in all workshops. Assessment was conducted in the form of pre- and post-workshop surveys.

### **Community Events**

County staff and/or contractors also provided targeted outreach to the equestrian community at three equestrian themed community events during FY10-11. At these events, the County staff gave a presentation or hosted a booth, answered questions from attendees, and disseminated information on manure management, composting, and erosion control practices. A watershed map was displayed and participants were asked to complete surveys assessing general knowledge and awareness. Additional details on each community event are provided in the table below.

<b>Date</b>	<b>Event Title</b>	<b>Location</b>	<b>No. of Attendees</b>	<b>Primary Watershed(s) Addressed</b>
8/2/2010	San Diego Equestrian Foundation	Hunter Equestrian Center	35	Carlsbad
10/10/2010	Horse Heritage Festival	Walnut Grove Park	75	Carlsbad
10/16/2011	Vaquero Days Western Heritage Festival	Granville Martin Ranch/Museum	150	Sweetwater

### **Surveys**

In order to promote knowledge, awareness, and proper manure management among horse owners in the unincorporated areas, the County contracted a firm with expertise in Community Based Social Marketing (CBSM) to conduct research to:

- 1) Identify barriers to proper manure management,
- 2) Develop strategies to remove barriers, and
- 3) Conduct pilot studies to gauge the effectiveness of compost workshops.

Research included in-person interviews with horse owners in the unincorporated communities of Lakeside and Ramona. Information was gathered via survey questionnaires and in person interviews during the Lakeside manure composting workshop. A total of 24 horse owners participated in the survey. The results of these interviews were summarized in a final report that contains key findings and recommendations for future outreach and program development (see attached report).

### **LEAD WATERSHED COPERMITTEE**

- County of San Diego

### **OTHER PARTICIPATING COPERMITTEES**

### **OTHER PARTICIPATING ENTITIES**

- Solana Center for Environmental Innovation
- Mission Resource Conservation District

### **HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED**

- Bacteria/Pathogens
- Nutrients
- Sediment

### **CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY**

Providing education to the equestrian community is consistent with the Collective Watershed Strategy in that it promotes source control for high priority water quality problems in this watershed.

## **EFFECTIVENESS MEASUREMENTS**

Composting Workshop Lakeside: To assess changes in knowledge and awareness (Level 2 Outcomes) among participants in the workshops described above, pre- and post-workshop surveys were administered. Pre-workshop survey results were as follows:

- 65% responded correctly that stormwater is not treated.
- 38% responded that they currently pick up manure more often than once per week.
- 50% responded that they currently compost manure.
- On a scale from 0 (none) to 10 (all) participants responded with a mean score of 3.59 that they believe horse manure contributes to pollution of local waterways.
- On a scale from 0 (none) to 10 (all) participants responded with a mean score of 4.07 for the amount of manure equestrians currently composted.

When asked about what equestrians can do to prevent pollution caused by horse manure, 59.5% of respondents suggested ideas on the pre-workshop survey. Post-workshop survey results were as follows:

- 71% responded correctly that stormwater is not treated.
- 53% responded that they plan to remove manure from corrals and stalls every day in the future.
- 87% responded they plan to manage manure generated by composting in the future.
- On a scale from 0 (none) to 10 (all) participants responded with a mean score of 4.41 responded that they believe horse manure contributes to pollution of local waterways.
- On a scale from 0 (none) to 10 (all) participants responded with a mean score of 7.36 for the amount of manure equestrians plan to compost, indicating a statistically significant increase from the 4.07 mean score initially reported.

Based on the pre- and post-assessment at the Lakeside workshop, it appears that the workshop was successful at fostering positive attitudes and perceived control about composting. Future workshops might benefit from highlighting key issues such as the potential for manure to pollute waterways and the fact that stormwater is not treated.

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**TITLE: RESIDENTIAL RAIN BARREL SUBSIDIES & DISTRIBUTION****ID #: SDR-A71**

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**ACTIVITY DESCRIPTION**

The County of San Diego will implement a rain barrel subsidy and distribution program targeting residents throughout the County. Rain barrel use will be encouraged through a subsidy eligible to residents of unincorporated areas, but residents of incorporated cities will also be able to purchase rain barrels at an affordable price. In addition to distribution of rain barrels, the program will promote outdoor water conservation and runoff reduction through public outreach before and during rain barrel distribution events. Use of rain barrels can provide many benefits including reduced reliance on potable water through the storage and use of rain water for irrigation. For example, one inch of rain falling on a 1,000 square foot roof can harvest 600 gallons of rainwater. Retention and use of rain water onsite reduces the overall loading of pollutants leaving properties and entering the stormwater system. By implementing a rain barrel system, residents can:

- 1) Reduce water pollution as a result of rainwater runoff, which carries pesticides, fertilizers, sediment, oil, and trash into local rivers and lakes.
- 2) Reduce soil erosion and improve the ability of water to infiltrate the soil at a reduced intensity.
- 3) Reduce dependency on imported water supplies and realize cost savings as a result of reduced water use.
- 4) Help save energy by reducing demand on our drinking water supply.

In addition to the provision of rain barrels, County's staff will be present at distribution events to provide educational materials and responses to any questions raised by participants. Residents from multiple watersheds are expected to participate in this regional activity and will be asked to sign a maintenance agreement as a condition of receiving a rain barrel at the subsidized rate. Follow up surveys will be conducted with participating residents to ensure that rain barrels have been installed and to encourage proper maintenance.

**ACTIVITY IMPLEMENTATION FY09-10**

Activity during FY 09-10 included conducting research to identify desired rain barrel features, including: size, ease of installation, cost, and features to discourage mosquito breeding. The County solicited bids through a formal procurement process in order to obtain the best quotes for provision of rain barrels and for one-year of customer service assistance following distribution. A vendor was selected, a contract awarded, and planning was initiated for two distribution events to be held during FY 10-11. In addition, the County used an existing website to provide more information to the public ([www.rethinkwateruse.org](http://www.rethinkwateruse.org)).

**ACTIVITY IMPLEMENTATION FY10-11**

The Rancho San Diego Sales event took place at Cuyamaca College on August 28, 2010, from 8 a.m. until noon. Seventy-eight (78) residents took advantage of the opportunity and purchased a total of 102 rain barrels. Unincorporated area residents purchased 69 rain barrels at the subsidized rate of \$30 plus tax, and 33 rain barrels were sold at the full price of \$60 plus tax.

On September 26, 2010, Fallbrook residents stood in line before the 9 a.m. start time for the distribution event at Fallbrook Village Square. By the 1 p.m. closing time, 105 residents had purchased a total of 138 rain barrels. Of those, 103 barrels were sold to unincorporated area residents at the subsidized rate and 35 barrels were sold at full price.

A total of 185 residents participated in these events and a total of 240 rain barrels were sold. Participating residents came from a variety of watersheds throughout the County.

Watershed	Anza Borrego	Santa Margarita	San Luis Rey	Carlsbad	San Dieguito	Peñasquitos	<b>San Diego River</b>	San Diego Bay	Tijuana	Unk
Total Residents	2	24	61	6	8	4	<b>27</b>	50	2	1

**TMDL APPLICABILITY**

This activity was not specifically implemented in compliance with a TMDL.

**TIME SCHEDULE FOR IMPLEMENTATION**

Planning for this activity occurred during FY09-10. The events took place on August 28, 2011 (Cuyamaca College) and September 26, 2011 (Fallbrook Village). Additional events are being considered for implementation in FY 12-13.

**LEAD WATERSHED COPERMITTEE**

- County of San Diego

**OTHER PARTICIPATING ENTITIES**

- None

**HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED**

- All

**CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY**

Rainwater harvesting reduces the overall amount of runoff from individual properties resulting in a decrease in pollutant mobilization and erosion.

**EFFECTIVENESS MEASUREMENTS**

Level 1 Outcomes were achieved through the number of rain barrels sold to individuals living in the County and through the signing of rain barrel maintenance agreements.



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**TITLE: ADDITION OF INFILTRATION STRIPS TO CONCRETE CHANNELS**  
**ID #: SDR-A72**

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### **ACTIVITY DESCRIPTION**

The City of Santee has received preliminary approval for funding of a pilot project through the San Diego Region Integrated Regional Water Management Plan (IRWMP). The project has been designed specifically to address water quality issues relating to concrete channel-lined drainage. The City has been successful in restoring portions of unlined channels such as Forester Creek and Woodglen Vista Creek. However, it is not possible to implement restoration in concrete channels where there is existing development, for example in the upper portion of the Woodglen Vista Creek, which is surrounded by residences. The City is proposing to conduct a pilot project to explore how infiltration can be introduced at the base of concrete channels to facilitate infiltration of dry weather (and to some extent wet weather) flows. This would mimic the pre-development hydrology of the drainage channel and help recharge groundwater. Infiltration of runoff will divert pollutants from being discharged to the San Diego River. Some designs may allow the recruitment of plants in the infiltration areas which will help remove pollutants such as nutrients from the run-off. The objective of the project is to achieve some of the benefits of restoration without compromising flood control capacity and function. This project complements other projects the City is undertaking to survey the condition of corrugated metal pipe (CMP) portion of the storm drain system and to prioritize CMP replacement. The activity will be implemented when funds are available (projected to be during calendar year 2012).

### **TMDL APPLICABILITY**

This activity focuses on the elimination of dry weather flows which may contribute to bacteria loading, and is therefore applicable to the bacteria TMDL.

### **TIME SCHEDULE FOR IMPLEMENTATION**

This activity currently is scheduled for implementation in 2012.

### **LEAD WATERSHED COPERMITTEE**

- City of Santee

### **OTHER PARTICIPATING COPERMITTEES**

- Input will be solicited from the Cities of El Cajon, La Mesa and San Diego as well as the County of San Diego

### **OTHER PARTICIPATING ENTITIES**

- None

### **HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED**

- Bacteria/Pathogens
- Dissolved Minerals
- Gross Pollutants
- Nutrients
- Sediment

### **CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY**

This activity is consistent with WURMP Strategic Goal 1 Dry Weather Flow Reduction.

### **EFFECTIVENESS MEASUREMENTS**

This activity can be assessed up to level 5 (changes in discharge quality). Theoretically it will lead to changes in receiving water quality, but it is unlikely that these changes would be measurable.

**ACTIVITY DESCRIPTION**

During a previous watershed source identification study, trash enclosures were identified as a source of bacterial indicators. As industrial facilities were identified for WURMP focus during FY 2011 and as most facilities will use an outside trash dumpster, a watershed activity was developed to assess trash enclosure management and where necessary foster improvements. The activity focused on the Wheatlands industrial area in the eastern area of Santee, adjacent to the San Diego River. The regional standards for trash dumpster management were referenced in conducting these assessments: dumpster should be intact; lids down; and the area around the dumpster should be free of debris. Dumpsters should not be allowed to overflow. The activity was implemented using a combination of education, inspection and enforcement. The activity comprised of the following: 1. Development of educational information on trash enclosure management specifically for businesses. This was mailed to every address in the area where the activity was to be conducted. 2. An initial survey was conducted where the conditions of the dumpsters were observed and noted. Where appropriate, the inspector spoke to a business representative to remind them of the trash enclosure management requirements. 3. Follow up surveys were conducted to assess if improvements had been made at the locations where deficiencies were noted. If necessary, the inspector spoke to a relevant business representative to facilitate improvements in trash enclosure management. 4. Locations where trash enclosure management still needed improvement were identified and property managers contacted to advise them of the trash management enclosure requirements and the findings of the activity.

**TMDL APPLICABILITY**

This activity focuses on a source of bacterial indicators and is therefore applicable to the Bacteria TMDL.

**TIME SCHEDULE FOR IMPLEMENTATION**

- 2011

**LEAD WATERSHED COPERMITTEE**

- City of Santee

**OTHER PARTICIPATING COPERMITTEES**

- None

**OTHER PARTICIPATING ENTITIES**

- None

**HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED**

- Bacteria/Pathogens
- Trash

**CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY**

This activity is consistent with WURMP Strategic Goal 3 Source Reduction at Commercial & Industrial Uses, and WURMP Strategic Goal 5 for Bacteria Source Reduction.

**EFFECTIVENESS MEASUREMENTS**

This activity can be assessed at level 3, behavioral change/BMP implementation, by examining changes in compliance rate during the implementation of the activity.

**ACTIVITY DESCRIPTION**

Trash enclosures have been identified as a source of bacterial indicators during a previous source identification investigation in the San Diego River watershed. During FY 2011 an activity was conducted which focused on trash enclosure management in an industrial area in Santee. A similar activity is being developed for FY 2012 for multifamily residences that use trash dumpster enclosures. The activity will identify multi-family residential locations in Santee, particularly those located in areas where data is available showing that bacterial exceedences have occurred, and those that are in close proximity to the San Diego River and its tributaries. The activity will combine education, inspection, and enforcement as necessary. Educational information will be provided to property managers advising them how trash dumpster enclosures should be managed. This information will be based on regional standards which require that the dumpster(s) be intact; lids closed; and the area surrounding the dumpsters free of trash and debris. Dumpsters should be emptied at a frequency that will prevent them from becoming overfull. Education will be followed by inspection to assess the level of compliance at the facilities. Where appropriate, the property manager will be informed of any deficiencies. Follow-up inspections will be conducted periodically to assess if compliance has been improved. The property manager will be re-contacted as necessary and enforcement procedures will be followed if needed.

**TMDL APPLICABILITY**

This activity focuses on eliminating a source of bacterial indicators and is therefore applicable to the bacteria TMDL.

**TIME SCHEDULE FOR IMPLEMENTATION**

This activity currently is scheduled to be implemented in 2012.

**LEAD WATERSHED COPERMITTEE**

- City of Santee

**OTHER PARTICIPATING COPERMITTEES**

- None

**OTHER PARTICIPATING ENTITIES**

- None

**HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED**

- Bacteria/Pathogens
- Trash

**CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY**

This is consistent with WURMP Strategic Goal 4 Source Reduction at Residential Land Uses and Strategic Goal 5 for Bacteria Source Reduction.

**EFFECTIVENESS MEASUREMENTS**

Effectiveness can be assessed at level 3 (behavioral change/BMP implementation), as a baseline can be developed for initial inspections, and compared with results for follow-up surveys.

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**TITLE: JOINT INVESTIGATION AND ENFORCEMENT ACTIVITIES AT CARLTON OAKS GOLF COURSE**  
**ID #: SDR-A75**

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**ACTIVITY DESCRIPTION**

The Cities of San Diego and Santee have collaborated in addressing water quality issues at Carlton Oaks Golf Course (Golf Course), located on the San Diego River at the boundary between the two Cities. The majority of the facility is located within the 100-year floodway, and Sycamore Creek transects the golf course. Carlton Oaks' mailing address is in Santee, however the facility is located partially on land owned by the City of San Diego and leased to the Golf Course, and within the City of San Diego.

The Golf Course has been identified as a potential source of nutrients and concerns have been raised regarding BMP implementation, for example in relation to pesticide application. The Golf Course has been subject to business inspections by the City of Santee; however, a number of issues, some relating to activities that may have occurred prior to City incorporation (such as the installation of restrooms on the golf course) needed resolution.

The City of San Diego and City of Santee conducted a joint comprehensive facility inspection. Based on the findings of the inspection an inspection notice was prepared. The real estate department of the City of San Diego also sent a notice reminding the Golf Course operators of their obligations to prepare a stormwater pollution prevention plan (SWPPP) and to comply with stormwater requirements.

A subsequent joint inspection was conducted of the perimeter of the golf course to investigate whether the Golf Course operators were pumping accumulated rainwater from the Golf Course into the San Diego River and whether BMPs were being used. On this occasion there was no active pumping of rainwater, although pipes possibly used for this purpose were observed. The Golf Course operators have been notified of the need to obtain a NPDES permit prior to any future pumping of rainwater from the Golf Course to the San Diego River.

The City of Santee has jointly investigated the disposal measures used at one of the restrooms on the golf course with Padre Dam Municipal Water District. Based on these investigations it is concluded that this restroom does discharge to sanitary sewer. A second restroom (Second Restroom), whose disposal method has yet to be determined, has been closed on order of the City of Santee. Investigations continue with this Second Restroom, which will not be re-opened until it has been demonstrated that the restroom has an appropriate disposal method and that its location will not compromise water quality in Sycamore Creek or the San Diego River.

The City of Santee has also collaborated with the County of San Diego Department of Planning and Land Use to investigate:

- Whether or not two vertical structures in the ground at the Golf Course were wells (inquiries were also made with the County Department of Environmental Health, responsible for monitoring well permitting). No permit information was available on wells located on the relevant portion of the golf course. Based on the observations by the County Inspector, it was concluded that the structures were not wells.
- Whether the Second Restroom is connected to a septic tank. The observations made during this site visit were inconclusive and the Golf Course operators have been directed to uncover the septic tank.

The investigations at the Golf Course are ongoing and will be reported on in future reports.

**TMDL APPLICABILITY**

San Diego Region Beaches and Creeks Bacteria TMDL

**TIME SCHEDULE FOR IMPLEMENTATION**

This activity is ongoing.

**LEAD WATERSHED COPERMITTEE**

- City of Santee

**OTHER PARTICIPATING COPERMITTEES**

- City of San Diego
- County of San Diego

**OTHER PARTICIPATING ENTITIES**

- Padre Dam Municipal Water District

**HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED**

- Bacteria
- Nutrients

**CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY**

This activity is consistent with Strategic Goal 3, source reduction at commercial and industrial land uses; and Strategic Goal 5, bacteria source reduction.

**EFFECTIVENESS MEASUREMENTS**

Effectiveness can be assessed at level 3, behavioral change during future business inspections.

**EXPECTED BENEFITS**

The Golf Course is located in the 100-year floodway and its activities are likely to result in a greater impact on water quality in the San Diego River and Sycamore Creek, than facilities located further away. It is anticipated that improvements in compliance at the Golf Course will result in pollutant load reduction, and possibly improvements in monitoring data for this portion of the San Diego River.

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**TITLE: MULTI FAMILY RESIDENTIAL TRASH AREA PILOT PROGRAM**  
**ID #: SDR-A76**

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**ACTIVITY DESCRIPTION**

The City performed a site-by-site assessment on multi-family residential trash areas in the watershed. This will allow the City to understand the baseline level of compliance. Following the assessment, enforcement will be conducted with follow up inspections to ensure locations are consistently up to code standard. Water quality sampling may be conducted for further assessment.

**TMDL APPLICABILITY**

The activity will allow the City to understand baseline levels of compliance in multi-family residential locations, and reduce loads of bacteria through enforcement.

**TIME SCHEDULE FOR IMPLEMENTATION**

Multi Year

**LEAD WATERSHED COPERMITTEE**

- City of La Mesa

**OTHER PARTICIPATING COPERMITTEES**

**OTHER PARTICIPATING ENTITIES**

**HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED**

- Bacteria

**CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY**

This type of activity promotes source control for a particular high priority water quality problem in the watershed.

**EFFECTIVENESS MEASUREMENTS**

The baseline compliance levels will allow for assessment based on locations that receive further code enforcement. Water quality sampling (wet/dry) will be examined in context of the program. Monitoring may be conducted downstream of particular multi-family locations as budget conditions will allow.

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**TITLE: QUALCOMM STADIUM DROP OFF COMMUNITY CLEANUP AND RECYCLING  
EVENT SPONSORSHIP  
ID #: SDR-A77**

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**ACTIVITY DESCRIPTION**

The City of San Diego Environmental Services Department (ESD) conducted two drop off clean up events (March and June). The events were open to all City residents and targeted items like appliances, metals, junk furniture, mattresses and tires. The Qualcomm Stadium parking lot was the site for the drop off and ESD staff conducted both events.

The events were advertised through an E-mail blast containing a flier outlining the event to all Council Representatives, who then forwarded to constituents. Also utilized were Radio ads and City TV commercial. Fliers were printed and mailed by request to citizen. All City departments were notified via e-mail.

A total of 81,760 pounds were collected of which 37,560 pounds were recycled. Some of the items collected were, refrigerators, microwaves, stoves, window air conditioners, clothes washers and dryers, dishwashers and tires.

These events were in the planning stages for approximately 2-3 months each. Scheduling and coordinating available dates at Qualcomm stadium, writing traffic control patterns if needed, reserving equipment for use and scheduling drivers, creating a site map of the staging area and traffic flow pattern for ease of use.

**TMDL APPLICABILITY**

San Diego Region Beaches and Creeks Bacteria TMDL

**TIME SCHEDULE FOR IMPLEMENTATION**

These events took place in March and June.

**LEAD WATERSHED COPERMITTEE**

- City of San Diego

**OTHER PARTICIPATING COPERMITTEES**

**OTHER PARTICIPATING ENTITIES**

- None

**HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED**

- Trash

**CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY**

Both the City's *Strategic Plan for Watershed Activity Implementation* and the Collective Watershed Strategy for the San Diego River WMA identify bacteria as a high priority water quality problem, and recommend implementing load reduction/source abatement activities to address it. Sponsorship of these Cleanup events will result in load reduction of trash and debris directly and of bacteria indirectly.

**EFFECTIVENESS MEASUREMENTS**

**Management Questions**

- 1) What is the load reduction associated with sponsorship?
- 2) What is the efficiency of the sponsored cleanup? (\$/lb collected)

**Targeted Measureable Outcome(s)**

- 1) Load Reduction due to reduction of trash (any amount) due to trash cleanup sponsorship

**Assessment Method(s)**

- 1) Quantification (e.g., pounds of trash collected)

**Data Recorded**

- 1) Pounds of trash removed (Outcome Level 4): 44,200lbs
- 2) Pounds of trash recycled (Outcome Level 4): 37,560lbs
- 3) Total pounds of trash removed and recycled (Outcome Level 4): 81,760 lbs
- 4) Total money spent on two cleanups (Outcome Level 1): \$4,000
- 5) Efficiency (Total Cost/Total Pounds Removed and Recycled): \$0.04/lb

**EXPECTED BENEFITS**

The goal of this assessment is to determine the effectiveness and efficiency of free drop off clean up and recycling events. In sponsoring these clean up events, the City is providing a convenient drop off location for the free drop off/disposal of furniture, appliances and tires. These community cleanup events are also intended to deter residents from illegally dumping unwanted items in street and alley rights-of-way, canyons, creeks and riverbeds as well as other locations throughout the City. They also replace a house by house "bulky item" pick up.

**ANALYSIS RESULTS**

ESD staff collected a total of 81,760 lbs of metals, appliances, junk furniture and mattresses. Disposed 44,200 lbs and recycled 37,560 lbs. A total of 114 tires were collected in the March event (tire drop off in the June event was not an option). The sponsorship from the City of San Diego Transportation and Storm Water Department, Storm Water Division per event was \$2,000 for a total of \$4,000. The efficiency therefore was \$0.04/lb, calculated by dividing the sponsorship cost for two events by the total pounds of trash removed and recycled.

**CONCLUSIONS**

This activity fulfills a watershed water quality activity for FY2011 as the effectiveness assessment demonstrates this activity resulted in a measurable pollutant load reduction (Outcome Level 4) of 81,760 pounds during the reporting period.



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**TITLE: Rainwater Harvesting Rebate Pilot Program**  
**ID #: SDR-A78**

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**ACTIVITY DESCRIPTION**

The City of San Diego Transportation & Storm Water Department, Storm Water Division collaborated with the Public Utilities Department in the planning of a Rainwater Harvesting Rebate Pilot Program (Rebate Pilot Program). During this reporting period staff from both departments met to discuss the application process, funding, administration, promotion, and other items related to the Rebate Pilot Program.

This Rebate Pilot Program will be open to the residents of the City of San Diego on a first come first serve basis and will provide a rebate of .50c per gallon, up to \$200 per address, for water capture devices up to 400 gallons that are purchased and installed. The Public Utilities Department will administer the Rebate Pilot Program in conjunction with its ongoing Prop 50 Outdoor Water Conservation Rebate Program.

**TMDL APPLICABILITY**

San Diego Region Beaches and Creeks Bacteria TMDL

**TIME SCHEDULE FOR IMPLEMENTATION**

Planning started in the last quarter of FY 11 with a tentative implementation start date in FY12.

**LEAD WATERSHED COPERMITTEE**

- City of San Diego

**OTHER PARTICIPATING COPERMITTEES**

- None

**OTHER PARTICIPATING ENTITIES**

- City of San Diego Public Utilities Department

**HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED**

- All

**CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY**

Both the City's *Strategic Plan for Watershed Activity Implementation* and the Collective Watershed Strategy for the San Diego River WMA identifies several water quality problems throughout the watershed. Rainwater harvesting reduces the overall amount of wet weather runoff and the demand for portable water for irrigation.

**EFFECTIVENESS MEASUREMENTS**

Data to be recorded

- 1) Most common water catchment device installed
- 2) Average size of water catchment device installed

**EXPECTED BENEFITS**

The use of water capture devices (e.g., rain barrels) reduces wet weather runoff to the MS4, and collected water also reduces the demand for portable water to irrigate landscaping.

**ANALYSIS RESULTS**

This activity was not in active implementation in FY 2011. Therefore, assessment is not possible at this time.

**CONCLUSIONS**

The project is currently being planned so there are no conclusions to report.

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**TITLE: LA MESA HARRY GRIFFEN PARK KIOSK**  
**ID #: SDR-A79**

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### **ACTIVITY DESCRIPTION**

During 2010-2011 the City of La Mesa (City) constructed an education outreach kiosk at the largest park within the City in the San Diego River Watershed, Harry Griffen Park. This kiosk was constructed with the help of the local Eagle Scouts. The kiosk presents storm water pollution prevention education outreach materials, including the San Diego River Watershed Fact Sheet along with other storm water related materials. The watershed fact sheet provides information on the watershed, pollutants of concern, and tips to prevent storm water pollution.

The expected benefit is that park-goers and nearby residents will be educated on storm water pollution prevention. Their awareness of priority pollutants within the watershed will empower them to implement good housekeeping measures and applicable best management practices to prevent pollutants from entering the storm drain system within the watershed.

Information updated quarterly.

### **TMDL APPLICABILITY**

Education outreach will be a component of the Comprehensive Load Reduction Plan which is being developed for the regional bacteria TMDL. The kiosk includes a San Diego River Watershed Fact Sheet that outlines the pollutants of concern for the watershed, as well as BMPs which should be utilized to limit pollutants from reaching the storm drain system.

### **TIME SCHEDULE FOR IMPLEMENTATION**

Multi Year

### **LEAD WATERSHED COPERMITTEE**

- City of La Mesa

### **OTHER PARTICIPATING COPERMITTEES**

### **OTHER PARTICIPATING ENTITIES**

### **HIGH PRIORITY WATER QUALITY PROBLEM(S) ADDRESSED**

- Bacteria
- TDS
- Total Phosphorus

### **CONSISTENCY WITH THE COLLECTIVE WATERSHED STRATEGY**

The Watershed Strategy identifies high priority water quality problems in the watershed. The education outreach kiosk provides pollution prevention tips to address those watershed priority pollutants. The kiosk supports the Watershed Strategy by educating residents in the vicinity of the park on good housekeeping measures and best management practices that prevent priority pollutants from being discharged into the storm drain system within the watershed.

### **EFFECTIVENESS MEASUREMENTS**

Education outreach is an integral part of the storm water program. One of the primary means to improving water quality is for the public to become aware of water quality problems within the

watershed and region. The kiosk provides educational outreach materials specific to the watershed to address pollution prevention measures.

**APPENDIX B**

**ACTIVITY A-32 SUPPORTING DOCUMENTATION: WOODSIDE AVENUE EXTENDED  
DETENTION BASIN ANNUAL WATER QUALITY SAMPLING RESULTS FY 2010-11**

**County of San Diego**  
**Woodside Avenue Extended Detention Basin**  
**Annual Water Quality Sampling Results FY 2010/2011**

**December 2011**

**INTRODUCTION**

On July 15, 2004 the County of San Diego received Proposition 13 funding from the State Water Resources Control Board (SWRCB) to perform conveyance restoration and to construct a Best Management Practice (BMP) water quality detention basin (Woodside EDB) to treat urban runoff from the Winter Gardens sub-watershed. This runoff discharges directly into the San Diego River. This report presents the annual water quality sampling results for Woodside EDB in order to assess its effectiveness in pollutant removal and load reduction.

During FY 2010-2011, water quality and flow at the inlet and outlet of Woodside EDB were monitored over three dry weather and two wet weather sampling events. Dry weather was defined as following an antecedent dry period of at least 72 hours or after the EDB has returned to its base flow conditions; wet weather monitoring was conducted during and/or directly following storm events of at least 0.10 inches of rainfall.

**DESCRIPTION OF SAMPLING PROCEDURES**

**Measurement of Flow**

Instantaneous flows were estimated for influent and effluent by multiplying flow velocity readings from a hand-held mechanical current meter by direct water depth and channel width measurements. Staff gauges were not used to estimate flow because accumulated sediment in the outlet and inlet channels prevented accurate estimation. The results are summarized in Table 1 below.

**Table 1. Instantaneous Flow Measurements**

<b>Date</b>	<b>Inlet Flow (cfs)</b>	<b>Outlet (cfs)</b>
3/7/2011	1.561	1.502
4/8/2011	0.221	0.780
9/29/2010	0.047	0.016
1/20/2011	0.163	0.230
5/26/2011	0.158	0.083

**Water Quality Sampling**

During FY 2010/2011, three dry weather events (on September 29, 2010; January 20, 2011; and May 25, 2011) and two wet weather events were sampled (on March 7 and April 8 of 2011). One set of water quality grab samples were taken at both the influent and effluent during each sampling event. The samples were collected in pre-cleaned laboratory-supplied sampling bottles. Samples were labeled, placed in a cooler on ice and transported under proper chain-of-custody documentation to an analytical laboratory for analysis. The samples were analyzed for the constituents listed in Table 2. During the sampling of the inlet and outlet, field

measurements were also collected for pH, conductivity, temperature, dissolved oxygen, and turbidity. The field measurements are described in Table 3.

**Table 2: Water Quality Constituents Measured and the Corresponding Analytical Methods, Reporting Limits (RL) and Method Detection Limits (MDL)**

Measured Parameter	Method	RL	MDL
Flow	Flow Probe FP101	0.01 cfs	0.01 cfs
pH	In-situ, Horiba U-10	0.01 units	0.01 units
Temperature	In-situ, Horiba U-10	0.1 °C	0.1 °C
Conductivity	In-situ, Horiba U-10	1 mS/cm	1 mS/cm
Dissolved Oxygen	In-situ, Horiba U-10	1 mg/L	0.01 mg/L
Turbidity	In-situ, Horiba U-10	1 NTU	1 NTU
Ammonia as N	SM4500 NH3 B,C,D	0.05 mg/L	0.02 mg/L
Copper, Dissolved and Total	EPA 200.7, EPA 200.8	10 µg/L	2 µg/L
Dissolved Organic Carbon (DOC)	SM 5310 B	1 mg/L	1 mg/L
Hardness	EPA 200.7, SM 2340 C	10 mg/L	10 mg/L
Lead, Dissolved and Total	EPA 200.8	5 µg/L	1 µg/L
Nitrate as N	SM 4500 NO3 E	0.009 mg/L	0.01 mg/L
Phosphate, Total as P	SM 4500-P B,E	0.05 mg/L	0.02 mg/L
Total Dissolved Solids (TDS)	SM 2540 C	20 mg/L	1 mg/L
Total Organic Carbon (TOC)	SM 5310 B	1 mg/L	0.4 mg/L
Total Suspended Solids (TSS)	SM 2540 D	2.5 mg/L	0.307 mg/L
Zinc, Dissolved and Total	EPA 200.8	20 µg/L	3 µg/L

## RESULTS

Data collected during FY 2010-2011 are summarized in Table 3. Table 4 shows the inlet / outlet percent differences in constituent concentrations and field-measured parameters including pH, temperature, conductivity, dissolved oxygen and turbidity. Percent differences between the inlet and outlet constituent loadings are presented in Table 5. Negative % differences indicate reductions (lower values at the outlet as compared to the inlet); positive % differences show increases (higher concentrations or loadings at the outlet than at the inlet)

For field-measured parameters (Table 4), a 24% average decrease in flow was observed between the influent and effluent ends of the Woodside EDB during dry weather; the instantaneous flow at the outlet was slightly lower than at the inlet during the March 2011 storm event; it was two and a half times higher at the outlet during the April 2011 storm event. Since the April 2011 storm measurements were taken directly following the storm event, this much higher flow measurement may be due to a temporarily increased flow from the detention basin toward the end of the storm as water accumulated in the basin and was discharging at a temporarily higher rate from the outlet at the time of the measurement. . Therefore, the April 2011 storm event discharge rate at the outlet was not considered representative of the entire storm event and was not used to calculate loads (Table 5).

Generally, dissolved oxygen, temperature and pH were lower at the outlet than the inlet of the EDB while turbidity and conductivity were higher but this depended on the sampling event considered (Table 4). For instance, turbidity during the March 2011 storm event was 83% lower at the outlet than at the inlet but, for the April 2011 storm, turbidity was 127% higher at the outlet. During dry weather, a reduction in turbidity was observed for one of the three sampling events while, for the remaining two, turbidity was higher at the outlet than the inlet.

With respect to the mean percent differences in constituent concentrations between the EDB influent and effluent (Table 4) during dry weather, only nitrate as N, ammonia, total phosphate as P and total copper showed lower concentrations at the outlet than at the inlet; mean concentrations of all remaining constituents were higher at the outlet of the EDB. However, individual results varied depending on the dry weather event monitored. During wet weather, decreased total suspended solids, total and dissolved organic carbon, ammonia, total phosphate as P, and total and dissolved metal concentrations were observed at the outlet while TDS, hardness, and nitrate as N concentrations were higher at the outlet than at the inlet.

When constituent loadings were considered (Table 5), all but three constituents showed mean load reductions between inlet and outlet of the EDB during dry weather. The three constituents that had the higher mean dry weather loads at the outlet included total suspended solids, total lead, and dissolved zinc. During wet weather, load reductions were observed for all metals, total phosphate as P, ammonia and TSS when measured for the March 2011 event. Loads were not calculated for the April 2011 event due to the un-representative instantaneous discharge rate measured at the outlet of the EDB.



**Table 3: Analytical and Field Results**

Constituent (units)	Wet Weather				Dry Weather					
	Mar 7, 2011		Apr 8, 2011		Sep 29, 2010		Jan 20, 2011		May 26, 2011	
	Inlet	Outlet	Inlet	Outlet	Inlet	Outlet	Inlet	Outlet	Inlet	Outlet
Discharge (cfs)	1.56	1.50	0.22	0.78	0.05	0.02	0.16	0.23	0.16	0.08
pH	7.65	7.87	8.04	7.52	8.04	7.48	7.5	7.33	7.51	7.79
Conductivity (mS/cm)	7.65	7.47	7.94	7.90	7.64	7.50	8.31	7.97	8.43	7.94
Turbidity (NTU)	0.49	0.84	1.76	1.76	2.12	2.16	2.37	2.21	2.29	2.33
Dissolved Oxygen (mg/L)	129	22	22	50	4	5	6	4	2	7
Temperature (°C)	8.73	5.43	8.89	7.13	5.61	7.63	18.35	5.08	14.21	6.42
Total Dissolved Solids (mg/L)	16.2	14.9	19.9	15.2	21.2	21.5	14.5	12.4	24.2	16.6
Total Suspended Solids (mg/L)	282	518	1120	1200	1390	1340	1610	1660	1430	1460
Hardness (mg/L)	67.3	11.8	20.8	21.6	10.7	7.1	17.6	5.6	2.2	12.2
Total Organic Carbon (mg/L)	136	265	507	560	635	641	748	781	728	702
Dissolved Organic Carbon (mg/L)	13	14	21	15	3	4.2	4.2	4.1	6.2	6.9
Nitrate as N (mg/L)	12	13	20	15	2.8	3.6	3.8	4	5.9	6.4
Ammonia (mg/L)	1.44	3.13	7.38	8.2	11.5	8.08	12.4	11.5	13.3	10.7
Total Phosphorus (mg/L)	0.34	0.18	0.41	0.36	0.03	0.02	ND	ND	0.21	0.17
Dissolved Copper (µg/L)	0.26	0.18	0.25	0.23	0.19	0.18	0.12	0.08	0.05	0.06
Total Copper (µg/L)	7	5	6	4	ND	1	2	1	2	2
Dissolved Lead (µg/L)	16	8	9	6	2	1	4	3	4	4
Total Lead (µg/L)	ND	ND	1	1	ND	ND	ND	ND	ND	ND
Dissolved Zinc (µg/L)	5	2	2	2	1	1	2	3	0.5	1
Total Zinc (µg/L)	30	20	20	12	4	9	5	7	6	8

ND – not detected

NM – not measured

**Table 4: Percent Differences between Woodside EDB Inlet and Outlet Field Sampling Results (Discharge, pH, Conductivity, Turbidity and Temperature) and Constituent Concentrations.**

Constituent	Wet Weather		Dry Weather			Mean % Difference		
	03/07/11	04/08/11	09/29/10	01/20/11	05/26/11	Wet	Dry	Overall
Flow	-4%	254%	-67%	41%	-47%	125%	-24%	35%
pH	-2%	-1%	-2%	-4%	-6%	-1%	-4%	-3%
Conductivity	72%	0%	2%	-7%	2%	36%	-1%	14%
Turbidity	-83%	127%	25%	-33%	250%	22%	81%	57%
Dissolved Oxygen	-38%	-20%	36%	-72%	-55%	-29%	-30%	-30%
Temperature	-8%	-24%	1%	-14%	-31%	-16%	-15%	-15%
Total Dissolved Solids	84%	7%	-4%	3%	2%	45%	1%	18%
Total Suspended Solids	-82%	4%	-34%	-68%	455%	-39%	118%	55%
Hardness	95%	10%	1%	4%	-4%	53%	1%	21%
Total Organic Carbon	8%	-29%	40%	-2%	11%	-10%	16%	6%
Dissolved Organic Carbon	8%	-25%	29%	5%	8%	-8%	14%	5%
Nitrate as N	117%	11%	-30%	-7%	-20%	64%	-19%	14%
Ammonia as N	-47%	-12%	-33%	0%	-19%	-30%	-17%	-22%
Phosphate, Total as P	-31%	-8%	-5%	-33%	20%	-19%	-6%	-11%
Copper, Diss	-29%	-33%	100%	-50%	0%	-31%	17%	-2%
Copper, Total	-50%	-33%	-50%	-25%	0%	-42%	-25%	-32%
Lead, Diss	0%	0%	0%	0%	0%	0%	0%	0%
Lead, Total	-60%	0%	0%	50%	100%	-30%	50%	18%
Zinc, Diss	-33%	-40%	125%	40%	33%	-37%	66%	25%
Zinc, Total	-41%	-27%	56%	10%	50%	-34%	39%	10%

**Table 5: Percent Differences between Woodside EDB Influent and Effluent Constituent Loadings.**

Constituent	Wet Weather	Dry Weather			Mean % Difference	
	03/07/11	09/29/10	01/20/11	05/26/11	Dry	Overall
<b>Total Dissolved Solids</b>	77%	-68%	46%	-46%	-23%	2%
<b>Total Suspended Solids</b>	-83%	-78%	-55%	193%	20%	-6%
<b>Hardness</b>	87%	-66%	47%	-49%	-23%	5%
<b>Total Organic Carbon</b>	4%	-53%	38%	-41%	-19%	-13%
<b>Dissolved Organic Carbon</b>	4%	-57%	49%	-43%	-17%	-12%
<b>Nitrate as N</b>	109%	-77%	31%	-58%	-34%	1%
<b>Ammonia as N</b>	-49%	-78%	41%	-57%	-31%	-36%
<b>Phosphate, Total as P</b>	-33%	-68%	-6%	-37%	-37%	-36%
<b>Copper, Diss</b>	-31%	-33%	-29%	-47%	-37%	-35%
<b>Copper, Total</b>	-52%	-83%	6%	-47%	-42%	-44%
<b>Lead, Diss</b>	-4%	-67%	41%	-47%	-24%	-19%
<b>Lead, Total</b>	-62%	-67%	112%	6%	17%	-3%
<b>Zinc, Diss</b>	-36%	-25%	98%	-30%	14%	2%
<b>Zinc, Total</b>	-44%	-48%	55%	-21%	-4%	-14%

## CONCLUSIONS

Generally, the results indicate that, constituent concentrations at the outlet of the EDB were often higher than at the inlet. There were, however, overall load reductions for the majority of constituents measured during both dry and wet weather (for wet weather, only the March 2011 storm event data were included in the calculations). The load reductions were most likely due to the EDB allowing settling or absorption of pollutants before reaching the outlet.

For dry weather, the exceptions (mean loads higher at the outlet than at the inlet of the EDB) included total lead, dissolved zinc and TSS; for wet weather TOC, DOC and nitrate as N had loads that were higher at the outlet. The increased mean dry weather loads of zinc, lead and TSS were due to measurements taken during just one of the three dry weather events (the January 20, 2011 event) during which instantaneous loadings of most constituents were higher at the outlet than at the inlet. This was due to a higher instantaneous flow rate measured at the outlet during that event.

In terms of constituent concentrations alone, it may be concluded that the EDB functioned well in reducing nitrate-N, ammonia and total copper concentrations in non storm flows and TDS, TSS, ammonia, total phosphate as P, and metals concentrations during wet weather. The concentrations of other constituents measured, however, were not consistently reduced and were often higher at the outlet of the EDB. The often higher concentrations of metals at the outlet during dry weather conditions may have been due to the deposition of metals and dust near the outlet as it is located adjacent to a high-traffic road.