SAN DIEGO RIVER WATERSHED
URBAN RUNOFF MANAGEMENT PROGRAM

FISCAL YEAR 2003
ANNUAL REPORT

Prepared by:

City of San Diego, Lead Agency
City of El Cajon
City of La Mesa
City of Poway
City of Santee
County of San Diego

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CERTIFIED STATEMENTS

Signed certification statements for the following Copermittees are located in Appendix A of this report.

San Diego River Watershed Copermittees

City of San Diego, Lead Agency
City of El Cajon
City of La Mesa
City of Poway
City of Santee
County of San Diego

EXECUTIVE SUMMARY

1.0 Introduction

This Annual Report represents the Copermittees[1] efforts during the Fiscal Year (FY) 2003 reporting period (July 1, 2002 to June 30, 2003) to develop and implement the San Diego River Watershed Urban Runoff Management Program (San Diego River Watershed URMP). This reporting period covers periods of initial program development (July 2002 through January 2003) and the start of program implementation (February 2003 through June 2003). The five-month implementation period represents a very small increment in the overall development and augmentation of the programs and activities proposed in the Watershed URMP. However, the municipalities are proud to report that progress has been made and the Copermittees will continue to implement, improve and enhance these programs and activities over the next several years.

2.0 Report Organization & Summary

The San Diego River Watershed URMP Annual Report consists of a total of five sections, and is organized as follows. A summary of the highlights from each section is also provided.

Section I – Introduction

Section I of the Annual Report provides a summary of the program background, program approach to improving water quality, the regulatory requirements that the Copermittees must meet and a general overview of the organization and content of the report.

Section II – Activity Implementation

The "Plan of Action" Section of the San Diego River Watershed URMP identifies several activities and programs aimed at improving the quality of surface storm water runoff within the watershed. These activities focused specifically in the areas of water quality, land use planning, education, and public participation. Section II of this Annual Report provides a status report of the work completed on these activities and programs.

Section III – Water Quality Assessment

In our effort to assess the water quality of receiving waters in the watershed, the Copermittees' monitoring programs make use of a variety of methodologies to document the physical, chemical and biological characteristics of streams, creeks, rivers, enclosed bays, lagoons, estuaries and beaches.

As summarized in Section III, the 2003 assessment of the San Diego River watershed yielded the following constituents of concern with a high frequency of occurrence: fecal coliform, turbidity, and copper. Potential constituents of concern with a low or medium frequency of occurrence were: chlorpyrifos, diazinon, total coliform, and *Enterococcus*.

[1] Copermittees refers to the municipalities in the San Diego region subject to the National Pollutant Discharge Elimination System [NPDES] Municipal Storm Water Permit for San Diego Copermittees [Order No. 2001-01, NPDES No. CAS 0108758, "Municipal Permit"]

The constituents of concern for the San Diego River watershed identified in 2003 were compared to last year's water quality assessment (2002). The following changes were noted for the San Diego River Watershed in 2003 as compared to the previous year's assessment.

- ✓ Fecal coliform, copper, chlorpyrifos and turbidity are more apparent as constituents of concern.
- ✓ Total coliform, *Enterococcus,* total dissolved solids, pH, phosphate, dissolved oxygen and diazinon are less apparent as constituents of concern.

Updated List of Constituents of Concern

Based on a combined analysis of the 2002 and 2003 assessments, fecal coliform, diazinon, total dissolved solids, pH, phosphates, and dissolved oxygen remain constituents of concern, and copper and turbidity have been identified as new constituents of concern (See Table III-4).

Updated List of High Priority Water Quality Issues

The data set considered to date is too limited to draw strong conclusions about high priority water quality issues and associated actions. In addition, developing an effective list of activities that properly identifies and addresses significant water quality issues requires additional validation. Therefore, the high priority water quality issue identified in the San Diego River Watershed URMP remains the same in FY 2004: Limiting recreation opportunities in coastal waters due to potential for pathogens, and potential impact on municipal and domestic water supply. These high priority issues and the constituents of concern identified in the 2002 and 2003 watershed water quality assessments will continue to be tracked (See Table III-4).

Section IV – Effectiveness Assessment

Section IV provides an initial assessment of the implementation and effectiveness of the San Diego River Watershed URMP for FY 2003. This assessment is limited by the short period during which the new standards of the Municipal Permit (National Pollutant Discharge Elimination System [NPDES] Municipal Storm Water Permit for San Diego Copermittees [Order No. 2001-01, NPDES No. CAS 0108758]) were in effect. Since the Municipal Permit provided a 365-day period for the development and implementation of most programs, many were not fully in place for the majority of the reporting period. Furthermore, many of the programs that were in place before the Municipal Permit requirement were not tracked because there was no prior need.

Section V – Conclusions and Recommendations

Section V provides a conclusion of the Annual Report and makes recommendations for improving future reporting efforts, as summarized below.

Between July 2002 and June 2003, the Copermittees in the San Diego River watershed made progress in developing and implementing programs aimed at improving surface storm water quality in the watershed. Most significantly, during the first five months of implementation (February to June, 2003), the San Diego River Watershed Copermittees successfully implemented the FY 2003 activities identified in the San Diego River Watershed URMP. A few of these highlights are found below:

- *The San Diego River Watershed URMP*. In January 2003, the Copermittees successfully completed the development and initiated the implementation of a watershed-based program that addresses surface storm water quality for the San Diego River watershed. The work product is a compilation of assessments, activities and strategies the Copermittees and stakeholders plan to undertake over the remaining life of the Municipal Permit.

- *San Diego River Watershed Management Plan.* The stakeholder effort to develop a Watershed Management Plan, funded by Proposition 13, has made significant progress during this reporting period. The Watershed Workgroup and consultants completed a Stakeholder Statement of Agreement, Stakeholder Needs and Expectations Report, Data and Information List, List of Existing Data and Information Collected and Watershed Characteristics Inventory Report. The Watershed Workgroup brings together a wide variety of stakeholders to develop the Plan and increases opportunities for cross-jurisdictional collaboration and public participation.

- *Water Quality Grants.* Following a competitive concept proposal review, the State Water Resources Control Board (SWRCB) invited three watershed Copermittees, in cooperation with stakeholders, to submit full proposals for the 2003 Consolidated Watershed Protection and Nonpoint Source Pollution Control Grants Program.

  - *Forester Creek Improvement Project.* The City of Santee proposes to create a widened, naturalized, vegetated channel to expand riparian wetlands habitat, and increase flood control capacity. The enhanced and increased wetland vegetation, widened creek channel, slower velocities, and enhanced area for infiltration and percolation will all serve to reduce the pollutant load in the creek through Santee and in the San Diego River as it flows downstream of its junction with Forester Creek. Interpretive signage will be placed at the bike path's rest stop, and will explain the project's need and purpose and show how the project improves water quality. Project information will also be posted on the City's Website, and will be able to be accessed for a wide range of educational opportunities, such as physics, biology and environmental, engineering and science projects.

  - *Porous Pavement and Model Municipal Operations Center Demonstration Project*. The County of San Diego proposes a project that will assess and demonstrate the use of enhanced source control and treatment control BMPs at specified County facilities, and to assess the use of four different types of porous paving materials. The project will illustrate to municipalities and the development and design communities the potential for using porous paving to reduce urban runoff and limit modification of stream hydrology in future new development and significant redevelopment projects. One specific demonstration site is the County Operations Center located in the San Diego River Watershed.

  - *Woodside Avenue Low Flow Water Quality Basin and Arundo Removal*. The County of San Diego and its project partners (The San Diego River Park Foundation, The Lakeside Conservancy, San Diego State University (SDSU), San Diego Supercomputer Center (SDSC) and High Performance Wireless Research and Education Network (HPWREN) propose to perform conveyance restoration and construct a wetland to treat urban runoff before discharging into the San Diego River in the unincorporated community of Lakeside. The

constructed wetland BMP would act as a demonstration for the effectiveness of wetlands at removing pollutants from water systems. A monitoring component of the project would provide evidence of the pollutant removal capabilities. An outreach component of the project would address the disseminating information to interested parties, as well as education of students, teachers, community groups, and business leaders about the benefits of wetlands to the environment.

- *San Diego River Restoration Project.* The San Diego River Project is a partnership between the U.S. Bureau of Reclamation, the City of San Diego and the San Diego River Park Foundation. The project began when Congresswoman Susan Davis included funding for the project in a federal appropriations bill for the U.S. Bureau of Reclamation. A feasibility study will be conducted for restoring natural functions to the river and the drainages feeding into the river. The goal is to use vegetation to help cleanup the river for its beneficial uses including recreation and wildlife. The initial focus of the project is the Mission Valley area of the San Diego River Watershed.

- *Stormwater Quality and Watershed Protection - Looking at Alternative Development Policies*. The County of San Diego, in cooperation with the City of San Diego, is developing a land use professional's reference manual, which focuses on site design solutions (as opposed to structural treatment devices) as viable, and in some cases superior, best management practices. The Manual is structured to assist land use professionals (e.g. municipal, environmental or community planners, engineers, architects, site-designers) in identifying the following:

  - Major types of storm water pollution;
  - Possible sources of pollution;
  - Adverse impacts such pollutants have on the environment;
  - Description of the San Diego River watershed as well as other watersheds in San Diego County;
  - Pollution problems found within the watersheds; and,
  - Listings of the site design and programmatic tools land use professionals have at their disposal to address water quality issues at the planning level.

- Watershed-Based Public Awareness Surveys. In fiscal year 2002 and 2003, the City of San Diego has conducted a watershed-based public awareness survey in the City's jurisdictional boundaries within the San Diego River watershed. In addition, the Copermittees have started the process of developing a public awareness survey for the San Diego River watershed in order to establish a baseline of watershed understanding. Watershed surveys not only determine whether the educational message is being heard and understood, but surveys help Copermittees focus educational and outreach concepts in order to meet the needs of different sub-regions and associated land uses within the watershed. The survey results of the copermittees' survey will be detailed in the FY 2004 Annual Report.

Above all, the San Diego River Watershed URMP and Annual Reports should be considered part of overall program development. The Copermittees have responded to meet the challenges of implementing new and aggressive Municipal Permit requirements in a very short period of time. It is also recognized that improvement and refinement is an important part of all program areas and the Watershed URMPs will need

to be improved over the long term as the Copermittees continue to develop a better understanding of the complex issues affecting the San Diego River watershed.

In summary, a number of important challenges have arisen during the implementation of this revised Municipal Permit. Budgetary challenges, unnecessary duplication of jurisdictional and watershed programs and efforts, and water quality monitoring data limitations are just some of the challenges we face. While the Copermittees have generally responded well to meet them, some requirements are not easily addressed. Continued collaboration and thoughtful coordination and integration between jurisdictional and watershed programs are keys to the development of quality programs that are cost-effective and responsive to the needs of our customers. Only time and continued implementation will tell whether or not the programs established pursuant to this Municipal Permit will meet the standards of water quality improvement and cost-effectiveness that together define practicability. Increased cooperation between Copermittees and the RWQCB will be necessary as we continue to move our programs forward. In some instances, the issues confronting us may be within the ability of Copermittees to resolve. In other cases, more innovative approaches, including Municipal Permit amendments, may ultimately be required. Keeping these lines of communication open is crucial to our long-term success.

SECTION I INTRODUCTION

1.0 Background

Copermittees in the San Diego region also implement jurisdictional urban runoff management programs (Jurisdictional URMPs) that include education, enforcement, land use planning, construction, facility inspection, and water quality monitoring components, to name a few. In addition, the National Pollutant Discharge Elimination System (NPDES) Municipal Storm Water Permit for San Diego Copermittees (Order No. 2001-01, NPDES No. CAS 0108758, hereafter referred to as "Municipal Permit") requires that the Copermittees within the San Diego River watershed collaborate in the development of a watershed-based program that addresses surface storm water quality. The rationale for this need is simple; urban runoff does not follow jurisdictional boundaries, and often travels through many jurisdictions while flowing to receiving waters. Therefore, the actions of various municipalities within a watershed regarding urban runoff can have a cumulative impact upon shared receiving waters. The Municipal Permit directs the municipalities who have land use authority within the San Diego River watershed to collaborate in developing and implementing a Watershed URMP for the watershed. The purpose of the Watershed URMP is to identify and address the highest priority water quality issues/pollutants in each watershed. In addition, the Municipal Permit requires that the Copermittees develop activities that addressed education, public participation and land use planning.

2.0 Program Approach

In broad terms, the overall purpose of the San Diego River Watershed URMP is to address the surface storm water quality issues and any ongoing degradation within the San Diego River watershed. Fundamental to both establishing specific Watershed URMP 3goals and measuring achievement, is the understanding that long-term solutions to water quality issues will be more effective if the issues are correctly and comprehensively identified and characterized. Based upon the proper identification and targeted characterization, true "watershed-approach" solutions can then be applied.

In order for a plan to be successful, clear goals and objectives must first be established, agreed to and implemented by the San Diego River watershed Copermittees. Otherwise, program activities and tasks are adopted without an understandable purpose or clear direction. The following provides the program goal of the Watershed URMP and specific objectives that the San Diego River watershed Copermittees will strive to meet as part of this effort.

TO POSITIVELY AFFECT THE WATER QUALITY OF THE SAN DIEGO RIVER WATERSHED WHILE BALANCING ECONOMIC, SOCIAL AND ENVIRONMENTAL CONSTRAINTS.

Objective #1: *Develop/expand methods to assess and improve water quality within the watershed.*

Objective #2: *Integrate watershed principles into land use planning.*

Objective #3: *Enhance public understanding of sources of water pollution within the watershed.*

Objective #4: *Encourage and enhance stakeholder involvement within the watershed.*

As outlined in the Watershed URMP, specific activities and programs have been identified in an effort to meet these objectives. Participating jurisdictions recognize that they face several significant challenges in developing and implementing this program. Further, the cities and county consider this watershed-based effort to be in its infancy and expect this program will be refined and augmented over the long term as we develop a better understanding of the complex issues affecting our watersheds and learn to identify and pursue joint opportunities to positively affect the water quality in the region.

3.0 Municipal Permit Requirements

The Municipal Permit requires that each Watershed URMP Annual Report shall, at a minimum, contain the following:

- Comprehensive description of all activities conducted by the watershed Copermittees to meet all requirements of each component of Watershed URMP section 'J' of the Municipal Permit;
- Public participation mechanisms utilized during the Watershed URMP implementation process;
- Mechanism for watershed-based land use planning;
- Assessment of effectiveness of the Watershed URMP;
- Proposed revisions to the Watershed URMP;
- A summary of watershed effort related data not included in the annual monitoring report (e.g. special investigations); and,
- Identification of water quality improvements or degradation.

The first Watershed URMP Annual Report is due to the San Diego Regional Water Quality Control Board (SDRWQCB) no later than January 31, 2004, and every January 31st thereafter. The reporting period for the Annual Reports must cover the previous fiscal year. As such, the FY 2003 Watershed URMP Annual Report will cover the reporting period from July 1, 2002 to June 30, 2003.

4.0 Organization and Content of the Report

The Annual Report is largely organized according to the "Standardized Format for Watershed URMP Annual Report," agreed upon by the Copermittees and submitted as part of the Unified Watershed Urban Runoff Management Program in January 2003. In addition, the Copermittees have endeavored to stay close to the organization requirements of the Municipal Permit. However, in some instances, the Copermittees felt that it made sense to consolidate sub-sections that are logically addressed together. Also, some activities covered multiple Municipal Permit requirements (e.g. the *Land Use Professional's*

Reference Manual addresses both land use planning requirements and public participation requirements). To avoid unnecessary duplications and to simplify the annual report, any activity covering multiple requirements will only be discussed in the most relevant section of the annual report (e.g. the *Land Use Professional's Reference Manual* deals more with planning issues than public participation and will be discussed in land use planning section of the report). The structure of the Annual Report is as follows:

- **SECTION I.** Section I of the Annual Report provides a summary of the program background, program approach to improving water quality, the regulatory requirements that the Copermittees must meet and a general overview of the organization and content of the report.

- **SECTION II.** Section III of the San Diego River Watershed URMP (Plan of Action) identifies several activities and programs aimed at improving the quality of surface storm water runoff within the watershed. These activities focused specifically in the areas of water quality, land use planning, education, and public participation. Section II of the Annual Report provides a status report of the work completed on these activities and programs.

- **SECTION III.** In an effort to assess the effects of urban runoff on receiving waters, the Copermittees' monitoring programs make use of a variety of methodologies to document the physical, chemical and biological characteristics of streams, creeks, rivers, enclosed bays, lagoons, estuaries and beaches. Section 3 of the Annual Report is designed to summarize the quality of the water in the San Diego River watershed based upon data that was collected and analyzed between February 2003 and June 2003; information collected between July 2002 and January 2003 was already discussed in the Water Quality Assessment section of the Watershed URMP.

- **SECTION IV.** Section IV provides an initial assessment of the implementation and effectiveness of the San Diego River Watershed URMP for the period of July 2002 and June 2003. This assessment is limited by the short period during which the new standards of the Municipal Permit were in effect. Since the Municipal Permit provided a 365-day period for the development and implementation of most programs, many were not fully in place for the majority of the reporting period. Furthermore, many of the programs that were in place before the Municipal Permit requirement were not tracked because there was no prior need.

- **SECTION V.** Section V provides a summary conclusion of the Annual Report and makes recommendations for improving future reporting efforts.

The Municipal Permit establishes new and aggressive standards for program development and implementation. This has often required the Copermittees to complete these programs on short time frames; in many respects, they are in their infancy. The period from July 2002 and June 2003 represents a very small increment in the overall development and augmentation of these programs; the Copermittees will continue to improve and enhance them over the next several years. Although certain elements of the Watershed URMP were in effect prior to the January 31, 2003 implementation schedule, the first seven months of FY 2003 were spent developing the San Diego River Watershed URMP. Therefore, it is important to note that this Annual Report includes information regarding five months of program implementation (information regarding program development during the fiscal year is addressed, as well).

SECTION II IMPLEMENTATION

The Plan of Action (Section III) of the San Diego River Watershed URMP includes several activities the Copermittees have or are intending to implement over the remaining life of the Municipal Permit in an effort to meet the four primary objectives of the program, which are:

- *Develop/expand methods to assess and improve water quality within the watershed;*
- *Integrate watershed principles into land use planning*
- *Enhance public understanding of sources of water pollution; and,*
- *Encourage and develop stakeholder participation*

Sections 1.0 to 5.0 below summarize the efforts the Copermittees undertook to develop the San Diego River Watershed URMP and implement the Plan's activities during the FY 2003 reporting period. It is important to note that the San Diego River Watershed Copermittees implemented all of the activities scheduled for FY 2003.

1.0 Program Development

As required under the Municipal Permit, Copermittees with land use authority within the San Diego River watershed (the Cities of El Cajon, La Mesa, San Diego, Poway, and the County of San Diego) were tasked with developing and implementing a watershed-based urban runoff management plan. To accomplish this task, the Copermittees formed several working groups to address regional and watershed-specific issues at appropriate scales.

– Regional Watershed URMP Workgroup. To address shared regional issues, the Copermittees assembled the Regional Watershed URMP Workgroup, co-chaired by the Port of San Diego and the City of San Diego. This group met eight times (between January and November 2002), and helped create the framework for how the San Diego River Watershed URMP document would eventually be organized, in addition to helping develop a methodology for identifying water quality issues in the watershed, watershed education strategies, and mechanisms for watershed-based land use planning, among other items.

– San Diego River Watershed URMP Copermittees. To address watershed-specific issues in developing the San Diego River Watershed URMP, the participating Copermittees held three workgroup meetings, in addition to meetings between the City of San Diego and individual jurisdictions, members of the public, and consultants. The Copermittees also collaborated through email and postings of draft documents on the Project Clean Water website (www.projectcleanwater.org), to collaboratively develop and write the San Diego River Watershed URMP document. The City of San Diego led the development of the San Diego River Watershed URMP between March 2002 and January 2003, along with numerous hours contributed by the other participating jurisdictions.

2.0 Water Quality Activities

The Plan of Action Section in the San Diego River Watershed URMP identifies proposed activities to address prioritized water quality issues. The sections below provide a status report of work completed to date on those activities.

2.1 San Diego River/Ocean Beach Water Quality Improvement Project – City of San Diego

Based on the numerous exceedances of the AB411 criteria and the City's investigation, the City obtained a Clean Beaches Initiatives grant from the State Water Resources Control Board for the investigation of bacterial sources potentially impacting Dog Beach. This project, San Diego River – Ocean Beach Water Quality Improvement Project, Phase 1, was designed to investigate potential sources of bacterial contamination to the San Diego River including storm drain and near beach diversion structures, as well as any natural local sources. Its aim was to also recommend BMPs to abate any potential contamination from identified sources. This study was prepared for the California State Water Resources Control Board by the City and MEC Analytical Systems, Inc. (MEC).

The goal of Phase 1 of the study was to identify the source of bacterial contamination to Ocean Beach, specifically at Dog Beach, establish a baseline of water quality for the San Diego River (River) and recommend BMPs to abate bacterial contamination. There were four major tasks to accomplish this goal:

- ✓ Task 1 – Determination of segments of San Diego River for Source Identification;
- ✓ Task 2 – Human Sewage Investigations;
- ✓ Task 3 – Near Beach Storm Drain and Diversion System Investigations; and
- ✓ Task 4 – Visual Observations of other potential sources of bacterial contamination.

This study final report was completed on September 30, 2003 and will be reviewed during the next reporting period. The following activities were completed during this reporting period:

Task 1 was completed by performing an extensive program of sampling throughout the River. Sites were located from the mouth of the River to approximately 11 miles upstream in the Mission Trails Park. Results showed that the river (Mission Trails to the San Diego River mouth) could not be considered as a whole. Bacterial concentrations varied from site to site, and this variation was consistent from day to day for the duration of the study. There appeared to be areas with a chronic source input; however, the resulting elevated bacterial levels would be undetectable at stations downstream. Samples collected at Sunset Cliffs Blvd. Bridge showed the disconnect between stations upstream and stations around Dog Beach. This station had significantly lower levels of all three bacterial indicators than the next closest upstream station, suggesting that bacterial contamination was not being transported downstream. The lower levels between these stations may be due to increased dilution, deactivation by sunlight or the natural transition to more saline water. Levels of *Enterococcus* significantly increased at stations on Dog Beach suggesting the presence of a local source.

In Task 2, potential inputs of human sewage to the river system were investigated. A review of City provided maps of the sewage infrastructure to determine likely locales of human sewage inputs along with interviews of City staff were conducted. These investigations resulted in no probable inputs from human

sewage. Samples for Polymerase Chain Reaction analyses to determine the presence of human fecal contamination around Dog Beach were conducted to confirm the initial findings. These samples showed that only 1 of 18 samples may have had a weak human fecal contamination signature. The presence of non-human fecal contamination in all other samples collected suggested that there were no chronic inputs of human fecal contamination to Dog Beach. In addition, a closed-circuit TV inspection of a comfort station on Ocean Beach was conducted. The inspection found the sewage system serving this comfort station to be in good condition and not a source of bacterial contamination.

Task 3 was completed with inspections of the seven pump stations serving the Lower San Diego River and multiple storm drain outfalls. All but one of the seven pump stations were found to be undiverted. Pump Station H was the only station diverting flow to the sewage system during dry weather conditions. Pump Stations D, E, I , J and K all discharge to the river system, however, only Pump Station D discharges directly to the River; other pump stations discharge to wetland type habitat on the flood banks of the River. Only Pump Station D discharges significant volumes of urban runoff and this discharge impacts water quality in the River locally downstream. During the course of this study, discharge from Pump Station D did not impact Dog Beach.

Of the numerous outfalls inspected, two outfalls were discovered to be inputting elevated bacterial levels that could degrade the water quality at Dog Beach. These were Outfalls 13 and 14 located at the southeastern end of Dog Beach. Samples collected at their terminus were significantly higher for all three bacterial indicators than samples collected 0.5 miles upstream. The remaining outfalls inspected were either dry or samples either had low levels of the three bacterial indicators or the discharge was not observed to impact Dog Beach.

The results of Tasks 1 – 3 suggested that the River was not the primary source of bacterial contamination to Dog Beach. Elevated bacterial levels on the beach appeared to be from local sources. Therefore, several site and time specific studies located around Dog Beach comprised the efforts to satisfy Task 4. Surveys were conducted to establish sources and transport mechanisms of bacteria around Dog Beach. These included sediment sampling, 24-hour tidal influence, focused high tide influence, kelp sampling and sand berm sampling surveys.

Sediment samples collected on the mudflats east of Dog Beach and along the eastern portion of Dog Beach had low levels of all three bacterial indicators. This single survey suggested that although some samples did have detectable levels of the bacterial indicators, the washing of bird feces did not appear to be the primary cause of extreme bacterial contamination observed along Dog Beach. This confirms earlier studies performed by the City.

Based on findings from similar studies in other regions of Southern California, a survey was developed to determine if elevated bacterial levels were related to tide height or stage (flooding vs. ebbing). Four surveys were conducted, two on neap and two on spring tides, with samples collected every two hours along Dog Beach. An upstream station was included in the survey to rule out any potential influence of the River at the same time. Although statistical analyses could not confidently (alpha = 0.05) confirm a direct relationship between tide height or stage with bacterial levels, graphical representations suggested that high tides caused an increase in bacterial levels and the presence of sunlight (UV) decreased levels.

The appearance that bacterial levels increased following high tides resulted in a study that focused sampling around the high tide. High tides tend to wash the wrack line collecting on the beach. Observations on the beach showed that dog feces tend to be higher within the wrack line as well. Therefore, it seemed that the source of elevated bacteria levels may be the washing of dog feces in the wrack line. Four surveys were conducted that collected samples approximately 3-hours prior to high tide, during high tide, and approximately 3-hours following high tide.

Samples were also collected in three specific regions of the beach, west, north and east. The west and north regions were further segmented into areas with observed higher and lower concentrations of dog feces in the wrack line. The results showed a significant difference between pre- and during high tide samples. Samples collected at high tide were significantly higher than those collected 3 hours prior, with concentrations of all three bacterial indicators typically an order of magnitude or more greater. The western region had the lowest concentrations of bacterial indicators and samples collected in areas with high concentrations of dog feces versus areas with low concentrations of dog feces were not significantly different. This suggested washing of the wrack line itself was a contributing factor to elevated bacterial levels.

Sand Berms are constructed along Ocean Beach, adjacent and directly south of Dog Beach, during winter months to protect back shore property. Sand berms are not constructed on Dog Beach. These sand berms are constructed with kelp as a binding agent. Ocean water samples collected prior to the sand berm spreading event in spring 2003 were significantly lower in bacterial contamination as compared to samples collected directly after the spreading event.

2.2 Regional Integrated Pest Control Management Campaign

The Copermittees and their project partner (University of California Cooperative Extension - UCCE) intend to protect and restore affected beneficial uses of receiving waters throughout the San Diego region through a comprehensive approach to Integrated Pest Management (IPM) outreach and education. During this reporting period, the City of San Diego, as lead agency, applied for and was awarded a pesticide mitigation grant from the State Water Resources Control Board (Pesticide Research and Identification of Source and Mitigation Grant Program).

Water quality monitoring data (collected during both dry and wet weather seasons throughout the county) indicate that pesticides (especially diazinon) routinely exceed water quality standards in most of the region's watersheds. The grant funding was sought to develop and implement an IPM educational program, which is sustainable beyond the life of the proposed project. The project will also specifically target the TMDL for diazinon in the Chollas Creek watershed.

IPM promotes the use of integrated, ecologically sound pest management programs. The following is a description of the project strategy:

- Develop educational materials, pertinent to the region, under the leadership of the UCCE
- Integrate the educational materials into the UCCE Master Gardener's Program
- Develop and implement a model retail Point of Purchase Campaign in two targeted watersheds
- Perform regional IPM outreach activities

- Implement a focus community-based educational program in the Chollas Creek watershed.
- Implement a water quality monitoring program for diazinon in the Chollas Creek watershed.
- Conduct assessment on outreach effectiveness to provide for a model that can be rolled out to other watersheds throughout the State

The Copermittees will support the project by in-kind contributions of additional educational materials, outreach activities, and sponsorship of workshops. The project start date is planned for the second quarter of 2004.

2.3 Data Collection & Analysis

A valid and comprehensive baseline assessment is imperative to quantify changes in water quality, and is the driving force behind responsible management decisions. To this end, each Watershed URMP was given the same activity, which was to develop a comprehensive water quality data management system for their watershed.

However, the Copermittees quickly realized that basic questions still needed to be answered before such a system could be developed. Specifically, how should we inventory the data? How do we check for quality achieved / quality controlled (QA/QC)? What data should be analyzed? As all of the Copermittees were faced with these unanswered questions, the jurisdictions agreed to make this project a "common" activity until a model management system could be developed by the Copermittees. Please refer to the Unified Watershed URMP document for an update on this activity.

In an effort to further improve the data collection occurring in the San Diego River Watershed, the City of Santee expanded its 2002-2003 Dry Weather Monitoring Program to include five additional monitoring stations at the upstream and downstream reach of the San Diego River, Forester Creek and Sycamore Creek through the City of Santee. Two rounds of sampling were conducted as part of the City of Santee Dry Weather Monitoring Program to evaluate the water quality of the San Diego River and the other major tributary creeks that collect the City's storm water. The objective of the additional study was to assess the water quality changes on the river and creeks as a result of flowing through an urbanized area in the City of Santee.

2.4 SUSMP Implementation

The Copermittees in the San Diego River Watershed adopted and implemented storm water development regulations on or before December 10, 2002, which are compliant with the model standard urban storm water mitigation plan (Model SUSMP) adopted by the Regional Board on June 12, 2002. The regulations include a series of site design requirements, source controls and treatment controls known as best management practices (BMPs) that are designed to permanently reduce the development project's potential impacts on water quality after the site is built (while the site is in "use"). The San Diego River watershed Copermittees implemented these requirements on all applicable development projects in the San Diego River watershed on or before December 10, 2002.

2.5 Source Water Protection Guidelines Project

The City of San Diego has nine drinking water reservoirs. The reservoirs capture local rainwater and runoff to supply up to 20 percent of the City's water. The reservoirs also store imported water that is piped into the region through aqueducts. The reservoirs are critical components of the regional water supply system. However, the quality of water stored in these reservoirs is at risk because of residential and commercial development in the watershed lands draining into them. Recent studies have identified runoff from urban land uses, construction projects, and related development activities in the watersheds as the largest sources of pollution to the reservoirs. However, nearly all the watershed lands draining into these reservoirs are located outside of the City.

The City uses many methods to ensure a healthful, high quality water supply. These methods include protecting the raw water supply, filtering and disinfecting the raw water at a treatment plant, and delivering this treated water through a closed, secure distribution system. However, the City continues to face significant challenges protecting its raw water supply because so much of the watershed areas are outside of its jurisdiction.

To provide a framework for stronger protection of water quality in its drinking water reservoirs, the City of San Diego Water Department (Water Department) has been working to establish "Source Water Protection Guidelines for New Development" (Guidelines). The Guidelines will establish water quality control measures for urban runoff from new development within the watersheds and specific to each of the reservoirs.

In developing the Guidelines, the Water Department is working closely with the building industry, and other agencies in the area that have jurisdiction over planning and land use to build on existing planning, zoning, and building code regulations and practices and to develop a uniform framework that is workable within the context of existing local and regional programs. Representatives from many of these agencies have taken an active role in the development of the Guidelines, serving on a Technical Advisory Committee that meets regularly to review project milestones and provide input.

In FY 2003, the Water Department team has established water quality objectives to provide clear targets and measures of existing water quality conditions specific to potable water treatability. Available water quality data and information were evaluated to determine how existing reservoir water quality compares to the potable water treatability targets and where the greatest efforts were needed to improve water quality. Water quality data from more urbanized areas in the San Diego region and professional judgment have also been applied to help anticipate the effects of future residential and commercial development in the watersheds. The pollutants have been prioritized, based on a review of existing water quality data, threshold levels, treatment facility capabilities and constraints, and operational considerations. Graphical representations of water quality data were particularly compelling in demonstrating existing problems to the project Technical Advisory Committee, which included representatives from the planning agencies that will ultimately be responsible for implementing the Guidelines.

Several concerns with water quality have been identified and prioritized. High priority pollutants of concern for the Water Department reservoirs include nutrients (and associated algae and taste and odor compounds), organic carbon, and total dissolved solids. This list of pollutants of concern will serve as the

basis to determine what controls or BMPs might be needed within the watersheds draining into the drinking water reservoirs.

The next step in developing the Guidelines will be to develop a menu of BMPs to address the pollutants of concern, by watershed. BMPs will include information for acceptability, proven effectiveness, reliability, relative cost, and potential impacts on groundwater quality. The Guidelines will also include recommendations for long-term maintenance requirements and monitoring to ensure BMP effectiveness.

Planning for drinking water protection by creating the Source Water Protection Guidelines for New Development will provide a road map for sustainable development and will lead to water quality improvements within San Diego area watersheds and to a safer and more reliable water supply. The Guidelines and cooperative regional approach led by the Water Department can serve as an example for other water utilities facing similar challenges in protecting their source water supplies.

2.6 Forester Creek Improvement Project – City of Santee

The Forester Creek Improvement Project involves creation of a widened, naturalized, vegetated channel to expand riparian habitat and wetlands habitat, and increase flood control capacity in a 1.2 mile reach of Forester Creek through the City of Santee. On September 25, 2003, the City of Santee was awarded the Grand Prize for Outstanding Environmental Solution by the San Diego Chapter of the Association of Environmental Professionals in recognition of its exemplary efforts in the design of the Project.

The restoration of Forester Creek was developed to solve problems within its reach through Santee and its contribution to water quality problems in the greater San Diego River Watershed. Adverse conditions in Forester Creek include water quality impairments, habitat loss, and degraded natural stream function. Through identifying and addressing each of these needs, the City of Santee established the following goals to improve water quality and enhance habitat in Forester Creek and the San Diego River:

- Control water velocity and volume to minimize erosion and sedimentation
- Protect and enhance riparian and wetland habitat
- Reduce non-point source discharges to the San Diego River
- Restore beneficial uses and protect surface water quality in Forester Creek and the San Diego River Watershed
- Provide recreational opportunities for residents and promote stewardship of Forester Creek and the San Diego River Watershed.
- Preserve in a naturalized state the last viable reach of Forester Creek

2.7 Water Quality Grants – County of San Diego

Following a competitive concept proposal review, the State Water Resources Control Board (SWRCB) invited the County of San Diego, in cooperation with stakeholders, to submit full proposals for the 2003 Consolidated Watershed Protection and Nonpoint Source Pollution Control Grants Program.

- *Porous Pavement and Model Municipal Operations Center Demonstration Project*. The County of San Diego proposes a project that will assess and demonstrate the use of enhanced source control and treatment control BMPs at specified County facilities, and to assess the use of four different types of porous paving materials. The project will illustrate to municipalities and the development and design communities the potential for using porous paving to reduce urban runoff and limit modification of stream hydrology in future new development and significant redevelopment projects. One specific demonstration site is the County Operations Center located in the San Diego River Watershed.

- *Woodside Avenue Low Flow Water Quality Basin and Arundo Removal*. The County of San Diego and its project partners (The San Diego River Park Foundation, The Lakeside Conservancy, San Diego State University (SDSU), San Diego Supercomputer Center (SDSC) and High Performance Wireless Research and Education Network (HPWREN) propose to perform conveyance restoration and construct a wetland to treat urban runoff before discharging into the San Diego River in the unincorporated community of Lakeside. The constructed wetland BMP would act as a demonstration for the effectiveness of wetlands at removing pollutants from water systems. A monitoring component of the project would provide evidence of the pollutant removal capabilities. An outreach component of the project would address the disseminating information to interested parties, as well as education of students, teachers, community groups, and business leaders about the benefits of wetlands to the environment.

3.0 Land Use Planning Activities

The Land Use Planning Context & Processes section of the Watershed URMP identifies several different activities and procedures designed to integrate watershed principles into comprehensive planning. The sections below provide a status report of work completed to date on those activities.

3.1 Individual Jurisdictional Planning Goals

Effective land use planning can provide important water quality protections by controlling the type and placement of activities allowed in critical areas, and by providing a framework within which site-specific control measures may be identified and imposed during land development and redevelopment activities. As such, the General Plan is crucial to the long-term success of its water quality and environmental programs.

A General Plan is the official city or county policy regarding the potential size and distribution of the jurisdiction's future population – balancing housing, employment and infrastructure needs with resource protection. The General Plan can be described as the city or county's blueprint for future development in that it represents the community's view of its future; a constitution made up of goals and policies upon which the city council, board of supervisors and planning commission base their land use decisions.

A city's land use authority, or ability to regulate land use development, does not extend beyond the jurisdiction's boundaries; cities are autonomous, and one jurisdiction cannot dictate or mandate local solutions in another. Historically, this has caused General Plans to focus almost entirely on local impacts rather than expanding the analysis to the watershed level.

Within recent years, however, jurisdictions have acknowledged the need to protect local assets as well as upstream and downstream resources within watersheds. As a result, jurisdictions have or are currently amending their General Plans to include similar goals and policies regarding water quality and watershed protection. Collectively, the jurisdictions' General Plans form the foundation for water quality betterment on a watershed level. Although adopted and implemented independently, jurisdictional land use policies and procedures function in concert with one another, jointly working towards the protection of the watershed and the improvement of water quality.

As stated in the Watershed URMP, the watershed Copermittees who had not yet completed their General Plan update agreed to develop actions plans to modify their respective General Plan in order to include goals and policies that addressed water quality, water protection and jurisdictional collaboration. Below is a status of each Copermittees' General Plan updates.

3.1.1 County of San Diego

As reported in the County of San Diego's Jurisdictional URMP Section 6.1, the County's initial analysis of its existing General Plan (Regional Elements and Community/Subregional Plans) revealed areas where changes could provide improved water quality and watershed protection. Staff specifically determined that water quality protection principles should be more centralized within the revised General Plan. It was also recommended that standardized language be included in community plans to more effectively integrate these principles and practices into the entire planning process.

During this reporting period, staff continued to address these issues through the County's comprehensive General Plan update, commonly referred to as GP2020. An important objective of this update is to develop land use goals and policies that will maintain a built environment compatible with, and sensitive to, the County's natural setting, while retaining communities and country towns of unique local character. A particular area of focus is the land use distribution, which identifies the type, intensity, and location of land uses that are anticipated in the foreseeable future. To ensure that water quality and other land use issues and concerns are adequately addressed during this review, the County has conducted numerous meetings with several community groups (including the 26 established planning/sponsor groups in the unincorporated area of the County), interest groups representing building industry and environmental interests, and other stakeholders.

It is anticipated that the residential land use distribution map will be presented before the Board of Supervisors (BOS) in December 2003. Once the BOS agrees with the approach, the Department of Planning & Land Use will begin finalizing the General Plan elements, which will more directly involve developing objectives and policies to address water quality, watershed protection, and storm water issues. Final adoption of the GP2020 project is expected in Winter 2004/05.

3.1.2 City of San Diego

On October 22, 2002, the San Diego City Council adopted the Strategic Framework Element and Action Plan. In addition, the City Council Land Use and Housing Committee (LU&H) approved the General Plan work program on February 12, 2003. This work program is based upon priority actions identified in the City Council-Adopted Strategic Framework Action Plan to be accomplished by 2008. The Strategic Framework Element is a new element of the City of San Diego's General Plan and lays out a strategy for a

comprehensive update of all of the elements of the General Plan. The Strategic Framework Element incorporates water quality and watershed protection principles in the Conservation and the Environment section of the document. The land use strategy proposed in the Strategic Framework Element incorporates a number of site and street design policies that achieve water quality and watershed protection principles such as reducing impervious surfaces and increasing vegetation. The water quality and watershed principles identified in the Urban Runoff Management Program were incorporated into the Strategic Framework Element and Five Year Action Plan and adopted by the City Council into the General Plan.

The Strategic Framework Five Year Action Plan includes direction to update the Conservation Element, among other General Plan elements, to further address storm water and urban runoff. In addition, the Strategic Framework Five Year Action Plan also includes recommendations to update other policies and regulations to address storm water and urban runoff, including amendments to the Street Design Manual, the Drainage Design Manual, and the Land Development Code.

Staff began work on Pilot City of Villages implementation and updates to elements of the General Plan upon adoption of the Strategic Framework Element in the fall of 2002. A summary of the status of the efforts to update the General Plan can be found in the City's Jurisdictional URMP Annual Report. It's important to note that since adoption of the City of Villages strategy and implementation of the Action Plan, new communication tools have been developed to leverage limited Planning Department resources and help provide tipping points in the ongoing dialogue with stakeholders. One of those innovations is development of a consolidated mailing database that has allowed for extensive use of e-mailings. Another is, creation of our "From Controversy to Solution Series", quarterly public forums designed to engage the public in spirited dialogue on the controversial issues related to the General Plan. Presentations to community planning groups and other stakeholder organizations remain a core component of the City's outreach program.

3.1.3 City of Santee

In 2003, the City of Santee adopted a comprehensive update of the General Plan 2020. The General plan is a statement of intent by the City as to the future development of the Community. The General Plan is comprised of mandatory elements required under state law and three elective elements. Of the mandatory elements, the Conservation Element provides policy direction related to water quality and watershed principles.

The Conservation Element addresses a number of natural resource issues including open space, biology, land use, minerals, cultural heritage, and water quality. The Conservation Element includes extensive discussion of local and regional watershed planning and water quality issues and provides specific policies and implementation measures to reduce pollutants in urban runoff and storm water discharge to improve the overall water quality.

In general, the Element gives policy guidance for protection of unique topography and floodways, reduction of soil erosion, reclamation of mined lands, preservation of significant biological resources, and reduction of pollutants in urban runoff and storm water discharge. To implement policy guidance for significant biological resources, the City is completing a Multiple Species Conservation Program Subarea Plan that would conserve approximately 2,600 acres in the City as permanent open space for habitat and species preservation. The Subarea Plan includes portions of watershed areas tributary to the San Diego River as

well as the San Diego River corridor. To implement policy guidance to reduce pollutants in urban runoff and storm water discharge, the City uses careful planning and review to identify and eliminate urban runoff problems before development is approved.

3.1.4 City of La Mesa

The City of La Mesa General Plan has integrated a commitment to monitoring storm water quality and utilizing appropriate BMPs in the past, as described in the Public Services and Facilities Element of the General Plan. However, the General Plan Pubic Services and Facilities Element has been assessed and was amended to supplement existing policies through General Plan Amendment (GPA) 02-01 which was approved by the City Council on October 22, 2002.

The remaining jurisdictions with land use authority in this watershed completed their General Plan amendments prior to FY 2003. A summary of the changes made to these General Plans can be found in Section III of the San Diego River Watershed URMP document or the Copermittee's individual Jurisdictional URMP document.

3.2 Current Inter-Jurisdictional Planning Collaborative Mechanism

Before certain discretionary projects are developed, development proposals must be reviewed for conformance with local regulations, environmental effects and public testimony. Generally speaking, such review is conducted by all jurisdictions (there may be minor procedural differences between municipalities, but the review process is basically the same). In order to get a better feel for the planning process, the following sections briefly describe the inter-jurisdictional planning collaborative mechanism. It should be noted that the following is a general synopsis of the entitlement process and does not get into program specifics. Please refer to the individual Jurisdictional URMPs for details on new and redevelopment project processing requirements.

3.2.1 California Environmental Quality Act

Pursuant to the California Environmental Quality Act (CEQA), before a discretionary project (e.g. development proposal, ordinance amendment, general plan update, etc.) can be approved by a jurisdiction, the project must undergo some form of environmental review. As part of this environmental review, consideration must be made to impacts associated with flooding and water quality. In order to adequately address these issues, most discretionary projects are required to prepare a study that fully and adequately characterize the project site's existing water quality, analyze the drainage, develop effective post-construction storm water Best Management Practices (BMPs) and ensure the effectiveness of the BMPs through proper maintenance and log-term fiscal responsibility.

CEQA requires that prior to being approved by a hearing body the environmental document must be available for public review for a period ranging from 20 to 45 days. Regarding notification, CEQA further requires that jurisdictions notify the public of the environmental documents through either on and off-site postings, direct mailing to contiguous property owners and interested individuals or publication in the newspaper of largest circulation. Most jurisdictions adopt CEQA notification policies that incorporate all three procedures in addition to additional procedures (e.g. directly notifying local and state agencies, organizations that may have an interest, etc.).

3.2.2 Public Hearings

Once the environmental review period has ended and any outstanding environmental issues have been addressed and/or mitigated, most projects will require a notified public hearing prior to approval of the project. The public again has the opportunity to comment on the project as well as participate in hearings relating to land use actions. At the hearing, Staff explains the project to the decision making body who considers the project in light of local regulations, environmental effects and public testimony from interested parties prior to making a decision.

Regarding the notification of public hearings, State law requires that all owners of real property located within 300 feet of the project receive notification of the hearing via mail at least 10 days prior to the hearing. The hearing notification must also be published in at least one paper of general circulation. Again, many jurisdictions adopt policies that incorporate these procedures in addition to other procedures (e.g. at least 20 different property owners are notified, procedures on how apartment complex residents are notified, etc.).

3.2.3 Memorandum of Understanding

In an effort to improve awareness of development projects near jurisdictional boundaries, the municipalities signed a Memorandum of Understanding (MOU) in January 1991 (Appendix A.2). The MOU established guidelines for the notification of land use and development actions approved by the unincorporated County of San Diego and incorporated municipalities. Because municipalities process thousands of applications annually, and the level of complexity between the applications varies dramatically, it is not feasible or beneficial to inform neighboring cities of ALL projects being conducted. As such, the MOU established notification parameters that are based on project size, location, and type. These notification guidelines are separate from the notification requirements under CEQA.

3.3 Watershed-Based Land Use Planning Mechanisms

The jurisdictions within the watershed have started the process of working with their respective planning departments to develop a system of practices to facilitate the integration of watershed data and information into the land use decision-making processes. The Copermittees recognize that planning is an integral part in reducing pollutant levels resulting from new and redevelopment projects. As little new information on water quality was available during this reporting period, efforts have been largely targeted on staff training and education. The amount and type of training conducted by the municipalities can be found within each jurisdiction's Jurisdictional URMP document. Additional watershed-based planning efforts currently going on within the watershed include the following:

- ✓ Land Use Professional's Reference Manual
- ✓ Watershed Management Plans
- ✓ Formal Agreement between Jurisdictions
- ✓ Additional Watershed Planning Activities

3.3.1 Land Use Professional's Reference Manual: "*Stormwater Quality and Watershed Protection - Looking at Alternative Development Policies*"

To date, jurisdictional and project level planning tools have been largely under utilized because storm water management is often viewed as an engineering issue. As a result, many site design solutions rely largely on structural treatment controls like detention basins and mechanical treatment devices, which can be expensive and maintenance intensive. In most cases, it is easier and cheaper to keep pollutants out of storm water by designing the pollutant source out of the project, while simultaneously preserving the site's natural filtration capacity.

Continuing the effort to educate planners on the need to incorporate watershed issues into land use planning principles, the County of San Diego, in cooperation with the City of San Diego, is in the process of developing a document entitled: *"The Stormwater Quality and Watershed Protection Manual – Looking at Alternative Development Practices"* (Manual). The Manual takes the first crucial step towards developing a mechanism for watershed-based land use planning by providing land use professionals (e.g. planners, engineers, architects, etc.) with a big picture overview of the water quality problems and the need for more site design solutions.

This Manual will help land use professionals understand first, how land use development affects water quality, and second, based on that understanding, why some tools are generally more effective than others at protecting water quality. This understanding will provide a theoretical approach – a storm water design philosophy – that will enable land use professionals to make more effective, cost-efficient decisions when "reaching into the planner's toolbox" at both the jurisdictional and project-level planning scales. This Manual will help land use professionals better understand the need for land use planning at the watershed level by explaining why pollutants lead to the detriment of the watersheds and what program and site design Best Management Practices land use professionals can considered when designing private development, redevelopment and public facility projects at the initial planning stages.

A summary of the Manual's contents is below.

- **POLLUTANTS**: Section II of the Manual provides a discussion on common storm water pollutants and the various land use types (e.g. residential, commercial, industrial) that generate them.

- **IMPACTS**: Section III of the Manual provides a discussion on the environmental impacts resulting from excessive pollution discharge.

- **LOCATIONS**: Section IV of the Manual provides a discussion on the watersheds found within the County of San Diego and a summary of the pollutants found within them.

- **TOOLS**: Section V of the Manual provides a discussion on the site design tools/techniques land use professionals can consider when designing (improving) either a water quality program or a specific development project.

The concept of the Manual has been discussed at numerous Copermittee and stakeholder meetings, where the idea of a planner's reference guide was well received. In an attempt to solicit ideas on document content and approach, both the County and City are currently collaborating with individuals from various stakeholder

groups and organizations, including the California NEMO Partnership (Nonpoint Education for Municipal Officials), California Storm water Quality Association, Rick Engineering, Project Clean Water Comprehensive Planning TAC, and San Diego River Watershed Management Plan Workgroup.

The County anticipates that a draft document will be available for public comment sometime in the spring of 2004. It is anticipated that the Manual will be finalized sometime in the summer of 2004.

3.3.2 San Diego River Watershed Management Plan

The stakeholder effort to develop a Watershed Management Plan, funded by Proposition 13, has made significant progress during this reporting period. This comprehensive plan will identify priorities and strategies for the protection and restoration of natural systems of groundwater recharge, native vegetation, water flows, riparian zones, beneficial uses of waters and overall water quality.

Stakeholders meet bimonthly at the City of Santee as a Watershed Workgroup to coordinate the development of the San Diego River Watershed Management Plan. The Watershed Workgroup also provides a forum for stakeholders in the watershed to report on complementary watershed planning activities. The Watershed Workgroup and consultants completed a Stakeholder Statement of Agreement, Stakeholder Needs and Expectations Report, Data and Information List, List of Existing Data and Information Collected and Watershed Characteristics Inventory Report.

The Watershed Workgroup met eight times between July 2002 and June 2003, with a total attendance of 145 stakeholders (Table II-1). In addition, the Watershed Workgroup offered two field trips in the watershed to the San Vicente Reservoir and the Famosa Slough. Upcoming deliverables include a Water Quality Report, Data and Information Management Plan, Watershed Assessment and Draft Watershed Management Plan. The progress of this planning effort will be detailed in the FY 2004 Annual Report.

Table II-1: Summary of San Diego River Watershed Workgroup Meetings.

Meeting Date	Attendance	Principal Agenda Items
8/09/02	15	• Transition of Project Lead • BMP presentation • City of San Diego, San Diego River WURMP Update • Status Report on Public Workshops and Stakeholder Statement of Agreement • Outreach Subcommittee Update
9/16/02	19	• Stakeholder Statement of Agreement • Hiring a Consultant • Upcoming Deliverables & Hiring Project Manager
10/11/02	20	• Stakeholder Statement of Agreement • Data and Information List • Consultant Update • City of San Diego, San Diego River Watershed URMP Update • Riverview Water District, Well Testing Results
12/13/02	15	• Adoption of Stakeholder Statement of Agreement • City of San Diego, Presentation of Draft San Diego River Watershed URMP • Prop 13 Budget Amendment • Overview of the Municipal Water Supply System • Tour of the San Vicente Reservoir

Meeting Date	Attendance	Principal Agenda Items
1/23/03	28	• Watershed Mapping Project, SDSU • Project Clean Water, Citizen Monitoring Centralized Database • Draft List of Existing Data and Information Collected
2/14/03	13	• Appointment of Rob Hutsel as Watershed Workgroup Co-Chair • Watershed Management Plan Work Product Schedule • Status Report on the RFP for Consultant Services • Draft List of Existing Data and Information Collected • Updates on the San Diego River Conservancy and San Diego River Park Master Plan • Outreach to Local Universities and Community Colleges
4/11/03	20	• San Diego River Master Plan Update • Outreach to Local Universities and Community Colleges • Anchor Environmental Project Team Introductions and Presentation • Review of Draft List of Existing Data and Information Collected
6/13/03	15	• List of Existing Data and Information Collected- Final Review • Draft Watershed Characteristics Inventory Report • Upcoming Deliverable – Water Quality Report

3.3.3 San Diego River Park Master Plan

Throughout the history of the San Diego region, the San Diego River has played an integral part in human habitation. In recent history when our dependence on the River as a source of water ended, the River's importance diminished, resulting in a river that has been channelized for flood control and impacted by surrounding development.

In the summer of 2001, City of San Diego Mayor Dick Murphy, with support of Councilmembers Frye and Madaffer, whose districts include the River, invited elected officials from the local jurisdictions (County of San Diego and City of Santee), the state and the federal governments to be members of the San Diego River Alliance. The Alliance, in concert with the San Diego River Park Foundation [a 501(c)(3) organization] and the San Diego River Coalition (non-governmental organization) are working toward creating a San Diego River Park that would extend from the ocean to its headwaters in the Cuyamaca Mountains. In addition, recognizing the importance of the San Diego River as a resource for wildlife habitat and recreation, in 2002, the State of California passed Assembly Bill 2156 establishing the San Diego River Park Conservancy.

Utilizing the San Diego River Park Conceptual Plan (2002) as a foundation, in FY 2003 local jurisdictions pursued individual San Diego River planning efforts. This plan was prepared by the San Diego River Foundation, sponsored by the California Coastal Conservancy, and the Select Committee on Park & River Restoration chaired by Assemblymember Christine Kehoe.

In FY 2003, the City's San Diego River Master Plan efforts encompassed the San Diego River and its surrounding area of up to one-half mile on each side, extending from the mouth of the River to our border with the City of Santee. When completed, the Master Plan will address recreational opportunities, wildlife habitat conservation and restoration, and improvement. A design team was hired in August of 2003 and it is anticipated that the Master Plan that will then need to need environmental review will be completed yearly summer 2004.

4.0 Educational Activities

This section describes actions taken by the Copermittees during this reporting period to enhance the general public's understanding of basic watershed principles and sources of water pollution. Making all San Diegans aware of the importance of individual actions in protecting our water resources and promoting watershed stewardship are crucial components of this educational program.

4.1 Summary of Watershed Education Activities

The Copermittees have started the process of refining current education programs in order to integrate watershed-based components. Education was generally focused in order to meet the needs of different sub-regions and associated land uses within the watershed. Suitable Best Management Practices (BMPs) were incorporated into the education efforts as determined appropriate to the targeted community.

Over the short and long term, the watershed educational strategy focuses on three key principles:

- What is a watershed?
- We all live in a watershed
- Watershed stewardship (all individual actions within our watersheds add up in a cumulative way to influence the health of our water resources)

4.2 Summary of Watershed Education and Outreach Conducted

The following is a description of the four-prong approach developed during the reporting period:

- Incorporate core watershed principles into existing educational programs
- Promote watershed stewardship in communities
- Develop educational strategies to target priority pollutants within the watershed
- Achieve milestones as determined through annual assessments

How the Copermittees are implementing the first two prongs of the four-pronged approach can be summarized as follows: The key principles ("what is a watershed" and "we all live in a watershed") were incorporated into current educational efforts such as community event demonstrations, clean-up days, citizen monitoring activities and school presentations. Building on these efforts, a watershed stewardship focus has been initiated to establish community ownership of our water resources. Through various modalities described below (e.g. watershed model demonstrations, watershed address mapping and citizen watershed monitoring), the connection is made between "our backyard", effects downstream, and preservation of our precious coastal habitats.

The third prong of the four-pronged approach focuses on priority pollutants within the watershed. Due to limited budgets and the benefits of economies of scale, the Copermittees are focusing on priority pollutants

that span across multiple watersheds first and watershed specific pollutants second. One class of priority pollutants of concern that is found in a majority of the watersheds within the San Diego region is pesticides. Pesticide impacts to water quality are being addressed under the education strategy at the regional level across all watersheds. Based on continued monitoring, the education program will be refined over time to address other specific constituents of concern found in multiple watersheds.

The fourth and final prong in the approach is program effectiveness. The City of San Diego has conducted public awareness surveys of water quality and watershed issues within the City's jurisdiction in each of the last two years. Although the results were separated by watershed within the City's limits, the survey, entitled "City of San Diego Storm Water Pollution Prevention Program 2003 Follow-Up Survey of City Residents," was not watershed-wide except in the Mission Bay and Coastal La Jolla watershed.

To expand on these surveys and allow Copermittees to measure the effectiveness of education efforts, the Copermittees have started the process of developing and coordinating consistent questions for public awareness surveys. Ensuring consistency in watershed questions will allow Copermittees to individually or collectively conduct comparable ("apples to apples") surveys throughout each watershed. The Copermittee's goal with these surveys is to develop effective public education programs that are founded upon community-based data that will generate locally tailored strategies. These surveys will measure baseline knowledge of pollution prevention/source reduction activities in the watershed communities.

4.3 Education Action Plan

The Educational Program of the San Diego River Watershed URMP identified actions that participating jurisdictions were going to undertake over the short and long term in order to further develop and implement the watershed-based education element. Progress on each specific educational activity identified in the program's Education Action Plan is described in the following sections.

4.3.1 Public Presentations & Media

Public presentations are aimed at professional organizations and industry-specific associations. They incorporate both general watershed principles common to all watersheds and specific best management practices of interest to the particular audience to address pollution prevention. Of particular focus this fiscal year is the educational efforts aimed at the agricultural/landscaping groups and pesticide operators to increase awareness of pesticide and fertilizer issues and to promote the use of integrated ecologically sound pest management programs. Core watershed concepts and principles are incorporated into public presentations and media opportunities. Refer to Tables II-2 and II-3 for a summary of the public presentations and media events/releases conducted by the Copermittees during this reporting period.

Table II-2. Summary of Public Presentations and Media Events in the San Diego River Watershed.

Start Date	Event Title	Specific Audience	Estimated Audience	Location	Jurisdiction
9/17/02	Outreach Letters to Lakeside Residents	P2 Conference Attendees	65	Lakeside (near Eucalyptus Hills Creek and Riverside Dr.)	Unincorporated

Start Date	Event Title	Specific Audience	Estimated Audience	Location	Jurisdiction
11/14/02	Regional Ag/Landscapers Workshop	Nurseries, Greenhouses, Golf Courses, Cemeteries, Pest Control Businesses	21	El Cajon Community Center	City of El Cajon
12/3/02	Presentation to Lakeside Kiwanis	Restaurant Employees and Owners	26	Lakeside Kiwanis	Unincorporated
2/3/03	Overview of Stormwater Requirements and Enforcement	General Public	50	Sycamore Volcan Park	Unincorporated
3/21/03	MSCP Environmental Stormwater Presentation	P2 Conference Attendees	50	Admiral Baker Country Club	City of San Diego

Table II-3. Think Blue FY 2003 Media Buy Year End Summary.

Station	FY 2002 Expenditure ($)	Number of Paid PSAs	Number of Comp N/C PSAs	Value of In-kind ($)	Total Value ($)
FM Radio:					
Sets 102 /KPRI	8,000	156	48- 60 sec @ Interview 3 mins Web link	10,400	18,400
B 94.9 FM (JP)	5,000	65	3 Events 2@2,000; 1@4,000 6- Surf Sponsor; 34 PSAs	9,580	14,580
KFMB Star 100.7	6,997	131	Web Link -Feb	2,000	8,997
PLANET 103.7 (I)	5,000	82	20 @ 83.33 40 Planet Tips @ 150 1-Interview J.Lawrence	10,166	15,166
KPBS	7,500	74	Full Focus TV Interview ½ hour Karen Rostada	5,000	12,500
KGB 101 (cc)	6,000	80	10- 20 sec promos @ 75 1 Event-Ju	2,750	8,750
KHTS 933 (cc)	8,000	120	68 -60 sec events 1 print advertisement	17,080	25,080
AM Radio:					
KOGO- 600 (cc)	7,000	60	20-5 sec promos @125 5 part interview; web, 10-60 second PSAs	10,750	17,750

Station	FY 2002 Expenditure ($)	Number of Paid PSAs	Number of Comp N/C PSAs	Value of In-kind ($)	Total Value ($)
COX 4/Padres**	12,000	32	23- Padres KUSI & COX4 5@750; 18@750	17,250	29,250
COX NETWORK DISC, CNN, BRAVO, MSNBC, TNT, FAM, SDN, SCI- *"Taken"* Spielberg	12,000	242	44 @ 59 ea average	2,596	14,596
FOX 6*	60,000	204	6a-9a live Coastal Clean Up 4-interviews w Kirby	4,000	64,000
Time Warner *** LIFE, DISC, USA, TLC, CNN, TNT, TRVL, FAM, HGTV, NATGEO,ANPL SCI- *"Taken"* Spielberg	15,000	188	107 PSAs- various	4,955	19,955
KGTV 10 * (ABC)	13,005	54	42 various @ 150 -600 ea	12,900	25,905
XEWT 12 *	20,000	304	36 PSAs @ 100 10 Did you Know tips @500 1 Cinco De Mayo Event 1 Live Interview AM Show	13,100	33,100
KUSI 9/51*	14,960	110	36- PSAs- @ various 1 morning Show interview 3 News stories	7,725	22,685
KFMB 8 * (CBS)	15,000	64	8- 10 sec billboards @120 Micro climate sponsorship	2,000	17,000
KNSD 7/39* (NBC)	11,000	47	4-Today Show Billboards @175 4- Local Billboards @200 3- News stories @500	3,000	14,000
TOTALS:	**$ 226,462**	**2013**	**# PSAs: 536** **#Other: 30**	**$ 135,252**	**$ 361,714**

* Aired entire County
** Aired Cox 4- @400,674 HH county wide + KUSI 51-16 games all county cable HH
*** Cities of San Diego, Del Mar, Poway and Fairbanks Ranch in the County

4.3.2 Regional Watershed Brochure: What is a Watershed?

The Copermittees recognized early that there was a need to develop a simple, relatively cost sensitive approach of informing the general public about watershed issues. It was generally felt that watershed messages needed to provide information on not only common terms and concepts (e.g. definition of a watershed), but specific and unique issues that were found in the watershed. To fill this need, the

Copermittees elected to develop a brochure with maps, common terms and highlighted targeted messages, as determined by water quality assessment and other available information. In order to ensure consistency between watershed brochures, the Copermittees started the process of developing a model brochure.

Successful communication campaigns begin with key, core messages, which are repeated often and given time to become "common knowledge" with target audiences. During this reporting period, standardized watershed terms and definitions related to the San Diego region were established in order to enhance public understanding of watershed principles. These terms and definitions were posted on the Project Clean Water website and can be found at www.projectcleanwater.org/pdf/ed_tac/watershed_defs.pdf.[2]

Stakeholders participating in the Education and Resource Development Technical Advisory Committee (Ed-TAC) of Project Clean Water developed this list of terms and definitions by committee consensus that was approved in June, 2003. The Ed-TAC is a regional forum that met monthly to accomplish this action item. Stakeholders include Copermittees, other local government agencies, non-profit groups and individuals in the San Diego region. List development was accomplished over four Ed-TAC meetings:

- February 27, 2003 – The committee recommended the action item to develop the list of consistent terms;
- March 27, 2003 – The Ed-TAC refined the list and agreed that the terms and definitions for residential outreach be posted on the Project Clean Water Ed-TAC message board;
- April 24, 2003 –The Ed-TAC further refined 15 key watershed definitions; and,
- May 29, 2003 – The first set of definitions were finalized and distributed to Ed-TAC members. During the development process, the Ed-TAC solicited comments and recommendation from the Copermittee Technical Outreach Workgroup.

The standardized language will be utilized in a regional watershed brochure template that can be refined and augmented with specific information relevant to each watershed. The branding of attention grabbing images and easily understandable language is crucial to program success. As such, the brochure template will mirror the model developed for the regional watershed poster in order to impart consistent messages to the public. The County of San Diego, in cooperation with the Ed-TAC and the Outreach Workgroup, are currently developing the layout of a draft brochure. It is anticipated that the draft will be available for stakeholder comments by July 2005.

4.3.2 Regional Watershed Poster: What Watershed Do You Live In?

It is very important for the public to become acquainted with the defining features of watersheds – where the water bodies are, the high and low points, where water flows and where it discharges, and the various land uses within each watershed. Posters and maps are tools that illustrate these defining features in a visually attractive and simple way. To that end, the Copermittees initiated the process of developing a

[2] The definitions are provided on www.projectcleanwater.org to promote general awareness of watershed issues. More detailed and technical definitions relating to environmental laws and compliance issues exist. They may vary within each local jurisdiction of San Diego County and between local agencies and state and/or federal agencies. For more information, contact the appropriate agency.

regional poster template, with embedded map, for use throughout the San Diego region. The template incorporates the following:

- Regional watershed relief map, including the entire San Juan, Santa Margarita, and Tijuana watersheds which extend beyond County boundaries;
- Major roads, watershed and jurisdictional boundaries, and key water bodies;
- Information bar and photo for each watershed, including a general locator map that highlights the specific watershed with a listing of water bodies and land uses;
- Standardized watershed definitions and terms; and,
- Graphic images of the biomes within the region.

During the latter part of the 2003 Fiscal Year, the County and the North County Storm Water Program (NCSWP) reviewed sample watershed maps from various sources and began to coordinate poster design by addressing the goals, features and distribution to target groups. A sample distribution list includes school classrooms, libraries, city halls, nature centers, community centers and for display at public events. To maximize resources and minimize costs to Copermittees, collaboration was initiated to combine educational goals targeted at planners and the general public within the regional poster design.

By the end of this reporting period, three draft formats were selected and edited to illustrate San Diego's Watersheds. During the next reporting period (FY 2004), the Project Clean Water Ed-TAC and the Copermittee Technical Outreach Workgroup will evaluate the draft templates. The Copermittees and watershed stakeholders groups will be asked to submit images and a brief watershed description to be inserted into the template. It is anticipated that by the end of the FY 2004 reporting period, a complete poster template will be available for Copermittees and stakeholders to personalize with watershed specific information.

4.3.3 School Presentations: Water Quality and Watersheds

Educating school children is essential for promoting watershed awareness and changing behavior at any early age. School children are a responsive audience, and often bring information on the "right thing to do" home to their family members. During this reporting period, grade levels K-6 were given priority for in-classroom presentations by qualified staff. The existing general storm water presentations were enhanced with watershed-focused content such as:

- Change in title of presentation from "Water Quality and You" to "Watershed Health and You";
- Incorporate core watershed principles via Enviroscape (watershed) model;
- Identify "Watershed Address" and concept "We all live in a watershed";
- Identify constituents of concern per watershed from the Project Clean Water website and associated source land uses through County Water Authority map or interactive discussion;

- Identify various watershed habitats;
- Distribute best management practice literature and promotional items; and,
- Use student-made badges and pledges to promote retention of watershed awareness and stewardship.

The Watershed Copermittees conducted at least nine formal presentations that reached approximately 546 students throughout the watershed (See Table II-4). Initial outreach efforts have targeted the elementary grade levels (K-6); watershed outreach to high school students was achieved through environmental fairs. The Copermittees strive to make the presentations interactive in order to increase learning through hands-on demonstrations. Visual aids and demonstrations make the presentations interesting and provide for a feedback mechanism that increases retention of basic watershed concepts. Common learning tools include demonstrations with the Enviroscape watershed model, button making, student pledges, puzzles, water activity posters and the video "We All Live Downstream". Pre and Posttests are utilized to determine educational content retention. Testing results will be used to refine and improve educational program content and delivery. In the next fiscal year, more focus will be placed on increasing teacher training events so that watershed curriculum can be better integrated into existing standard curriculum.

Table II-4. Summary of School Outreach in the San Diego River Watershed.

Date	Event Titles	Estimated Audience	Specific Audience	Location	Jurisdiction
8/19/02	Water Quality and You (Four 1.5 Hour Sessions)	School (Grade 5)	130	Nicoloffe Elementary School	City of San Diego
1/28/03	New Stormwater Requirements Presentation to SDSU Environmental Health Class	School (College / University)	30	SDSU Campus	City of San Diego
4/12/03	Teacher Training	Teachers	26	Stelzer Park	Unincorporated
4/14/03	Watersheds and You	School (K-6)	60	Lindo Park Elementary & Boys/Girls Club	Unincorporated
4/15/03	Water Sampling Demonstration	School (K-6)	60	Lindo Park Elementary & Boys/Girls Club	Unincorporated
4/17/03	Water Sampling Demonstration	School (K-6)	60	Lindo Park Elementary & Boys/Girls Club	Unincorporated
5/15/03	Pollution Awareness Talk at Pershing Middle School	School (6-8)	60	Pershing Middle School	City of San Diego
5/23/03	Pollution Awareness Talk to School Children	School	60		City of San Diego
5/29/03	Pollution Awareness Talk at Pershing Middle School	School (6-8)	60	Pershing Middle School	City of San Diego

4.3.3.1 Earth Force GREEN

The County of San Diego, Department of Planning and Land Use, Multiple Species Conservation Program Division hosted an Earth Force GREEN (Global Rivers Environmental Education Network) training workshop at the Water Conservation Garden at Cuyamaca College on March 25, 2002. Participants

included George Stratman, Director of Outdoor Education for the County of San Diego Office of Education, staff from County Departments of Planning and Land Use, Parks and Recreation, Environmental Health and the City of San Diego, The Environmental Trust, Otay Water Authority, Helix Water District, and Solana Recyclers. The workshop included water monitoring and other interactive activities as well as Earth Force GREEN *Protecting Our Watershed* curriculum training. Earth Force GREEN is a watershed education program geared towards middle school students that connects learning with youth action and youth voice. Dr. William Stapp of the University of Michigan founded GREEN in 1984 when a group of students asked him to help them investigate a number of cases of individuals who had contracted hepatitis from the Huron River. With Dr. Stapp's help, the students discovered the cause of the problem and worked with the local government to find a solution.

Educators all across the United States and in Canada and South America are currently using the Earth Force GREEN *Protecting Our Watershed* curriculum because it gives them a step-by-step process to guide young people in improving the health of their water resources. Students are not only taught what a watershed is through various interactive activities, classroom learning and field experience, but they are also given the opportunity to make lasting changes in their communities. One result of this training was integrating a watershed focus into presentations and nature hikes given by MSCP and Parks & Recreation staff.

4.3.3.2 Environmental Camps and After School Programs

Another strategy used to educate school children is participation in after school programs and environmental camps sponsored by established groups involved in non-formal education such as the Boys and Girls Clubs. These groups often allow for more flexible scheduling and provide a relaxed, less structured atmosphere in which to engage the students in a variety of related activities. Such programs are offered for working parents during school breaks and often enroll students from disadvantaged groups. An example of a successful collaboration is the County of San Diego Watershed Protection Program participation in the Lakeside Boys & Girls Club Spring Envirocamp for the second consecutive year. Activities include hikes, water monitoring, watershed model demonstrations, speakers from environmental agencies, related arts, games and videos.

4.3.3.3 CalPIRG Partnership

The County of San Diego partnered with CalPIRG, who received a grant of $607,500 to provide, in part, watershed/pollution prevention education to schools in southern California. As part of this partnership, the County conducted several presentations in the San Diego Region as well as trained CalPIRG participants on how to present watershed education workshops. A total of seven of these presentations were completed in the unincorporated area of the County during this reporting period.

4.3.4 Integrated Pest Management Campaign

The Copermittees, and their project partner (University of California Cooperative Extension – UCCE) intend to protect and restore affected beneficial uses of receiving waters throughout the San Diego region through a comprehensive approach to Integrated Pest Management (IPM) outreach and education. During this reporting period, the City of San Diego, as lead agency, applied for and was given preliminary approval for a pesticide mitigation grant from the State Water Resources Control Board (Pesticide Research and

Identification of Source and Mitigation Grant Program). A summary of the IPM strategy and approach is highlighted below.

Water quality monitoring data (collected during both dry and wet weather seasons throughout the county) indicate that pesticides (especially diazinon) routinely exceed water quality standards in most of the region's watersheds. The grant funding was sought to develop and implement an IPM educational program, which is sustainable beyond the life of the proposed project. The project will also specifically target the TMDL for diazinon in the Chollas Creek watershed.

IPM promotes the use of integrated, ecologically sound pest management programs. The following is a description of the project strategy:

- Develop educational materials, pertinent to the region, under the leadership of the UCCE;
- Integrate the educational materials into the UCCE Master Gardener's Program;
- Develop and implement a model retail Point of Purchase Campaign in two targeted watersheds;
- Perform regional IPM outreach activities;
- Implement a focus community-based educational program in the Chollas Creek watershed;
- Implement a water quality monitoring program for diazinon in the Chollas Creek watershed; and,
- Conduct assessment on outreach effectiveness to provide for a model that can be rolled out to other watersheds throughout the State.

The Copermittees will support the project by in-kind contributions of additional educational materials, outreach activities, and sponsorship of workshops. The project start date is planned for the second quarter of 2004.

4.3.5 Partners in Clean Water – Partnerships in Action

To maximize effectiveness, the Copermittees pursue partnerships and cooperative activities to enhance regional storm water activities. These partnerships are described in the Jurisdictional URMP annual report. Details on watershed stakeholder partnerships, above and beyond those identified in Jurisdictional URMP annual report, are described below.

4.3.5.1 San Diego Citizen Watershed Monitoring Steering Committee

The San Diego Citizen Watershed Monitoring Steering Committee (Steering Committee) is comprised of community, governmental, and scientific leaders: Clean Water Team – State Water Resources Control Board, San Diego Bay Keeper, Surfrider Foundation, San Diego State University, County of San Diego, City of San Diego, San Diego County Water Authority, San Diego Sea to Sea Trail Foundation, Sister Schools of San Diego, and Southwestern College. The Steering Committee fosters project-based learning by encouraging knowledge and resource sharing between groups performing watershed-monitoring activities in San Diego.

Sister schools, coordinating with San Diego BayKeeper and the Steering Committee coordinated Coastal Snapshot Monitoring Day (Bi-National Project) on May 17, 2003. This annual event promotes the citizen monitoring of coastal waters from the Oregon/California border to Ensenada, Mexico. Other efforts by the committee and it members include the coordination of the 1st Annual National Monitoring Day (October 2002) and a 2003 Consolidated Grants Program proposal to coordinate, evaluate, improve and expand citizen monitoring programs in the San Diego region (lead: San Diego State University Foundation).

4.3.6 Community Events –Local Water Body – Striving toward Stewardship

During this reporting period, the Copermittees participated in at least twenty one community events to reach an estimated 4,949 participants (See Table II-5). Watershed concepts and principles have been incorporated into booth displays and event activities using the tools listed in the school presentations. For future events, the Copermittees will provide participants with the regional watershed brochure and a watershed display.

Table II-5. Summary of Community Events in the San Diego River Watershed.

Date	Event Title	Specific Audience	Estimated Audience	Location	Jurisdiction
9/21/02	Coastal Clean Up Day (Cuyamaca)	General Public	10	Lake Cuyamaca	Unincorporated
9/21/02	California Coastal Clean Up Day (Carlton Oaks)	General Public	25	Carlton Oaks Restoration Project (Santee)	City of Santee
9/21/02	Coastal Clean Up Day (Ramona)	General Public	60	Dos Picos County Park	Unincorporated
9/21/02	Coastal Clean Up Day (Mission Valley)	General Public	150	Mission Valley Preserve Site (Sefton Park)	City of San Diego
9/21/02	Coastal Clean Up Day (Lake Jennings)	General Public	6	Lake Jennings	Unincorporated
9/21/02	Coastal Clean Up Day (San Diego)	School (9-12)	42	San Diego River (Santee)	City of Santee
9/28/02	Fleet Week - Gillespie Field	General Public	500	Gillespie Field Airport (El Cajon)	City of El Cajon
10/5/02	Lakeside Fire Station Open House	General Public	500	Lakeside Fire Station	Unincorporated
10/5/02	Alpine Viejas Western Days	General Public	1,000	Alpine Community Park	Unincorporated
11/24/02	Auto Swap Meet	Automotive Hobbyists	300	Qualcomm Stadium Parking Lot	City of San Diego
4/12/03	Volunteer Day	General Public	36	Flinn Springs	City of El Cajon
4/12/03	Earth Day: Creek to Bay Cleanup	General Public	84	Ocean Beach – Dog Beach	City of San Diego
4/12/03	Earth Day: Creek to Bay Cleanup	General Public	290	Ocean Beach – Pier	City of San Diego
4/12/03	Earth Day: Creek to Bay Cleanup	General Public	30	Mission Valley Preserve	City of San Diego

Date	Event Title	Specific Audience	Estimated Audience	Location	Jurisdiction
4/12/03	Earth Day: Creek to Bay Cleanup	General Public	34	Mast Park	City of Santee
4/18/03	Volunteer Day	General Public	15	Flinn Springs Park	City of El Cajon
4/25/03	Lakeside Rodeo	General Public	1,500	Lakeside Stadium Association	Unincorporated
4/26/03	I Love A Clean Alpine	General Public	100	Alpine Chamber Triangle	Unincorporated
4/30/03	Nature Hike and Pollution Awareness	School (K-5)	42	Lindo Lake	Unincorporated
5/3/03	Start of the Park	General Public	200	Lindo Lake	Unincorporated
5/16/03	Bike-To-Work Day	General Public	25	Kearny Mesa	City of San Diego

The community events listed include large regional venues, such as Earth Day and the San Diego County Fair, community festivals, nature hikes, and hobby and interest specific events. Interacting with the various communities within in the watershed is the first step in forging key relationships with community groups. Building on these relationships, the Copermittees will target increasing stakeholder involvement in the watershed in order to promote watershed stewardship and to protect our water resources.

5.0 Public Participation Activities

Public participation during the development and implementation of the San Diego River Watershed URMP has been, and will continue to be, encouraged to ensure that stakeholder interests and creative solutions are considered. Broad participation is critical to further development and implementation of the watershed program. While participating jurisdictions aim to improve coordination among their own agencies, the watershed approach calls upon these agencies to engage diverse stakeholders in this process. Further, the participating municipalities recognize that no single agency has the capacity to address water quality issues on its own and broad partnerships are essential to positively affect the water resources in the watershed. It is only through a collaborative approach that we will develop a better understanding of these issues and processes affecting water quality in our watersheds and subsequently select and address priorities.

The following sections summarize the activities and efforts made by the Copermittees to encourage public participation during this reporting period. *Please note that this section is not exhaustive and only discusses the activities that were identified in the Public Participation section of the Watershed URMP. Many municipalities have worked with stakeholders on efforts such as the planner's reference manual, grant applications and water quality data collection. The Copermittees felt that it was not necessary to reiterate these activities in this chapter, if such public involvement and interaction was already discussed in the proceeding chapters.*

5.1 Copermittee and Stakeholder Collaboration

To address watershed-specific issues in developing the San Diego River Watershed URMP, the participating Copermittees held three full workgroup meetings, in addition to meetings between the City of San Diego and individual jurisdictions, members of the public, and consultants. The Copermittees also solicited input from all stakeholder through email and postings of draft Watershed URMP documents on the Project Clean Water website (www.projectcleanwater.org). The City of San Diego led the development of the San Diego River Watershed URMP between March 2002 and January 2003, along with numerous hours contributed by the other participating jurisdictions. The draft San Diego River Watershed URMP was presented to the San Diego River Coalition during one of their regularly scheduled meetings in October 2002. The City of San Diego also held a program kickoff meeting in April 2003, with watershed stakeholders to introduce the recently completed San Diego River Watershed URMP.

5.2 Integration and Participation in Local Planning Activities

Watershed planning has become an issue of increasing importance over the past few years. Various local planning efforts provide forums for exploring both the development of watershed and jurisdictional activities and programs. The relationship of these efforts to the Watershed URMP development and implementation cannot be overstated since both efforts address complementary issues that rely on public participation for success.

Stakeholders within the San Diego River watershed are in the process of developing a watershed management plan that targets various watershed issues, including water quality. As part of plan development, stakeholders within the watershed are attending regular meetings and providing valuable input on plan direction. The City of Santee is host to the San Diego River Watershed Management Plan Workgroup meetings. The San Diego River Watershed Workgroup meets every other month to coordinate activities and ensure that planning efforts in the watershed are mutually supportive and complementary. For more information on the watershed management plan, please refer to Section *3.3.2 – San Diego River Watershed Management Plan* of this document for more information.

5.3 Project Clean Water – San Diego River Watershed Website

During this reporting period, Project Clean Water provided a venue for public participation and involvement in local watershed activities. The relationship of these efforts to Watershed URMP development and implementation cannot be overstated since they address complementary objectives and all rely on public participation for success. The Project Clean Water watershed website (www.projectcleanwater.org/html/ws_map.html) was revised in March 2002 to provide watershed-based resources (See Figure 5.1). The Watershed Map page shown in Figure 5-1 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 summary page and additional link options are summarized below.

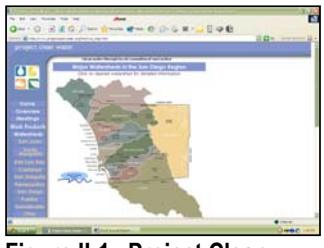

Figure II-1. Project Clean Water watershed page.

- ✓ San Diego River Watershed Summary Page

  The San Diego River Watershed Summary Page provides general information about the watershed including hydrologic units, major water bodies, 303(d) listed water bodies, major impacts resulting from high pollutant loads and possible sources of pollution. Also included in this page is a narrative that summarizes the unique features found within the watershed (habitat, landmarks, land use types, etc.), the municipalities with land use authority and a reference map. In some cases, the watershed boundary encompasses areas that are outside of the boundaries of the Municipal Permit (such as the Santa Margarita River Watershed). In these cases, only the areas within the limits of the Municipal Permit are shown in detail.

- ✓ San Diego River Watershed Plan Page:

  From the watershed summary page, visitors can access the San Diego River Watershed Plan Page. The plan page identifies the various known planning and management activities (both private and public) that are currently underway within the watershed (e.g. Watershed URMP, watershed management plans, etc.). Individuals interested in a particular plan can read the summary narrative that is provided or download the entire document (.PDF file). Where possible, this page also provides links to external websites for various projects and plans.

- ✓ San Diego River Watershed Project Page:

  From the watershed summary page, visitors can also link to the San Diego River Watershed Project Page. This page identifies the known public and private projects currently underway within the watershed. The list can be very extensive and is comprised of the following project categories: monitoring efforts, education and outreach activities, conservation projects and special studies. Individuals interested in a particular project can link directly to the organizations website to get more information on the activity.

- ✓ San Diego River Watershed Activities Page:

  Lastly, from the summary page, visitors can access the Watershed Activities Page for this watershed. The activities page lists the known stakeholder groups (Non-Governmental Organizations (NGOs), Non-Profit Organizations (NPOs), other environmental organizations, government, etc.) who are involved with activities aimed at preserving and protecting the watershed. The list identifies the group name or activity, the point of contact and a contact number. The page also provides links to these activities or groups, when available.

During the past reporting period, Project Clean Water had over 2,000 visitors per month with thousands of files downloaded daily. Close to 20 percent of the visitors linked to the watershed page to learn more about what was going on in the watersheds in San Diego County. During FY 2003, the San Diego River watershed web page received a total of 6,515 hits. A monthly breakdown of the hits can be found in Table II-6 below.

Table II-6: Number of 'Hits' on the PCW San Diego River Watershed Web Site.

July '02	August '02	September '02	October '02	November '02	December '02
352	357	409	516	580	734
January '03	**February '03**	**March '03**	**April '03**	**May '03**	**June '03**
582	507	604	684	616	574

5.4 Stakeholder Workgroups

5.4.1 City of San Diego Clean Water Task Force

The Clean Water Task Force met four times during the 2003 fiscal year, and sought public comment on all agenda items, in addition to reserving time for public comment on non-agenda items at each of these meetings (a list of the agendas for these meetings are attached). Some of the significant items discussed included:

- Storm Water Pollution Prevention Program yearly update
- Urban Runoff Management Program Funding Options
- City of San Diego's program to clean entire sewer system within two years
- Mission Bay Urban Runoff-Related Projects Update
- Sewer Spills Reduction Information for 2002
- Storm Water Education Activities (including Project SWELL, [Stewardship: Water Education for Lifelong Leadership])
- Chollas Creek Restoration and Water Quality Enhancement Project Grant
- Model SUSMP requirements and the City's Storm Water Standards Manual
- City of San Diego Volunteer Canyon Watchers Program
- Watershed Urban Runoff Management Plans (WURMPS)
- Dog Beach Pollution Status Report
- City of San Diego Low Flow Diversion Program

5.4.2 Direct Interaction

In addition to those methods already described, the Copermittees continued to rely heavily on the interaction of staff with members of the public during their regular job duties. As described further in the Jurisdictional URMPs, municipal staff with program implementation responsibilities received targeted training to increase their understanding of urban runoff issues. Staff interaction with the general public provides an additional avenue for obtaining a direct feedback from the public. Feedback and interaction

were conducted during the discretionary permit review process, building permitting process, building inspections and public presentations and outreach campaigns.

This section provides a brief summary of the assessment of the water quality constituents of concern in the San Diego River watershed conducted by MEC for 2003 (See Section III.2 – Summary of San Diego River Watershed Constituents of Concern). (Note: the analysis was based on water quality monitoring data gathered between July 2002 and June 2003). To review the complete water quality assessment report, please refer to Section 6 of the *2002-2003 Urban Runoff Monitoring Report* prepared by MEC, which is posted on the Project Clean Water website (www.projectcleanwater.org/html/wurmp_san_diego_river.html). In addition, based on the 2003 assessment data and constituent of concern results, this section provides an updated assessment of the high priority water quality issues in the San Diego River watershed (an initial list of high priority and potential high priority issues was established in the San Diego River Watershed URMP).

1.0 Water Quality Assessment Program Implementation

Due to timing of monitoring activities, and the cost associated with the monitoring activities, the implementation of the water quality monitoring data program is occurring in logical phases. In most of the watersheds these activities formed the Core Monitoring Program for the 2001-2002 monitoring year and included the following activities:

- Mass Loading Station Monitoring;
- Urban Stream Bioassessment; and,
- Coastal Storm Drain Monitoring

During the initial phase, the Ambient Bay, Lagoon, and Coastal Receiving Water Monitoring program was in development. Further, the data from dry weather monitoring activities were not complete. During the assessment year covered by this report, data obtained from these two programs were incorporated into the complete assessment program.

During the upcoming assessment year (FY 2004), additional programs including the City of San Diego and Unified Port District's joint Toxic Hot Spots monitoring effort, and other special studies to address watershed-specific issues and data needs will be implemented, pending available funding.

During the final phase of the implementation of the assessment program, which will occur during the last year of the permit (assessment year 2004-2005), the monitoring programs will incorporate data obtained from citizen monitoring group efforts in the individual watersheds, such as the San Diego Stream Team (in the San Diego River Watershed) and the Home2Ocean Citizen's Monitoring Group (in the Santa Margarita Watershed), pending available funding.

The Copermittees believe that phased Implementation of these portions of the assessment program is the most efficient and economical strategy for coming to terms with the data needs in the watershed. Further, this phased implementation allows for refinement and development of consistency in data collection and management by the individual jurisdictions, without placing an undue financial strain on the smaller jurisdictions, while still achieving the purposes and goals of the assessment program outlined in the individual Watershed URMPs.

2.0 Summary of San Diego River Watershed Constituents of Concern

2.1 Interim Criteria for Evaluating Data

In preparing the 2002-2003 Urban Runoff Monitoring Report, the Copermittees requested that MEC conduct a comparison between constituents of concern identified in the Watershed Urban Runoff Management Plans and this year's water quality assessment. Because a uniform set of criteria was not applied in 2001-02 in the region, the methods used to determine constituents of concern in 2001-02 varied from watershed to watershed. The constituents of concern in 2002-03 have been determined using the interim criteria described in Table 6-4 of the 2002-2003 Urban Runoff Monitoring Report (shown as Table III-1 below). The interim constituents of concern criteria are anticipated to evolve as the program matures and the data set expands. The interim criteria takes into account the exceedances at the MLS and dry weather stations and classifies each condition of concern as high, medium or low frequency of occurrence in the watershed. For more detail on the criteria and methodology used to evaluate constituents of concern, please refer to Section 6 of the *2002-2003 Urban Runoff Monitoring Report* prepared by MEC (Attachment B).

Table III-1. Interim criteria for evaluating Mass Loading and Dry Weather Station Data.

COC Frequency of Occurrence	Criterion No.	Definition
High ♦♦♦	1	Mass loading station (MLS) tests results exceed water quality objectives (WQO) in greater or equal to 80% of samples.
	2	Six of the last consecutive storm samples at the MLS exceed WQO.
	3	Less than 80% and greater than or equal to 50% of the MLS samples exceed WQO and at least one dry weather sampling (DWS) exceedance.
	4	Less than 80% and greater than or equal to 50% of the MLS samples exceed WQO and a significant increasing trend is found.
Medium ♦♦	5	Less than 80% and greater than or equal to 50% of the MLS samples exceed WQO and no exceedances or data available for DWS.
	6	Less than 80% and greater than or equal to 50% of the MLS samples exceed WQO and one or more exceedances found in last 2 years of monitoring at the MLS (generally applies to historical datasets).
	7	Greater than 50% of the DWS samples have exceedances.
Low ♦	8	DWS exceedances in 10 to 50% of the samples.
	9	MLS exceedances found in 25% to less than or equal to 50% of the samples and at least one exceedances found in last 2 years at the MLS (with or without DWS exceedances).
	10	Greater than 50% of the MLS samples have exceedances and no exceedances in the last 2 years at the MLS.
Coastal Program	11	Persistent exceedances add one ♦ to bacteria determination (up to three ♦ maximum).

Note: Best professional judgment applies when unique situations arise (fewer samples at a site; sewage spills) and for toxicity once it is linked to a specific condition of concern.

2.2 Constituents of Concern Summary – 2003

For 2003, the interim constituent of concern criteria shown in Table III-1 were applied to the existing data set for San Diego River watershed yielding three constituents of concern with a high frequency of occurrence: fecal coliform, turbidity, and copper. Potential constituents of concern with a medium or low frequency of occurrence designation were: chlorpyrifos, bacterial indicators (total coliform and *Enterococcus*), and diazinon. Chlorpyrifos satisfies criterion number five making it a medium frequency potential constituent of concern as shown in Table III-2. Total coliform and *Enterococcus* satisfy criterion number eight making them a low frequency potential constituent of concern.

For the 2002 water quality assessment, constituents of concern were identified using the methodology presented in the San Diego River Watershed URMP, which relied more heavily on a qualitative process that considers watershed-specific conditions using the weight of the evidence approach as well as best professional judgment to interpret the relationships between exceedances, regulatory mechanisms, and beneficial uses. Table III-2 below shows the comparison for high, medium and low frequency of occurrence constituents of concern for both 2002 and 2003.

Table III-2. Summary of constituents of concern assessment comparison.

	Fecal Coliform	TDS	Diazinon	Chlorpyrifos	Turbidity	Total and dissolved Copper	pH/phosphate/ Dissolved Oxygen	Total Coliform/ *Enterococcus*
San Diego River 2002	♦♦	♦	♦♦♦				♦	♦♦
San Diego River 2003	♦♦♦		♦	♦♦	♦♦♦	♦♦♦		♦

The constituents of concern for the San Diego River watershed identified in 2003 were compared to last year's water quality assessment as shown in Table III-2. The following changes were noted for the San Diego River watershed in 2003 as compared to the previous year's assessment (2002).

- ✓ Fecal coliform, copper, chlorpyrifos and turbidity are more apparent as constituents of concern.
- ✓ Total coliform, *Enterococcus,* total dissolved solids, pH, phosphate, dissolved oxygen and diazinon are less apparent as constituents of concern.

Potential sources of the constituents of concern are identified in Table III-3. The Copermittees will continue to develop greater certainty of the sources of the constituents of concern as additional years of data are gathered.

Table III-3. Potential sources/causes of various constituents in the San Diego River Watershed.

Constituents of Concern:	Potential Sources / Activities:
Bacterial Indicators: Fecal Coliform, Total coliform, *Enterococcus*	Human sewage from failed septic systems, sewer spills or homeless encampments; wildlife-including birds, dogs, coyotes, raccoons, etc; domestic animals-including livestock and pets

Total dissolved solids	Fertilizers/pesticides, construction activities, groundwater, imported water.
Diazinon	Pesticide used residentially, agriculturally, and commercially.
Chlorpyrifos	Pesticide used residentially, agriculturally, and/or commercial.
Total suspended solids/Turbidity	Erosion, suspended sediment/solids, construction, sewage, eutrophication.
Toxic substances: Copper, Zinc	Automobiles or industrial wastes.
pH/phosphate/dissolved oxygen	Industrial waste, automobiles, sewage, fertilizers, eutrophication, hardening/concrete of creeks.

3.0 Water Quality Improvements or Degradation

The high priority water quality issues as well as other salient constituents of concern identified in this section are tracked and reassessed through the yearly assessment and reporting process.[3] The updated constituents of concern and high priority water quality issues lists, and the justification for how these lists were developed, follows.

3.1 Updated List of Constituents of Concern

The interim criteria for determining constituents of concern provided in Section III.2.1 above provides clear, often quantifiable criteria for identifying constituents of concern based on water quality monitoring data. However, the criteria does not allow for comparison of data over time (trend analysis). The Copermittees are currently developing a framework for evaluating data temporally, which will be used for the 2004 assessment. In the interim, constituents of concern that have been identified in either the 2002 or 2003 assessments will be included in the updated constituents of concern list. Therefore, based on a combined analysis of the 2002 and 2003 assessments, fecal coliform, diazinon, total dissolved solids, pH, phosphates, and dissolved oxygen remain constituents of concern, and copper and turbidity have been identified as new constituents of concern (See Table III-4).

3.2 Updated List of High Priority Water Quality Issues

As with the 2002 assessment provided in the San Diego River Watershed URMP, the 2003 assessment of high priority water quality issues provided in this section is determined by evaluating how constituents of concern impact beneficial uses. It is important to note that beneficial uses provide the context under which water quality issues are assessed, because it demonstrates that the Copermittees have appropriately focused the assessments on achieving the Watershed URMP program's goal: positively affecting water quality and beneficial uses (which does not necessarily mean reductions in constituents). Under this framework, a single constituent of concern (such as, high bacteria levels) may lead to the identification of a particular water quality issue (such as limited recreational opportunities), or one or more constituents of concern may be associated with the same beneficial use or various beneficial uses. These constituents are

[3] For more detail, the strategy employed by the Copermittees for determining the high priority water quality issues in the watershed is listed in Section 3.3.4 of the San Diego River Watershed URMP. For more detail on how constituents of concern are identified each year, see Section III.2.1, *Interim Criteria for Evaluating Data*.

then evaluated to determine actions to be implemented in an effort to improve or sustain water quality and beneficial uses.

The data set considered to date is too limited to draw strong conclusions about high priority water quality issues and associated actions. In addition, developing an effective list of activities that properly identifies and addresses significant water quality issues requires additional validation. Therefore, the high priority water quality issues identified in the San Diego River Watershed URMP remain the same in FY 2004: Limiting recreation opportunities in coastal waters due to potential for pathogens, and potential impact on municipal and domestic water supply. These high priority issues and the constituents of concern identified in the 2002 and 2003 watershed water quality assessments will continue to be tracked (See Table III-4).

The high priority water quality issues have not been changed to allow for the establishment of longer term temporal trends to verify constituents of concern and high priority water quality issues that have been identified in the watershed are not merely a short term variation in conditions. Equally important, with limited funding available to tackle high priority issues, it is crucial to allow enough time to properly implement and measure the success of the activities implemented to address the water quality issues. Therefore, the activities identified in the San Diego River Watershed URMP have not been changed (See Table III-4). The scheduled and implemented actions to address high priority water quality issues need to be implemented consistently over time to be effective. For example, education and outreach efforts will take time and repetition for a community to hear, understand and effect behavioral changes. Stopping or changing the educational messages on a frequent basis (due to changed priorities) would lead to confusion and ultimately less effective implementation results.

Table III-4. Summary of Evaluation of Stressors and/or Constituents of Concern – Year 2 (2003).

POTENTIAL WATER QUALITY ISSUE(S)	CONSTITUENTS OF CONCERN, AND/OR STRESSORS ADDRESSED	HIGH PRIORITY?	COMMENTS AND PROPOSED ACTIVITIES
Limiting recreation opportunities in coastal waters due to potential for pathogens	Bacterial Indicators (Fecal Coliform, Total Coliform, *Enterococcus*)	Yes	Bacteria has been identified by Copermittees and the Regional Board as a priority in the region. Bacteria is identified as a pollutant in both the existing and proposed 303(d) lists. Addressing water quality issues which limit recreational opportunities is of paramount importance to all San Diegans both as a quality of life issue and to ensure the long term economic health of the region. *Action(s): Bacterial Indicators Source Identification Project & Data Collection and Analysis*
Limitation to habitat value of water bodies	Diazinon	No	Diazinon levels were exceeded in the first season of testing at the mass loading station, but monitored in lower levels in 2003. All three of the data points collected in 2002 exceeded water quality standards, however, this is not enough evidence to define a course of action. The data collected in other watersheds indicates that Copermittees should consider addressing the use of pesticides in the region as an important component of proactive storm water runoff management activities. *Action(s): Integrated Pest Management Campaign*

POTENTIAL WATER QUALITY ISSUE(S)	CONSTITUENTS OF CONCERN, AND/OR STRESSORS ADDRESSED	HIGH PRIORITY?	COMMENTS AND PROPOSED ACTIVITIES
Limitation to habitat value of water bodies	Eutrophication	No	The 2002 303(d) listing includes Famosa Slough and Channel for eutrophication. Eutrophication is detrimental to aquatic habitat due to changes in the levels of oxygen as nutrient levels fluctuate. Determining the cause(s) or source(s) leading to eutrophication by collecting and analyzing existing data. *Action(s): Data Collection and Analysis*
Limitation to habitat value of water bodies	Benthic Community Degradation	No	Benthic communities serve as indicators of ecological trends and aid in the evaluation of the appropriateness of watershed programs. The current assessment indicates moderately to substantially impacted conditions to be used as a baseline from which trends can be developed and the impact of watershed programs assessed. *Action(s): Data Collection and Analysis*
Limiting habitat value of water bodies	Turbidity	No	Total suspended solids and turbidity were found at very low levels in the mass loading station (MLS) in 2002, and higher levels in 2003. Comprehensive evaluation of data and other existing information may address need to develop understanding of sedimentation sources and appropriate remedial actions. Action(s)**: SUSMP Implementation, Data Collection and Analysis
Limiting habitat value of water bodies	Copper	No	Copper was found at very low levels in the mass loading station (MLS) in 2002, and higher levels in 2003. Additional years of monitoring are needed to verify constituent of concern, determine sources and appropriate remedial actions. Action(s)**: Data Collection and Analysis
Potential Impact on Municipal and Domestic Water Supply.	Total Dissolved Solids, pH, Phosphorus, Dissolved Oxygen	Yes	Municipal and domestic water supplies can be compromised by a variety of factors that include urban runoff, imported water sources, naturally occurring salinity and minerals. Integrating efforts with other partners in order to develop a better understanding of the constituents of concern to water supply issues will assist in efforts to address this water quality issue in the San Diego region. *Action(s):* *Data Collection & Analysis* *Source Water Protection Guidelines Project*

***Although not required, the actions listed may address the corresponding constituents of concern.*

SECTION IV EFFECTIVENESS ASSESSMENT

The Watershed URMP Annual Report marks the conclusion of the Copermittees first reporting period (July 2002 to June 2003) under the Municipal Permit. As stated in the preceding chapters, the Copermittees implemented a number of new and expanded programs. An important aspect of these programs is ensuring their measurability and their nexus to changes in water quality.

This section provides an initial assessment of the implementation and effectiveness of the Copermittees Watershed URMP for the period of July 2002 and June 2003. However, such an assessment is limited by the short implementation period. Since the Municipal Permit provided a 365-day period for the development and implementation of most programs, many were not fully in place for the majority of this reporting period. Furthermore, the programs that were in place before the Municipal Permit was issued were not tracked because there was no prior need. Because the data identified for each component reflects the result of the program's first year implementation (in most cases, reflects only five months of implementation between February 2003 and June 2003), final conclusions regarding program effectiveness on the improvement if receiving water quality cannot be made at this time. However, to help direct program improvements for future years, this assessment does report limited findings drawn in part from the quantitative and qualitative data presented.

1.0 Effectiveness in Program Implementation

In order for a plan to be successful, clear goals and objectives must first be established, agreed to and implemented by the stakeholders. Otherwise, program activities and tasks are adopted without an understandable purpose or clear direction and trying to measure program effectiveness becomes an exercise in futility. The following is a reminder of the overall program goal of the Watershed URMP and implementing objectives.

TO POSITIVELY AFFECT THE WATER QUALITY OF THE WATERSHED WHILE BALANCING ECONOMIC, SOCIAL AND ENVIRONMENTAL CONSTRAINTS.

Objective #1: *Develop/expand methods to assess and improve water quality within the watershed* (Water Quality Activities);

Objective #2: *Integrate watershed principles into land use planning* (Land Use Planning Activities);

Objective #3: *Enhance public understanding of sources of water pollution within the watershed* (Educational Activities).

Objective #4: *Encourage and enhance stakeholder involvement within the watershed* (Public Participation Activities).

Activities identified in the watershed program are categorized pursuant to these objectives.

Standard performance indicators for achieving objectives and determining whether activities are effective typically include percentage changes in water quality factors (e.g., reduction or increase in pollutant loads). Unfortunately, water quality information for the entire watershed is still not readily available, and not expected to be available for several years. As such, the stakeholders cannot establish a water quality baseline to measure the true effectiveness of these programs and will never really know whether their programs are positively affecting the water quality of the watershed until such as baseline is developed.

As stated in the Watershed URMP, in order to measure the effectiveness of the objectives, an inference must be made that completion or expansion of the activities and tasks identified for each respective objective would either indirectly or directly benefit the water quality within the watershed. However, because of the need to establish more data spatially and temporally, strong connections between program effectiveness and water quality should not be made. So, in the initial years of program implementation, Copermittees will focus program assessment strategies on indirect measures, with increased reliance on direct water quality measures over time. As we learn more about measuring productivity and effectiveness as well as develop and implement water quality programs, the Copermittees will be better able to produce more accurate and reliable effectiveness measures.

The sections below present the results of the quantitative (where available) assessment of the activities conducted, categorized by the above referenced objectives. Each assessment is followed with a discussion of program strengths (areas where the Copermittees have excelled in program implementation), weaknesses or undeveloped areas (areas where the Copermittees did not see favorable results in program implementation or identified the need for new/changed activities), and finally, recommended areas for program improvement based upon the assessment.

1.1 Objective #1: Water Quality Activities

The obvious purpose of a jurisdictional or watershed storm water program is ultimately to improve the quality of the water in the watershed. In order to accomplish this, we must expand upon existing methods, or develop new methods, to improve our understanding of the processes and issues that affect receiving waters, allowing stakeholders and the Copermittees to validate water quality concerns, identify constituents of concern, and move forward with meeting the water quality objectives of this program.

As indicated above, standard performance indicators for achieving objectives and determining whether water quality activities are effective typically include percentage changes in water quality factors (e.g., reduction or increase in pollutant loads). Unfortunately, water quality information for the entire watershed is still not readily available, nor expected to be available for several years. As such, the stakeholders cannot establish a water quality baseline to measure the true effectiveness of these programs and will never really know whether their programs are positively affecting the water quality of the watershed until such as baseline is developed. Therefore, in order to measure the effectiveness of the objectives, an inference must be made that completion or expansion of the activities and tasks identified for each respective objective would indirectly (or directly in rare cases) impact the water quality within the watershed.

1.1.1 Program Strengths

During the first five months of program implementation in FY 2003, the Copermittees in the San Diego River watershed implemented (or began implementing according schedule) the planned actions identified in

the San Diego River Watershed URMP. Specifically, the San Diego River Watershed Copermittees began initial discussions regarding the Regional Integrated Pest Control Management Campaign (Activity 4.2.2), and began discussions for improving the methods for both collecting and analyzing water quality monitoring data (Activity 4.2.3). The results of the monitoring and analysis discussions resulted in the improved watershed assessment strategy employed in the 2003 assessment. In addition, the City of Santee continued planning for the Forrester Creek Improvement Project (discussed in Section 4.3 of the San Diego River Watershed URMP). Lastly, the City of San Diego continued implementation of the Bacterial Indicators Source Identification Project (Activity 4.2.1), and the City of San Diego's Water Department continued to develop the Source Water Protection Guidelines Project (Activity 4.2.4).

Expanded implementation of a regional water quality monitoring and assessment program by the Copermittees has begun, in order to validate the constituents of concern and development of a baseline assessment of water quality issues regionally, and on a watershed-by-watershed basis. This program is designed to allow for the integration of diverse data sets, eventually allowing a relatively clear view of the water quality issues within each watershed. Further, the expanded program allows for sufficient flexibility to implement watershed-specific studies addressing watershed-specific issues, without compromising regional goals and/or programs.

Historically, individual jurisdictions implemented monitoring programs with slight variations of collection methods and/or dataset composition. During the 2003 assessment year, the Copermittee monitoring workgroup standardized dry weather monitoring programs and coastal storm drain monitoring programs. Standardization of this and other elements of the program facilitate the long-term integration of data from multiple jurisdictional programs, as well as facilitate assessment of new data on an annual basis.

1.1.2 Program Improvement Areas

Direct measures are the most definitive way of determining a program's overall effectiveness. Unfortunately, such direct measures (e.g. a watershed water quality baseline) are not readily available on a watershed scale and not anticipated to be available for several years. One of the most important goals of the program is the development of the baseline assessment through the implementation of the complete water quality monitoring program. As discussed in Section III above, this full implementation is anticipated by the end of the current Municipal Permit period. A complete watershed assessment using the current data, as well as expanded data is underway. Standardization of assessment methodologies for each element of the monitoring program will facilitate the development of this baseline.

A second area of improvement for the program is the development of a standard and guidance document for the maintenance and future integration of non-permit required data sets into water quality assessments. This will allow for integration of data obtained from stakeholders (through groups such as the San Diego Stream Team or the Home2Ocean Citizen's sampling programs) into jurisdictional assessments.

1.1.3 Recommended Program Improvements[4]

- As discussed in detail in Section III – Water Quality Assessment, plans are being developed to prepare a Watershed URMP Data Analysis Framework for Water Quality Assessment. The

[4] Copermittees will complete these activities contingent upon adequate funding in future years.

objective of the exercise is to create a document that will provide a consistent and scientific approach to conducting watershed water quality assessments. This document will provide a framework for the water quality assessment and water quality problem prioritization.

- In order to effectively measure the water quality of the watershed, additional monitoring stations are needed in the central portions of the watershed and headwaters. As funding becomes available, the Copermittees would like to increase the number of monitoring stations throughout the watershed in order to more accurately measure water quality. Grant proposals have been submitted to the state and regional board to fund such a regional monitoring program. For more information on this grant proposal, please refer to Section II of the Unified Watershed URMP.

1.2 Objective #2: Land Use Planning

Developed areas vastly increase urban runoff volumes and the pollutant qualities carried in the runoff. However, land use professionals (e.g. municipal, environmental, community planners, engineers, architects, etc.) can help mitigate such impacts through efficient and effective use of design tools and techniques. Through the use of regulations (e.g. general plan, zoning, design manuals, development policies, etc.) site design (clustering, street design, parking lot layout, etc.) and structural treatment devices (filters, detention/retention basins, etc.), development projects can be constructed to reduce pollutant loads before entering neighboring water bodies.

Efforts are being made to strengthen and expand jurisdictional programs to not only address surface storm water quality resulting from new and redevelopment, but to also look at how these impacts affect down stream resources on a watershed level.

1.2.1 Program Strengths

Although adopted independently, jurisdictional land use policies and procedures work in concert with one another, collectively striving towards the betterment of the water quality in the watershed. The jurisdictions have effectively implemented a Memorandum of Understanding, which establishes guidelines for the inter-jurisdictional notification of land use and development actions that are being considered. Also, the jurisdictions have, or are in the process of amending their General Plans to include language on watershed preservation and water quality protection. Lastly, the Standard Urban Storm water Mitigation Plan (SUSMP) is a model program adopted (in some form or another) by all the jurisdictions to address water quality impacts resulting from new and redevelopment projects. Discussion regarding the effectiveness of the SUSMP programs is discussed in the Jurisdictional URMPs.

1.2.2 Program Improvement Areas

To date, jurisdictional and project level planning tools have been underutilized since storm water management has largely been viewed as an engineering issue. As a result, many site design solutions rely largely on structural treatment controls like detention basins and mechanical treatment devices, which can be both expensive and maintenance intensive. In most cases, it is easier and cheaper to keep pollutants out of storm water by designing the pollutant source out of the project while simultaneously preserving the site's natural filtration capacity. There needs to be a focus on the strategies that jurisdictions can consider

when implementing regulations, policies and guidelines that require site designers to incorporate site design BMPs in development projects as opposed to structural BMPs.

1.2.3 Recommended Program Improvements[5]

- Complete development of a watershed planning reference manual for land use professionals use during project development and long-range planning activities.

- Develop and implement a mobile seminar that is designed to introduce the planner's manual to working planners and provide a general overview of the need for planning on a watershed level in order to protect water resources as well as a description of the site design tools that are available.

1.3 Objective #3: Educational Activities

To allow Copermittees to measure the effectiveness of education efforts, the Copermittees have started the process of developing and coordinating consistent questions for public awareness surveys. Ensuring consistency in watershed questions will allow Copermittees to individually or collectively conduct comparable ("apples to apples") surveys throughout each watershed. The Copermittee's goal with these surveys is to develop effective public education programs that are founded upon community-based data that will generate locally tailored strategies. These surveys will measure baseline knowledge of pollution prevention/source reduction activities in the watershed communities.

The Copermittees chose a scientifically valid telephone random sample survey (stratified by watershed) with the following objectives:

- Obtain scientifically reliable and sufficiently robust results to establish a baseline level of knowledge among residents of the watersheds;

- Determine the extent to which behaviors have been altered among activities that are known to cause water pollution and the cause of such behavioral changes;

- Obtain demographic data about the populations of the watersheds for use in descriptive analysis and cross tabulations of data that will result in optimally targeted and tailored public awareness programs.

1.3.1 Program Strengths

During the first five months of program implementation in FY 2003, the Copermittees in the San Diego River Watershed implemented (or began implementing according schedule) the planned education activities identified in the San Diego River Watershed URMP. The City of San Diego has conducted public awareness surveys of water quality and watershed issues within the City's jurisdiction in each of the last two years. Although the results were separated by watershed within the City's limits, the survey, entitled "City of San Diego Storm Water Pollution Prevention Program 2003 Follow-Up Survey of City Residents," was not watershed-wide except in the Mission Bay and Coastal La Jolla watershed (refer to the City's

[5] Copermittees will complete these activities contingent upon adequate funding in future years.

Jurisdictional URMP Annual Report for more information on these surveys). The Copermittees in the San Diego River Watershed (and select Copermittees in other parts of the region) have continued to consider the City of San Diego's survey during the development of the coordinated watershed awareness survey discussed in Section 1.3, above.

1.3.2 Program Improvement Areas

Watershed surveys not only determine whether the educational message is being heard and understood, but surveys help Copermittees target educational and outreach concepts to meet the needs of different sub-regions and associated land uses within the watershed. Although surveys were completed in some portions of the watershed, watershed-wide surveys were not completed during this reporting period, but should be finalized sometime in winter 2003/04. Ensuring consistency in watershed questions will allow Copermittees to individually or collectively conduct comparable surveys throughout each watershed. The Copermittees' goal with these surveys is to develop effective public education programs that are founded upon community-based data that will generate locally tailored strategies. These surveys will measure baseline knowledge of pollution prevention/source reduction activities in the watershed communities.

The results and Watershed URMP activity changes/modifications resulting from the survey (if any) will be incorporated into next year's Annual Report.

1.3.3 Recommended Program Improvements

- In future years, the Copermittees will coordinate to establish consistent public awareness survey questions on watershed issues so that consistent, comparable surveys can be conducted throughout the watershed. These survey questions will be completed prior to the FY 2005 survey, pending available funding.

1.4 Objective #4: Public Participation Activities

While participating jurisdictions aim to improve coordination among their own agencies, the watershed approach calls upon these agencies to engage diverse stakeholders in this process. Further, the participating municipalities recognize that no single agency has the capacity to address water quality issues on its own and broad partnerships are essential to positively affect the water resources in the watershed. It is only through a collaborative approach that we will develop a better understanding of these issues and processes affecting water quality in our watersheds and subsequently select and address priorities.

1.4.1 Program Strengths

Storm water pollution is an issue that affects, and is affected by, every person living or working in the watershed. The watershed Copermittees recognize this interdependence, and have been effective in providing, soliciting and allowing public participation in program activities.

1.4.2 Program Improvement Areas

As the program matures, the Copermittees intend to maximize the number and quality of opportunities for the public to participate.

1.4.3 Recommended Program Improvements

- The Copermittees are always looking to improve public participation mechanisms by adjusting and expanding the types of opportunities the public has had to participate in the program. In future years, the Copermittees will be looking to add new participation opportunities through the parallel programs such as the Watershed Management Plans.

In summary, the most important measure of the Watershed URMP effectiveness over this first reporting period is the existence and quality of these new and improved programs. As the Copermittees continue to learn from their experiences over time, these programs will be the means by which many lasting improvements will be made to water quality in the region. The Copermittees believe that the programs they have put into place are on par with many other programs in the nation. The Copermittees still have much to learn, but their efforts to date are an important success and a clear demonstration of program effectiveness.

2.0 Amendments to the Assessment Program

To ensure the long-term viability and success of our programs, we must confront the complicated issue of assessing the implementation of overlapping municipal storm water programs; specifically, the Jurisdictional and Watershed URMP programs. The Copermittees are currently in the process of retooling the methodology for assessing the components of the urban runoff management programs to address the assessment program's limitations.

In December 2002, a workgroup was created to collaborate on a Copermittee response to the long-term assessment strategy issue for the Jurisdictional URMPs. On April 15, 2003, the workgroup developed a scope of work and outline, which was shared with the RWQCB on June 15, 2003. The general approach to the proposed program is summarized below.

- ✓ Use a "model" approach similar to the model guidance documents previously developed in 2001 (i.e., the completed assessment document should provide steps and instructions that Copermittees can follow to conduct their assessments);
- ✓ Maximize the integration of Jurisdictional URMP and Watershed URMP assessment strategies to avoid duplication and ensure consistency;
- ✓ Focus assessment on the highest priority water quality issues / problems;
- ✓ Focus on assessing elements with the broadest applicability to all Copermittees (e.g., do not emphasize coastal and near-coastal monitoring data since it is not applicable to inland cities);
- ✓ Use year 4 of the Permit cycle (and every 5th year thereafter) as a baseline and regular interval for conducting long-term assessments;
- ✓ Consider building on or updating the MEC Future Monitoring Recommendations report;

- ✓ Consider supplementing efforts with “model” basin-specific studies (control vs. experimental) and/or BMP-specific effectiveness trials;
- ✓ Project expected changes in water quality given existing and future levels of development, land uses, etc. Use these projected trends as a "moving target" to assess improvement and/or decline in water quality;
- ✓ Focus on the constituents of concern that each program activity is intended to mitigate;
- ✓ Re-visit the common set of direct and indirect reporting measures initially established in the Jurisdictional URMPs; and
- ✓ Adequately consider costs in assessing the effectiveness (and therefore the practicability) of control programs and measures.

The Jurisdictional URMP assessment strategy, which includes general strategies to better assess the Watershed URMP programs, will be submitted to the RWQCB during the FY 2004 reporting period (September/October 2003) and implemented in FY 2005. Since the strategy itself was not fully developed by June 30, 2003, the program effectiveness assessment will not be discussed in this report, but will be integrated and discussed in the Watershed URMP Annual Report for FY 2005.

As stated in the Watershed URMP, updates and changes to this program would be submitted as part of the Annual Report and would include the annual reevaluation of high priority and other potential water quality issues, description of any changes to the priority listing, and the inclusion of any revisions to the list of activities. The following sections cover these proposed changes to program priorities and activities as well as the Copermittees closing comments on this reporting period.

1.0 Proposed Amendments to the San Diego River Watershed URMP

Based upon the updated water quality data discussed on Section III of the Annual Report and the activity effectiveness assessment completed in Section IV of the Annual Report, the Copermittees propose the following changes/revisions to the Watershed URMP program.

1.1 Proposed Changes to Water Quality Priorities

Although data from the 2003 water quality assessment for the watershed suggests fecal coliform, copper, chlorpyrifos and turbidity are more apparent as constituents of concern, and total coliform, Enterococcus, total dissolved solids, pH, phosphate, dissolved oxygen and diazinon are less apparent as constituents of concern than in 2002, the high priority water quality issues in the San Diego River Watershed URMP remain the same in FY 2004: limiting recreational opportunities in coastal waters due to potential for pathogens, and potential impact on municipal and domestic water supply. The high priority water quality issues have not been changed to allow for the establishment of longer term temporal trends to verify constituents of concern and high priority water quality issues that have been identified in the watershed are not merely a short term variation in conditions.

1.2 Proposed Changes to Activities

Equally important to gathering data, with limited funding available to tackle high priority issues, it is crucial to allow enough time to properly implement activities and measure the success of those actions. The high priority water quality issues and associated activities have not been adjusted because scheduled and implemented actions to address high priority water quality issues need to be implemented consistently over time to be effective. For example, education and outreach efforts will take time and repetition for a community to hear, understand and effect behavioral changes. Stopping or changing the educational messages on a frequent basis (due to changed priorities) would lead to confusion and ultimately less effective implementation results.

2.0 Copermittee Closing Comments

Between July 2002 and June 2003, the Copermittees within the San Diego River watershed made progress in developing and implementing programs aimed at improving surface storm water quality in the watershed. Most significantly, during the first five months of implementation (February to June, 2003), the San Diego River Watershed Copermittees successfully implemented the FY 2003 activities identified in the San Diego River Watershed URMP. A few of these highlights are found below:

- *The San Diego River Watershed URMP*. In January 2003, the Copermittees successfully developed and initiated the implementation of a watershed-based program that addresses surface storm water quality for the San Diego River watershed. The work product is a compilation of assessments, activities and strategies the Copermittees and stakeholders plan to undertake over the remaining life of the Municipal Permit.

- *San Diego River Restoration Project.* The San Diego River Restoration Project is a partnership between the U.S. Bureau of Reclamation, the City of Sa Diego and the San Diego river Park foundation. The project began when Congresswoman Susan Davis included funding for the project in a federal appropriation bill for the U.S. Bureau of Reclamation. A feasibility study will be conducted fro restoring natural function to the river and the drainages feeding into the river. The goal is to use vegetation to help clean up the river to improve its beneficial uses including recreation and wildlife. The initial focus of the project its the Mission Valley area of the San Diego River Watershed.

- Land Use Professional's Reference Manual. The County of San Diego, in cooperation with the City of San Diego, is developing a land use professional's reference manual, which focuses on offering site design solutions (as opposed to structural treatment devises) as potentially viable permanent best management practices for new development and redevelopment projects. The manual is structured to assist land use professionals (e.g. municipal, environmental or community planners, engineers, architects, site-designers) in identifying the following:

  - Major types of storm water pollution;
  - Possible sources of pollution;
  - Adverse impacts such pollutants have on the environment;
  - Description of the San Diego River watershed as well as other watersheds in San Diego County;
  - Pollution problems found within the watersheds; and,
  - Listings of the site design and programmatic tools land use professionals have at their disposal to address water quality issues at the planning level.

- Watershed Surveys. The Copermittees have started the process of developing a survey for the San Diego River watershed in order to establish a baseline of watershed understanding. Watershed surveys not only determine whether the educational message is being heard and understood, but surveys help Copermittees focus educational and outreach concepts in order to meet the needs of different sub-regions and associated land uses within the watershed. The survey results will be detailed in the FY 2004 Annual Report.

The City of San Diego, as lead copermittee, and the County of San Diego, were instrumental in implementing many of the water quality and watershed protection activities in the San Diego River watershed, as discussed in the previous sections of this report. Some notable accomplishments from other participating jurisdictions in the watershed are summarized below.

- City of La Mesa: Notable Accomplishments.
  - *Pollution Prevention Education Events* – La Mesa contracted with Solana Recyclers to conduct three outreach events at La Mesa's *Thursday Night Car Shows.* Held each summer between June and August, the shows attract thousands of car enthusiasts of all ages. A booth was set up to provide educational materials on storm water pollution, household hazardous waste and used oil recycling. Solana staff distributed a special storm water edition of La Mesa's Newsletter containing comprehensive information about preventing storm water pollution and pictures illustrating that what drains from the City feeds into the San Diego River and finally enters the ocean at Dog Beach. Outreach events were held on June 19, July 17, and August 14, 2003. As car enthusiasts often work on their own vehicles, used oil recycling containers and funnels were distributed to promote the proper management and recycling of used motor oil. The events reached approximately 3,000 car enthusiasts.

- City of Santee: Notable Accomplishments.
  - *Forester Creek Improvement Project* – The Forester Creek Improvement Project involves creation of a widened, naturalized, vegetated channel to expand riparian habitat and wetlands habitat, and increase flood control capacity in a 1.2 mile reach of Forester Creek through the City of Santee. On September 25, 2003, the City of Santee was awarded the Grand Prize for Outstanding Environmental Solution by the San Diego Chapter of the Association of Environmental Professionals in recognition of its exemplary efforts in the design of the Project.

    The restoration of Forester Creek was developed to solve problems within its reach through Santee and its contribution to water quality problems in the greater San Diego River Watershed. Adverse conditions in Forester Creek include water quality impairments, habitat loss, and degraded natural stream function. Through identifying and addressing each of these needs, the City of Santee established the following goals to improve water quality and enhance habitat in Forester Creek and the San Diego River:

    - ✓ Control water velocity and volume to minimize erosion and sedimentation
    - ✓ Protect and enhance riparian and wetland habitat
    - ✓ Reduce non-point source discharges to the San Diego River
    - ✓ Restore beneficial uses and protect surface water quality in Forester Creek and the San Diego River Watershed
    - ✓ Provide recreational opportunities for residents and promote stewardship of Forester Creek and the San Diego River Watershed.
    - ✓ Preserve in a naturalized state the last viable reach of Forester Creek

  - The City of Santee developed its Storm Water Pollution Prevention Plan website in an effort to promote water quality in local water bodies as well as on a watershed level. The San Diego River and its protection is the central theme maintained throughout the information made available on the site. Information provided about the San Diego River is made available in an effort to support the environmental health of the watershed, and to promote

the significance of the San Diego River in the City of Santee. A link to the San Diego River Watershed URMP is also available on the web site.

Above all, the San Diego River Watershed URMP and Annual Reports should be considered part of overall program development. The Copermittees have responded well to meet the challenges of implementing new and aggressive Municipal Permit requirements in a very short period of time. It is also recognized that improvement and refinement is an important part of all program areas and the Watershed URMPs will need to be improved over the long term as the Copermittees continue to develop a better understanding of the complex issues affecting the San Diego River watershed. During the development and initial implementation of this program, the Copermittees have identified a few lessons learned over the past year that deserve mentioning.

Most importantly, Copermittees are utilizing a variety of revenue sources to fund program costs that are significantly increased over previous years. At a time when continued general fund allocations are uncertain if not declining, and Proposition 218 restrictions significantly restrict the establishment of new funding sources, the ability to pay for programs threatens to diminish the practicability of effectively implementing them. Copermittees have worked diligently to identify adequate and stable revenue sources for these new programs, but have not found simple answers. Controlling program costs and establishing stable program funding must remain a key focus for the future.

In addition, it should be stressed that individual activities and efforts are best addressed at regional, watershed, or local scales, depending on the activity. The Municipal Permit establishes important obligations at all three levels, but provides little direction on how to pursue them. Avoiding redundancy and taking advantage of the strengths of each of the management scales should be a key focus. This need for efficient program implementation rings even more clear given the funding limitations all jurisdictions face.

Lastly, the region should continue to strive for more efficient collaboration among watershed stakeholders and efforts. For example, the stakeholder effort to develop the San Diego River Watershed Management Plan has formed a working group who will be working to achieve many common objectives shared by the San Diego River Watershed URMP stakeholders. To maximize our water quality protection and improvement efforts, these groups should collaborate to minimize any unnecessary duplication and leverage each other's efforts.

In summary, a number of important challenges have arisen during the implementation of this revised Municipal Permit. While the Copermittees have generally responded well to meet them, some requirements are not easily addressed. Continued collaboration and thoughtful coordination and integration between jurisdictional and watershed programs are keys to the development of quality programs that are cost-effective and responsive to the needs of our customers. Only time and continued implementation will tell whether or not the programs established pursuant to this Municipal Permit will meet the standards of water quality improvement and cost-effectiveness that together define practicability. Increased cooperation between Copermittees and the RWQCB will be necessary as we continue to move our programs forward. In some instances, the issues confronting us may be within the ability of Copermittees to resolve. In other cases, more innovative approaches, including Municipal Permit amendments, may ultimately be required. Keeping these lines of communication open is crucial to our long-term success.

APPENDIX A

A. Signed Certification Statements