

# San Diego Bay Watershed Urban Runoff Management Program 2003-2004 Annual Report



A Collaborative Effort of:

City of Chula Vista  
City of Coronado  
City of Imperial Beach  
City of La Mesa  
City of Lemon Grove  
City of National City  
City of San Diego  
County of San Diego  
Port of San Diego  
San Diego County Regional Airport Authority

January 2005

**San Diego Bay Watershed Urban Runoff Management Program 2003-2004 Annual Report  
Statement of Certification**

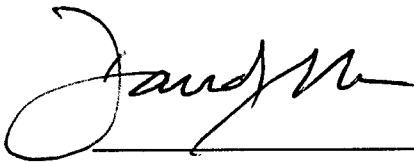
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January 2005

**STATEMENT OF CERTIFICATION**

San Diego Bay Watershed Urban Runoff Management Program Document

I certify under penalty of law that the San Diego Bay Watershed Urban Runoff Management Program Annual Report for 2003-2004 was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.



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DAVID MERK

Director

Environmental Services Department

San Diego Unified Port District

***San Diego Bay Watershed Urban Runoff Management Program 2003-2004 Annual Report  
Statement of Certification***

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

**Acknowledgements**

The development and production of this Watershed Urban Runoff Management Program Document for the San Diego Bay Watershed are the result of the talents and experience of numerous individuals. Their contributions and insight made this document a collective success for the environment and for the watershed. The primary authors of the text include:

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The San Diego Bay Watershed Copermittees also wish to recognize the public for their continued expressed concern for the protection and conservation of the San Diego Bay Watershed's environmental resources.

**San Diego Bay Watershed Urban Runoff Management Program 2003-2004 Annual Report**  
**Table of Contents**

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Executive Summary .....	7
Section 1: Introduction.....	12
1.0 Background .....	12
1.1 Program Approach .....	12
1.2 Municipal Permit Requirements.....	13
1.3 Organization and Content of the Report.....	14
Section 2: Water Quality Assessment .....	16
2.0 Introduction.....	16
2.1 San Diego Bay Watershed Data.....	16
2.2 San Diego Bay Watershed Assessment.....	17
2.3 Water Quality Improvements and Degradations.....	23
Section 3: Implementation .....	29
3.0 Introduction.....	29
1.1 Water Quality Activities .....	30
3.2 Land Use Planning Activities .....	40
3.3 Educational Activities .....	48
3.4 Public Participation Activities.....	57
Section 4: Effectiveness Assessment.....	64
4.0 Introduction.....	64
4.1 Programmatic Assessment .....	64
4.2 Activity Assessment .....	65
Section 5: Conclusions & Recommendations.....	70
5.0 Introduction.....	70
5.1 Proposed Changes to Water Quality Priorities.....	70
5.2 Recommended Changes to Activities.....	70
5.3 Conclusions.....	72
Section 6: References: .....	74

***San Diego Bay Watershed Urban Runoff Management Program 2003-2004 Annual Report  
Acronyms and Abbreviations***

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ACRONYMS AND ABBREVIATIONS

303(d)	Section of the Clean Water Act
ABLM	Ambient Bay and Lagoon Monitoring Program
APWA	American Public Works Association
BMP	Best Management Practices
BOD	Biologic Oxygen Demand
BRI	Benthic Response Index
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
COC	Constituent of Concern
COD	Chemical Oxygen Demand
Copermittees	The 18 cities within San Diego County, the County of San Diego, the Port of San Diego, and the San Diego County Regional Airport Authority
CWA	Clean Water Act
DEH	County of San Diego Department of Environmental Health
ERL	Effects Range Low
ERM	Effects Range Median
GIS	Geographic Information Systems
HHW	Household Hazardous Waste
IBI	Index of Broth Integrity
IC/ID	Illicit Connection / Illicit Discharge
IPM	Integrated Pest Management
JEPA	Joint Exercise of Powers Agreement
MCTIP	Mid-City Transit Interchanges Project
MLS	Mass Loading Station
MOU	Memorandum of Understanding
MS4	Municipal Separate Storm Sewer System
MSCP	Multiple Species Conservation Plan
Municipal Permit	San Diego Regional Water Quality Control Board Order 2001-01
NPDES	National Pollution Discharge Elimination System
ORWMP	Otay River Watershed Management Plan
PAH	Polycyclic Aromatic Hydrocarbon
PCEPI	Paradise Creek Education Park, Inc.
PCW	Project Clean Water
QAPP	Quality Assurance Project Plan
RBI	Relative Benthic Index
RCD	Resource Conservation District of Greater San Diego County
RHMP	Regional Harbor Monitoring Program
RWQCB	Regional Water Quality Control Board
SAMP	Special Area Management Plan
SANDAG	San Diego Association of Governments

***San Diego Bay Watershed Urban Runoff Management Program 2003-2004 Annual Report  
Acronyms and Abbreviations***

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San Diego Bay Copermittees	The County of San Diego, the Port, and the Cities of Chula Vista, Coronado, Imperial Beach, La Mesa, National City, San Diego, and SDCRAA
San Diego Bay Workgroup	The San Diego Bay Copermittees and other watershed stakeholders
SCCWRP	Southern California Coastal Water Research Project
SDCRAA	San Diego County Regional Airport Authority
SIYB	Shelter Island Yacht Basin
SISP	Shelter Island Shoreline Park
SUSMP	Standard Urban Stormwater Management Plan
TDS	Total Dissolved Solids
TIE	Toxicity Identification Evaluation
TMDL	Total Maximum Daily Load
TOC	Total Organic Carbon
TSS	Total Suspended Solids
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
URMP	Urban Runoff Management Program
Watershed URMP	Watershed Urban Runoff Management Program

## **Executive Summary**

The County of San Diego, Port of San Diego, San Diego County Regional Airport Authority, and the cities of Chula Vista, Coronado, Imperial Beach, La Mesa, Lemon Grove, National City, and San Diego (San Diego Bay Copermittees) are continuing their efforts to develop and implement watershed-based programs in the San Diego Bay Watershed. Programs and activities developed by the San Diego Bay Copermittees to meet requirements of the Municipal Stormwater Permit Order Number 2001-01 (Municipal Permit) are outlined in the San Diego Bay Watershed Urban Runoff Management Program (San Diego Bay Watershed URMP). This Annual Report represents the Copermittees' efforts during the past fiscal year to develop and implement the San Diego Bay Watershed URMP.

The San Diego Bay Copermittees successfully completed the watershed-based requirements of the Municipal Permit through the continuation of regularly scheduled watershed workgroup meetings and the development and implementation of water quality activities, innovative education programs, and land use planning mechanisms. Through these programs and others, the Copermittees provided many opportunities for public participation and greatly encouraged stakeholder input. The intent of these programs is to improve surface stormwater quality in the watershed and increase public awareness about watershed issues. Because of the success of programs implemented during 2003-2004, the San Diego Bay Watershed URMP achieved the following objectives:

- Continuation of the comprehensive water quality assessment program, including long-term trend analyses where appropriate.
- An evaluation of the progress made on the long-term and short-term activities identified in the Watershed URMP.
- Continued refinement of the watershed program(s).
- Continued progress toward meeting Watershed URMP goals and objectives.

The following summaries describe some of the achievements of the San Diego Bay Copermittees, as well as modifications in the way information was assessed and reported during 2003-2004. Information on all program activities conducted by Copermittees is outlined in Section 1 of this report and described in subsequent sections.

### Watershed Assessment

One of the most notable collaborative efforts conducted by the San Diego Bay Copermittees was the continued implementation of the watershed assessment program. The intent of this program is to develop and implement water quality assessment strategies that will allow determination of water quality problems in the San Diego Bay Watershed. Information from various monitoring programs is used to identify water quality problems within each of the three sub-watersheds of the San Diego Bay Watershed. This 2003-2004 watershed assessment includes data from dry weather and coastal monitoring, mass loading stations (MLS), rapid stream bioassessments, ambient bay and lagoon monitoring (ABLM), and citizen monitoring. This information is then used to guide management decisions within each jurisdiction and the San Diego Bay Watershed as a whole.

During 2003-2004, total and fecal coliform bacteria, Enterococcus, turbidity, diazinon, total copper, and total zinc were identified as high priority constituents of concern (COC) within the Pueblo San Diego sub-watershed. During 2003-2004, there were no pollutants identified as high priority COC within the Sweetwater sub-watershed, and adequate data were not available from the Otay River sub-watershed to properly evaluate COC. Land use, MS4 conveyance system types, and other characteristics unique to each of the sub-watersheds create different water quality problems in each area. As such, determining high priority COC for the entire San Diego Bay Watershed is challenging. Section 2 of this report summarizes data collection and assessment efforts within the watershed. The Copermittees are doing their best to collect and interpret pertinent data, assess water quality changes, and improve conditions in the watershed through thoughtful and appropriate management decisions.

### Water Quality Activities

- *San Diego Bay Watershed URMP Workgroup*

Implementation of watershed programs is challenging in the San Diego region because watershed and jurisdictional boundaries do not coincide. In addition, Copermittees do not have money designated specifically for watershed projects. As such, watershed programs must be incorporated into regional and jurisdictional programs. One way that the San Diego Bay Copermittees have addressed these challenges is through the development and implementation of the San Diego Bay Watershed URMP Workgroup. During 2003-2004, workgroup meetings provided Copermittees the opportunity to meet and discuss progress on current activities as well as results of past activities. Copermittees were able to utilize information from the Watershed URMP meetings to influence and/or direct individual jurisdictional efforts. Through this format, Copermittee participation in the Watershed URMP Workgroup facilitated the development and implementation of many jurisdictional programs.

- *Shelter Island Shoreline Park Bacteria Study*

Three San Diego Bay beaches are identified on the 2002 Clean Water Act Section 303(d) List. One site, Shelter Island Shoreline Park (SISP), continuously exceeded water quality standards for both Enterococcus and fecal coliform from August 2001 through December 2002. During 2002-2003, the Port initiated a bacteria study at SISP; work on this project was concluded during the 2003-2004 reporting period. The purpose of this study was to identify (and if possible, eliminate) the bacteria sources at SISP and to provide some insight into the physical characteristics and tidal influences present on the beach. Although results from this study were inconclusive, the study design implemented for this project may be used in the future to examine the causes for other beach closures within the San Diego Bay Watershed.

- *Lecture Series*

A lecture series entitled *San Diego Bay: A Look Beneath the Surface* was created and implemented during 2003-2004 to increase awareness of environmental issues affecting San Diego Bay. A series of 14 lectures was presented bi-weekly from January through April 2004. Lectures were held at the San Diego Natural History Museum and were presented by local academic researchers, civil servants, and environmental activists. The lecture series was very successful; more than 800 people attended the seven nights of presentations.

- *Water Quality Grants*

During 2003-2004, the San Diego Bay Copermittees spent considerable effort applying for funding through various watershed grants. Although the Copermittees have been successful in receiving several grants, substantial effort has been spent developing projects that have not been funded, such as the *Watershed Stewards Project*. Even though the pursuit of grant funding requires considerable time and effort, the Copermittees believe this is an important process because the money provided by these grants enables watershed projects to be conducted that would not occur without supplemental funding. Developing and applying for grant-funded projects also provides opportunities for Copermittees to collaborate with other organizations within the watershed, such as environmental or citizen groups. The San Diego Bay Copermittees currently are involved with the following projects that are at least partially grant funded: the Chollas Creek Enhancement Plan, the Regional Integrated Pest Management (IPM) Campaign – PRISM Grant, and the Common Grounds Grant. Each of these projects is discussed in greater detail in Section 3 of this report.

- *Otay River Watershed Management Plan*

The County's efforts to develop a watershed management plan continued to move forward during 2003-2004, bringing together government representatives and stakeholders to discuss watershed issues and develop a watershed vision for the Otay River sub-watershed. Activities conducted during 2003-2004 included public

stakeholder meetings, selection of a consultant team, signing of the JEPA, and initiating Otay River Watershed Management Plan (WMP) development efforts.

- ***Regional Harbor Monitoring Program***

A regional harbor monitoring program was developed to assess ambient conditions in San Diego Bay and determine the need for focus studies. This is a regional program; San Diego Bay is one of four harbors in southern California to be analyzed under this program. The study design identifies various strata within each bay and incorporates random sampling in each stratum. Sampling within San Diego Bay will be initiated during 2005.

### Program Evaluation

During 2003-2004, the San Diego Bay Copermittees conducted a comprehensive evaluation to improve the overall effectiveness of the program and to meet Municipal Permit requirements. There were two components to the evaluation: a Programmatic Assessment and an Activity Assessment. The Programmatic Assessment provides an overall assessment of program effectiveness by defining the distinction between regional, watershed, and jurisdictional programs and describing how the three components interrelate. Watershed-based activities are critical to the success of Urban Runoff Management Programs, but the implementation of these activities can be extremely challenging due to differences between jurisdictional and watershed boundaries. The Programmatic Assessment represents the Copermittees' effort of evaluating the success of the watershed component while fulfilling regional and jurisdictional program requirements as well.

The second evaluation component involves an assessment of activities developed and implemented during 2003-2004 to meet the objectives of the Watershed URMP. Principles from the document *A Framework for Assessing the Effectiveness of Jurisdictional Urban Runoff Programs* were incorporated into this assessment. Where possible, Levels 1-3 of the "Hierarchy of Targeted Outcomes" were incorporated. It should be noted that Levels 4-6 will be addressed in the Report of Waste Discharge to be submitted by the Copermittees in August 2005. The San Diego Bay Copermittees are working hard to successfully implement the Watershed URMP, evaluate programs, and present a unified message throughout the watershed. Results of the entire Program Evaluation are presented in Section 4 of this report.

### Streamlined Reporting

A significant part of the program evaluation this year included an assessment of the reporting format and the information included in the report. Although the format of the report has not changed significantly, information has been streamlined and reorganized. Per the request of the RQWCB, information on many regional projects has been moved

***San Diego Bay Watershed Urban Runoff Management Program 2003-2004 Annual Report  
Executive Summary***

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to the Unified Watershed URMP. Only information relating directly to activities conducted within the San Diego Bay Watershed is included in this report. Information included in this report also has been streamlined to provide a more concise description of activities conducted within the San Diego Bay Watershed; technical and supplemental information is included in the Appendices. The other change in the format of this report is the reclassification of some of the water quality activities. Some of the projects described in the San Diego Bay Watershed URMP document have progressed since their inception. Other projects have been modified and, as such, their original classification no longer applies. All changes to the water quality activities are outlined in Section 3. We believe these changes provide a more accurate description of activities conducted within the watershed and more clearly define how these activities satisfy the requirements of the Municipal Permit. An amended list of activities is included in Attachment 1.

The San Diego Bay Copermittees continue to work to improve the content and effectiveness of programs conducted within the San Diego Bay Watershed. We hope that changes to this annual report provide a clear understanding of the activities conducted and the effort expended by the Copermittees during 2003-2004. Each year of program implementation provides an opportunity to learn from past experiences and improve future efforts. The San Diego Bay Copermittees look forward to implementing the planned activities for the 2004-2005 reporting period.

## **Section 1: Introduction**

### **1.0 Background**

The NPDES Municipal Stormwater Permit (Order No. 2001-01) requires the County of San Diego, Port of San Diego, San Diego County Regional Airport Authority, and the cities of Chula Vista, Coronado, Imperial Beach, La Mesa, Lemon Grove, National City, and San Diego (San Diego Bay Copermittees) collaborate in the development of a Watershed Urban Runoff Management Program (Watershed URMP) that addresses surface stormwater quality for the San Diego Bay Watershed. The purpose of the Watershed URMP is to identify and address the highest priority water quality problems in the watershed. In addition, the Municipal Permit requires that the Copermittees develop activities that address education, public participation, and land use planning.

The 2003-2004 San Diego Bay Watershed Urban Runoff Management Program Annual Report (San Diego Bay Annual Report) describes the watershed activities conducted by the San Diego Bay Copermittees from July 1, 2003 to June 30, 2004.

### **1.1 Program Approach**

The goal of the San Diego Bay Watershed URMP is to positively affect the water quality of the San Diego Bay Watershed while balancing economic, social and environmental constraints. In order to attain that goal, the San Diego Bay Copermittees have set specific objectives that they will strive to meet as part of this effort.

*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 San Diego Bay Watershed URMP, specific activities and programs have been identified in an effort to meet these objectives. San Diego Bay Copermittees are working to develop a better understanding of the complex issues affecting our

watersheds and are learning to identify and pursue joint opportunities to positively affect the water quality in the region.

The Copermittees recognize that in order to have effective stormwater programs on every level (regional, watershed, and jurisdictional), approaches must focus on how to utilize time and funding most effectively to balance watershed needs along with Municipal Permit requirements. The San Diego Bay Copermittees are examining their jurisdictional programs to address watershed problems using existing jurisdictional mechanisms. Individual funding spent on jurisdictional programs is beginning to focus on watershed concepts and watershed pollutants. This deliberate plan of action helps mitigate the challenges created from separate jurisdictional funding sources and management directives. Utilizing individual jurisdictional efforts to focus on watershed issues is our strongest mechanism for solving watershed problems.

Regional programs such as education and monitoring have also been customized to fit both jurisdiction and watershed programs. Copermittees are committed to utilizing resources from regional and jurisdictional programs to find solutions that meet watershed needs, as well as developing specific solutions particularly for the San Diego Bay Watershed. The San Diego Bay Copermittees consider this watershed-based effort to be in its infancy and expect this program will be refined and augmented as the understanding of the correlation between regional, jurisdictional, and watershed programs becomes more clearly defined.

## **1.2 Municipal Permit Requirements**

Section M of the Municipal Permit requires that the San Diego Bay Copermittees collaborate in developing a Watershed URMP Annual Report. The annual report is a documentation of the activities conducted by the Copermittees during the previous annual reporting period to meet the requirements of the Municipal Permit. In accordance with the Municipal Permit, 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 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 Watershed URMP Annual Report is due to the San Diego Regional Water Quality Control Board (RWQCB) no later than January 31 of each year. The 2003-2004 Watershed URMP Annual Report covers activities conducted from July 1, 2003 to June 30, 2004.

### **1.3 Organization and Content of the Report**

The San Diego Bay Annual Report is primarily 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 San Diego Bay Copermittees have endeavored to stay as close to the organization requirements of the Municipal Permit as possible.

Some content of this document has been reorganized since the 2002-2003 Watershed URMP Annual Report based on comments by the RWQCB. Much of the raw data has been moved to appendices, and summaries have been utilized to better identify permit compliance. Activities have also been reorganized based upon the status of implementation. For example, former planning activities may now be water quality activities because these programs now are being utilized to improve the water quality within the watershed. The structure of the remaining sections of the Annual Report is as follows:

- SECTION 2 - Summarizes the quality of the water in the San Diego Bay Watershed based upon data that was collected and analyzed through June 2004. The watershed assessment presented in this report represents information pertaining to the San Diego Bay Watershed. A more detailed description of monitoring and analytical procedures can be found in the MEC document entitled *San Diego County Municipal Copermittees 2003-2004 Urban Runoff Monitoring* (MEC Report).
- SECTION 3 - Provides a status report of the work completed on those activities and programs discussed in Section III of the San Diego Bay Watershed URMP, which identified several activities and programs aimed at improving the quality of surface stormwater runoff within the watershed. These activities focused specifically in the areas of water quality, land use planning, education, and public participation.
- SECTION 4 - Provides an assessment of the implementation and effectiveness of the San Diego Bay Watershed URMP for the period of July 2003 to June 2004. The majority of this text is based upon the concepts outlined in the Copermittee

**San Diego Bay Watershed Urban Runoff Management Program 2003-2004 Annual Report**  
**Section 1 – Introduction**

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document titled *A Framework for Assessing the Effectiveness of Jurisdictional Urban Runoff Management Programs* (Framework Document).

- SECTION 5 - Provides a conclusion of the Annual Report and makes recommendations for improving future efforts.
- SECTION 6 - Provides references.

It is hoped that the restructuring of this document will provide a better understanding of the accomplishments and achievements of the San Diego Bay Watershed Copermittees. Taken as a whole, this report clearly documents permit compliance. The San Diego Bay Copermittees are committed to working with the RWQCB to preserve, enhance, and restore the quality of the water resources within the San Diego Bay Watershed.

## **Section 2: Water Quality Assessment**

### **2.0 Introduction**

The San Diego Bay Copermittees are working to ensure implementation of water quality assessment strategies will result in meaningful data and allow determination of long-term water quality changes in the San Diego Bay Watershed. Section J.2.b. of the Municipal Permit requires the Copermittees to develop watershed-based monitoring and reporting programs. This section of the report describes information collected by the San Diego Bay Copermittees to meet the requirements stated in Section J.2.b.

The Copermittees, as a regional group, tasked MEC Analytical Systems/Weston Solutions (MEC) with compiling and analyzing all available water quality data from the San Diego region. In addition to analyzing data on a regional basis, MEC was tasked with assimilating information and analyzing data for each of the nine Watershed Management Areas within San Diego County. The results of these tasks are described in the MEC Report prepared for the San Diego County Municipal Copermittees. The report provides information on monitoring site descriptions as well as results and analyses of the MLS monitoring, stream bioassessment, and ABLM programs. The San Diego Bay Watershed is described in Section 11 of the MEC Report.

The San Diego Bay Watershed information from the MEC Report is summarized here. The information focuses on the overall assessment and identification of watershed constituents of concern (COC); please refer to the MEC Report for more specific information regarding analytical assessments. Please note that this section has been significantly revised to address many of the RWQCB comments in the October 8, 2004 letter. Most of the text from the MEC Report included here is reported verbatim.

### **2.1 San Diego Bay Watershed Data**

The San Diego Bay Watershed assessment utilized several monitoring programs to identify COC within the watershed. These programs include the MLS monitoring, dry weather monitoring program, coastal stormdrain outfall monitoring, rapid stream bioassessment information, and the ABLM data. During this reporting period, MEC also integrated citizen monitoring data from California Coast Wide Snapshot Day that was collected within the watershed. Citizen data was used for comparative purposes only. The monitoring programs utilized for the San Diego Bay Watershed assessment and the constituents for each are outlined in Table 2-1.

Table 2-1. Data incorporated into the San Diego Bay Watershed assessment

<b>Program</b>	<b>Collection Period</b>	<b>Constituents Measured</b>
Mass Loading Stations	October 1, 2003 – March 31, 2004	Toxicity, Chemistry
Rapid Stream Bioassessments	October 2003 and May 2004	Benthos
Dry Weather Monitoring	May 1, 2003 – September 30, 2004	Chemistry
Coastal Stormdrain Monitoring	April 2003 – March 2004	Bacteria
Ambient Bay and Lagoon Monitoring	June and July 2003	Sediment Chemistry, Toxicity, Benthos
California Coast Wide Snapshot Day	May 2003	General Chemistry

Three storm events were monitored at the MLS on Chollas Creek and Sweetwater River. At Chollas Creek, the storm events occurred on February 3 and 18 and March 2, 2004. At Sweetwater River, the storm events occurred on November 12, 2003 and February 3, and 18, 2004. The data from these storms are presented in Appendix B.

## **2.2 San Diego Bay Watershed Assessment**

The watershed assessment process leads to a prioritization of water quality issues and assists in the development of short and long-term activities that maintain or improve water quality. Copermittees within the San Diego Regional Watersheds developed a consistent approach to watershed assessments using similar criteria to evaluate watershed data. This included comparing data to water quality objectives, determining the frequency, magnitude, and duration of exceedances, considering bioassessment rankings and toxicity results, and examining how COC may contribute to water quality degradation. A complete description of the process used for assessing data and determining COC is discussed in the Unified Document. The process used by the San Diego Bay Copermittees for this watershed assessment is consistent with the approach described in the Unified Document. The San Diego Bay Watershed assessment is included below.

Constituents for two of the three San Diego Bay sub-watersheds, namely, Pueblo San Diego and Sweetwater River, with the most extensive data sets, are presented in Table 2-2. The paucity of data from the Otay River sub-watershed was not adequate for use in evaluation of COC in either the Otay River sub-watershed or the San Diego Bay Watershed as a whole. The high (three diamonds), medium (two diamonds), or low (one diamond) designations were established using criteria presented in the MEC Report. Constituents ranked with a high frequency of occurrence in each sub-watershed are listed as potential COC for that sub-watershed. Based upon criteria established by MEC and the regional Copermittees, only those constituents determined to have a high

**San Diego Bay Watershed Urban Runoff Management Program 2003-2004 Annual Report**  
**Section 2—Water Quality Assessment**

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frequency of occurrence (three diamonds) are considered potential COC within the sub-watershed.

Table 2.2. The frequency of occurrence of constituents in the Pueblo San Diego and Sweetwater sub-watersheds.

Constituent	Frequency of Occurrence 2003-2004		Frequency of Occurrence 2002-2003		Frequency of Occurrence 2001-2002	
	Pueblo San Diego	Sweetwater	Pueblo San Diego	Sweetwater	Pueblo San Diego	Sweetwater
Conductivity		♦				
Oil and Grease		♦				
Total Coliform	♦♦♦	♦♦				
Fecal Coliform	♦♦♦	♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦
Enterococcus	♦♦♦	♦				
BOD	♦					
COD	♦♦		♦		♦♦	
Nitrate as N		♦				
TDS		♦♦		♦♦		♦♦
TSS	♦♦		♦♦		♦♦	
Turbidity	♦♦♦	♦	♦♦♦	♦♦♦	♦♦♦	♦
Chlorpyrifos	♦♦	♦	♦	♦♦	♦	♦
Diazinon	♦♦♦	♦♦	♦♦♦	♦♦♦	♦♦♦	♦♦
Total Copper	♦♦♦		♦♦♦		♦♦♦	
Total Zinc	♦♦♦		♦		♦♦♦	
Dissolved Copper	♦♦					

As indicated in Table 2-2 and further detailed below, bacteria (total coliform, fecal coliform, and Enterococcus), diazinon, chlorpyrifos, and turbidity were the only constituents common to both the Pueblo San Diego and the Sweetwater sub-watersheds during the 2003-2004 reporting period. Furthermore, with the exception of chlorpyrifos, these constituents are identified at a high frequency of occurrence in at least one of the sub-watersheds. These findings are consistent with earlier watershed assessments that noted the presence of these constituents in both sub-watersheds. As such, bacteria, diazinon, and turbidity are identified as COC for the entire San Diego Bay Watershed.

### 2.2.1 Pueblo San Diego Sub-Watershed Assessment

The Pueblo San Diego sub-watershed was assessed using chemistry and toxicity data collected during storm events from a single MLS located in Chollas Creek, chemistry data collected from four dry weather monitoring sites upstream of the MLS, and IBI scores generated at one bioassessment site. The results of this assessment are presented in Table 2-3. Third party data from the California Coast Wide Snapshot Day Report (May 17, 2003; [www.coastforyou.org](http://www.coastforyou.org)) included six monitoring observations in Chollas Creek; water quality objectives were exceeded for turbidity for one observation and dissolved oxygen levels were low in two of the observations. E. coli was analyzed on one occasion and exceeded water quality objectives. These results are consistent with the watershed assessment.

In summary, the Pueblo San Diego sub-watershed drains a densely populated, urban area. Nearly 65% of the drainage area is residential and another 17% is commercial. Water quality in Chollas Creek reflects the stresses inherent of a highly urbanized environment. The three bacterial indicators and diazinon exhibited a high frequency of occurrence and were identified as watershed COC. Total copper and total zinc also exhibited a high frequency of occurrence and were identified as Pueblo San Diego sub-watershed COC because they appear to be primarily located within the Pueblo San Diego sub-watershed. This finding is consistent with previously identified pollutants known for their presence in highly urbanized land-use areas.

The benthic community impacts and stream habitat impairments identified in the MEC Report may result from elevated pollutants or physical alterations to the riparian corridor. TIEs were initiated, however, continued toxicity was not observed. Additional TIEs may need to be conducted to determine the likely source of toxicity to *Hyallela azteca* in Chollas Creek.

Correspondence from the RWQCB to the San Diego Bay Copermittees dated October 8, 2004 requested that trash also be identified as a COC within this sub-watershed (RWQCB Correspondence). After reviewing surrounding land-uses, existing information (the RWQCB 13267 request for semi-annual trash reports), and considering RWQCB comments, the San Diego Bay Copermittees have listed trash as a COC for the Pueblo San Diego sub-watershed.

**San Diego Bay Watershed Urban Runoff Management Program 2003-2004 Annual Report**  
**Section 2—Water Quality Assessment**

**Table 2-3. Constituent exceedances in the Pueblo San Diego sub-watershed.**

Constituents With Any Wet Weather (MIs) Or Dry Weather Wqo Exceedance	MIs (Wet Weather) Results								Dry Weather Results		Frequency of Occurrence	Criterion No.
	2001/2002		2002/2003		2003/2004		Cumulative		2003/2004			
	#/3	%	#/3	%	#/3	%	#/9	%	#/51	%		
<b>Bacteriological</b>												
Total Coliform	3	100	3	100	3	100	9	100	2	50	◆◆◆	1
Fecal Coliform	3	100	2	67	3	100	8	89	0	0	◆◆◆	1
Enterococcus	3	100	3	100	3	100	9	100	1	25	◆◆◆	1
<b>Wet Chemistry</b>												
BOD	1	33	1	33	2	67	4	44	NA		◆	9
COD	2	67	1	33	2	67	5	56	NA		◆◆	6
Surfactants (MBAS)	1	33	0	0	0	0	1	11	0	0	-	-
Total Phosphorous	1	33	0	0	0	0	1	11	NA		-	-
Total Suspended Solids	2	67	2	67	1	33	5	56	NA		◆◆	6
Turbidity	3	100	3	100	3	100	9	100	1	25	◆◆◆	1
<b>Pesticides</b>												
Chlorpyrifos	3	100	2	67	0	0	5	56	0	0	◆◆	6
Diazinon	3	100	3	100	3	100	9	100	0	0	◆◆◆	1
<b>Total Metals</b>												
Copper	3	100	3	100	3	100	9	100	NA		◆◆◆	1
Lead	0	0	0	0	3	100	3	33	NA		◆	9
Zinc	3	100	3	100	3	100	9	100	NA		◆◆◆	1
<b>Dissolved Metals</b>												
Copper	3	100	3	100	0	0	6	67	1	25	◆◆	6
Zinc	0	0	2	67	0	0	2	22	0	0	-	-
<b>Toxicity</b>	# and % of Samples with NOEC < 100%										<b>Evidence Of Persistent Toxicity?</b>	
Ceriodaphnia 96-hr	3	100	1	33	0	0	4	44	NA		No	
Ceriodaphnia 7-day survival	3	100	2	67	0	0	5	56	NA		Yes	
Ceriodaphnia 7-day reproduction	3	100	1	33	0	0	4	44	NA		No	
Hyallolella 96-hr	2	67	1	33	2	67	5	56	NA		Yes	
<b>Bioassessment</b>	<b>IBI SCORE</b>										<b>Evidence Of Benthic Alteration?</b>	
Chollas Creek	Poor - Very Poor										Yes	

NA = Not Assessed  
 - = Constituent results are below the defined requirements for a Low Frequency of Occurrence rating.  
 ◆ = Low Frequency of Occurrence rating.  
 ◆◆ = Medium Frequency of Occurrence rating.  
 ◆◆◆ = High Frequency of Occurrence rating

### Sweetwater Sub-Watershed

The Sweetwater sub-watershed was assessed using chemistry and toxicity data collected during storm events from a single MLS located in Sweetwater River, chemistry data collected from nine dry weather monitoring sites upstream of the MLS, and IBI scores generated at one bioassessment site. The results of this assessment are presented in Table 2-4. Third party data from the California Coast Wide Snapshot Day Report (May 17, 2003; [www.coastforyou.org](http://www.coastforyou.org)) included three monitoring observations in Sweetwater River; dissolved oxygen levels were low in two of three observations. These results are consistent with the watershed assessment.

In summary, the Sweetwater River sub-watershed consists of 50% vacant or undeveloped land, 30% residential, and only 10% commercial. During this reporting period, there were no constituents within the Sweetwater sub-watershed identified as having a high frequency of occurrence. However, as noted in Section 2.2, bacterial indicators and diazinon have been identified as overall watershed COC. These constituents exhibited a medium frequency of occurrence and in the past have shown elevated levels within the Sweetwater sub-watershed. Differences in land use compared to Chollas Creek may likely be the reason for improved water quality in Sweetwater River. The bioassessment monitoring identified Sweetwater River as having a Very Poor IBI score. Similar to Chollas Creek, TIEs were initiated, however, toxicity was not observed.

ABLM was conducted in the Sweetwater River Estuary. The purpose of the ABLM Program is to provide a ranking of the environmental conditions of the coastal embayments of San Diego County. Because the ABLM Program analyzed sediments, rather than water, the ABLM results could not be directly compared to data from the MLS, or dry weather monitoring programs. The San Diego Bay Copermittees reviewed the ABLM data to determine how it may (or may not) relate to water quality conditions in the Sweetwater River.

The ABLM monitoring consisted of sediment sample collection and included analyses for chemistry, toxicity, and benthic community structure. As discussed in the MEC Report, sediment chemistry results were compared to effects range low (ERL) and effects range median (ERM) values in the published literature. ERLs represent concentrations below which adverse biological effects are rarely observed; ERMs represent concentrations above which adverse biological effects are more frequently, though not always observed. The monitoring data indicated that concentrations of metals were low; only copper and zinc exceeded the ERL values, however they did not exceed their respective ERMs. In addition, the ABLM Program is designed to target COCs in the coastal embayments, thus the results should be interpreted as a worst-case scenario rather than

**San Diego Bay Watershed Urban Runoff Management Program 2003-2004 Annual Report**  
**Section 2—Water Quality Assessment**

a true reflection of ambient conditions. It should be noted that both copper and zinc are currently identified as COC for the San Diego Bay Watershed.

**Table 2-4. Constituent exceedances in the Sweetwater sub-watershed.**

Constituents With Any Wet Weather (MIs) Or Dry Weather Wqo Exceedance	MIs (Wet Weather) Results								Dry Weather Results		Frequency of Occurrence	Criterion No.	
	2001/2002		2002/2003		2003/2004		Cumulative		2003/2004				
	#/3	%	#/3	%	#/3	%	#/9	%	#/9	%			
<b>General / Physical / Organic</b>													
Conductivity	0	0	0	0	0	0	0	0	0	4	44	♦	8
Oil and Grease	0	0	0	0	0	0	0	0	0	1	11	♦	8
<b>Bacteriological</b>													
Total Coliform	1	33	1	33	3	100	5	56	5	56	56	♦♦	7
Fecal Coliform	0	0	1	33	0	0	1	11	5	56	56	♦♦	7
Enterococcus	1	33	2	67	2	67	5	56	2	22	22	♦	8
<b>Wet Chemistry</b>													
BOD	0	0	0	0	1	33	1	11	NA		-	-	
Nitrate as N	0	0	0	0	0	0	0	0	1	11	11	♦	8
Total Dissolved Solids	2	67	1	33	3	100	6	67	NA		67	♦♦	6
Turbidity	1	33	2	67	0	0	3	33	0	0	0	♦	8
<b>Pesticides</b>													
Chlorpyrifos	1	33	2	67	0	0	3	33	0	0	0	♦	9
Diazinon	2	67	3	100	1	33	6	67	0	0	0	♦♦	6
<b>Toxicity</b>	<b># and % of Samples with NOEC &lt; 100%</b>										<b>Evidence Of Persistent Toxicity?</b>		
<i>Ceriodaphnia</i> 96-hr	1	33	1	33	0	0	2	22	NA		No		
<i>Ceriodaphnia</i> 7-day survival	1	33	1	33	0	0	2	22	NA		No		
<i>Ceriodaphnia</i> 7-day reproduction	2	67	1	33	0	0	3	33	NA		No		
<i>Selenastrum</i> 96-hr	3	100	1	33	1	33	5	56	NA		Yes		
<b>Bioassessment</b>	<b>IBI SCORE</b>										<b>Evidence Of Benthic Alteration?</b>		
Sweetwater R. at HWY 94	Very Poor										Yes		
Sweetwater R. at Bonita Rd.	Very Poor										Yes		

NA = Not Assessed  
 - = Constituent results are below the defined requirements for a Low Frequency of Occurrence rating.  
 ♦ = Low Frequency of Occurrence rating.  
 ♦♦ = Medium Frequency of Occurrence rating.  
 ♦♦♦ = High Frequency of Occurrence rating

The ABLM Program also indicated that toxicity in Sweetwater River Estuary sediments was significantly greater than that of a control. In contrast, there was little to no toxicity associated with water samples collected from the Sweetwater River MLS during storm events. The lack of continuity in toxicity between the water and sediment samples may be due to several variables, including dilution factors associated with storm events, physical characteristics of the sediments such as TOC and grain size, which may have caused some constituents to concentrate in the sediments, or the potential for contaminant sources outside the watershed. The source of sediment toxicity was unknown. The results of the toxicity testing in the sediments contradicted those of the benthic infaunal community in the Sweetwater River Estuary, which ranked highest among the 12 embayments assessed in the ABLM Program.

Relative ranks for each embayment of the data collected in the summer of 2003 were presented for the first time in the 2004 stormwater report, however, MEC felt it was premature to attribute contaminants in the embayments directly to COCs in the watershed, particularly since samples for sediment chemistry and toxicity were based on a single composite for each embayment. Monitoring conducted in the future may help determine potential contaminant sources through the use of a longer-term data set.

### **2.3 Water Quality Improvements and Degradations**

Identifying water quality improvement or degradation encompasses an evaluation of the COC and other factors in the watershed, such as 303(d) listings, beneficial uses, existing projects and studies, and supplemental information. In many cases, sufficient information may not be available from the urban runoff monitoring programs to determine whether a water quality problem results in water body impairment. Annual assessments of water quality improvements are difficult to perform for several reasons. Stormwater data vary significantly from storm to storm and it usually takes several years of data to determine whether improvements and/or degradations are occurring. Typically, water quality improvements are assessed on a long-term basis by evaluating data trends rather than reviewing annual data.

#### **2.3.1 Water Quality Improvements**

The MEC Report evaluates the frequency of occurrence of COC by sub-watershed and identifies some pollutants that have exhibited a decrease from the previous reporting period. In general, the Sweetwater River sub-watershed had lower pollutant levels during 2003-2004 than were observed in 2002-2003. From this assessment however, it appears that while some pollutants appear to decrease, they remain consistent with data collected over the three years of the Municipal Permit.

Bacteria levels for San Diego Bay beaches also showed a slight decrease during this reporting period. SISP, a study site during 2003, noted improvements as bacteria levels decreased considerably from 2002. A review of County Department of Environmental Health (DEH) data from 2002-2003 to 2003-2004 also confirms the SISP data, suggesting that bacteria levels have been reduced. This is more fully described in the water quality activities discussion in Section 3.1.1.1 of this report.

**2.3.2 Water Quality Problems**

The San Diego Bay Copermittees used data from the MEC Report, 303(d) listings and Total Maximum Daily Load (TMDL) programs, an evaluation of beneficial uses, and best professional judgment to re-assess the major water quality problems for the San Diego Bay Watershed. Chapter 4 of the San Diego Bay Watershed URMP (2002) listed the major water quality problems as diazinon, copper, zinc, bacteria, and turbidity/total suspended solids (TSS), with the first three as high priority and the latter two as low priority issues.

The most recent MEC report continues to highlight these five issues as major water quality problems in the San Diego Bay Watershed. Table 2-5 lists the priority pollutants for the San Diego Bay Watershed, as well as potential sources of each constituent. However, as noted earlier, pollutant levels in Sweetwater River were lower than what was observed last year. Furthermore, the San Diego Bay Copermittees recognize that water quality problems are not consistent throughout the watershed; most problems exist within the Pueblo San Diego sub-watershed. As such, consideration must be given to developing water quality activities that will have the most benefit to the entire San Diego Bay Watershed. Some of the considerations and types of water quality activities to address each pollutant are identified below. Examples of some of the water quality activities currently being implemented in the San Diego Bay Watershed are included below and will be further discussed in Section 3 of this report.

Table 2-5. Major water quality problems in the San Diego Bay Watershed.

<b>Watershed Priority Pollutants</b>	<b>Reasoning</b>	<b>Potential Sources</b>
Diazinon	<ul style="list-style-type: none"> <li>• Identified as a regional COC.</li> <li>• Prevalent in both sub-watersheds.</li> <li>• Diazinon has been identified as causing toxicity in Chollas Creek.</li> <li>• Diazinon TMDL in Chollas Creek has been approved.</li> </ul>	Residential, agriculture, or commercial pesticide application.
Copper and Zinc (Toxic Substances)	<ul style="list-style-type: none"> <li>• Pollutants have been identified as causing toxicity in Chollas Creek.</li> <li>• TMDLs are underway raising the</li> </ul>	Automobiles or industrial wastes.

**San Diego Bay Watershed Urban Runoff Management Program 2003-2004 Annual Report**  
**Section 2—Water Quality Assessment**

Watershed Priority Pollutants	Reasoning	Potential Sources
	concern of these COC.	
Bacterial Indicators (primarily fecal coliform bacteria)	<ul style="list-style-type: none"> <li>• Prevalent in both sub-watersheds.</li> <li>• Present in multiple monitoring programs.</li> </ul>	Human sewage from failed septic systems, sewer spills, or homeless encampments; wildlife including birds, dogs, coyotes, raccoons, etc.; domestic animals, including livestock and pets.
Turbidity/Total Suspended Solids	<ul style="list-style-type: none"> <li>• Found in both sub-watersheds.</li> <li>• Present in multiple monitoring programs.</li> </ul>	Erosion, suspended sediment/solids, construction, sewage, fertilizers.

Diazinon

Diazinon was identified as a regional problem due to its use as a residential, agricultural, and commercial pesticide. Monitoring data from the San Diego Bay Watershed indicate that it is prevalent in both sub-watersheds. It is also positively linked to the Chollas Creek 303(d) listing for toxicity. The TMDL for diazinon in Chollas Creek has been approved and monitoring will begin in the fall of 2004. Diazinon is currently banned from sales and/or distribution in the US and it is anticipated that use of this product will decrease in the future as availability becomes limited.

The most beneficial water quality activities for diazinon are educational tools that emphasize the use of appropriate pesticide application at homes and/or businesses. Focusing education efforts on the proper application of pesticides as a whole, rather than targeting diazinon appears to be the most effective method for reducing pesticide pollution because other pesticides will likely replace diazinon in the future. Because of this, the San Diego Bay Copermittees have developed and implemented several activities for diazinon that incorporate different educational tools. Examples of these activities include the Integrated Pest Management Campaign, distribution of brochures, use of the Project Clean Water website for pesticide awareness, and educational components of the Chollas Creek Enhancement Plan. In addition, several monitoring efforts are underway in Chollas Creek as part of the Diazinon TMDL. Information collected from these monitoring events will be used in the future to enhance public awareness.

Copper and Zinc

Monitoring data from the watershed assessment have identified copper and zinc as water quality problems in the San Diego Bay Watershed. Industrial activities prior to the implementation of Best Management Practices (BMPs) are believed to be the primary source of these pollutants. Automobiles are also a source of these contaminants, as well as copper leaching from boat hull paint. TMDLs for copper and zinc currently are under way within the San Diego Bay Watershed.

BMPs are commonly used to reduce the impacts of copper and zinc within the watershed. Similar to diazinon, watershed-based educational tools are one of the most important activities used to address these pollutants at the watershed level. Enforcing appropriate BMPs (on a jurisdictional level) can also be effective in reducing pollutant loads. Education activities implemented during 2003-2004 that address copper and/or zinc include the Common Grounds grant, the San Diego Maritime Museum's Pilot Program, Splash Mobile Lab, Project Swell, Project Clean Water website, and various other public presentations (see Section 3.2). Verification of the use and maintenance of adequate BMPs is conducted through jurisdictional inspection programs. The diazinon TMDL monitoring program that was approved for Chollas Creek will also test for copper and zinc.

### Bacterial Indicators

Bacterial indicators, primarily fecal and coliform bacteria, are prevalent in both sub-watersheds of the San Diego Bay Watershed. Some beaches within San Diego Bay regularly exceed beneficial use water quality standards. Because of this, a TMDL for the San Diego Bay beaches (Bacteria TMDL II) is currently in development. Although wildlife have been identified as the primary source of bacterial contamination in some areas, failed septic systems, sewer spills, and pet waste also are potential sources of contamination.

The San Diego Bay Copermittees are working to ensure bacterial contamination from stormwater runoff is minimal. Because activities of residents within the watershed have the greatest potential to contribute to contamination, the Copermittees have developed several public awareness campaigns regarding bacterial sources. Examples of these activities include THINK BLUE Public Service Announcements, Splash Mobile Lab and Project SWELL presentations, the Common Grounds grant activities, and the Project Clean Water website. Many Copermittees also provide pet waste bags in local parks and recreational areas. During 2003, the Copermittees also conducted a special study to identify the source of bacterial contamination at Shelter Island Shoreline Park. Although the results of this study were inconclusive, the methodology developed for this study may be applied to other projects aimed at determining sources of bacterial contamination.

### Turbidity / TSS

Turbidity has been identified as a concern in both sub-watersheds within the San Diego Bay Watershed. Potential sources of turbidity problems include erosion, improperly maintained construction sites, sewage, and fertilizers.

Similar to copper and zinc, implementation and maintenance of proper BMPs are an effective way to control turbidity from various sources. The verification and enforcement of these BMPs, however, is accomplished at the Jurisdictional level. The San Diego Bay

Copermittees are addressing this problem by developing and implementing educational tools, as well as utilizing other tools such as planning mechanisms that can be applied at the watershed level. Examples of activities that address turbidity/TSS include construction site inspections (jurisdictional), the implementation of SUSMP, Otay River WMP, and various educational activities (see Section 3.2).

Other potential constituents:

*Chlorpyrifos*

Similar to diazinon, chlorpyrifos is an organo-phosphate pesticide that has been identified in the San Diego Bay Watershed. However, levels of chlorpyrifos are not been as high or as frequent as diazinon. Therefore, it is listed as a potential COC for the watershed. As stated above in this section (diazinon), activities to address pesticide pollution are primarily education outreach efforts. The education activities are designed to focus on proper application of pesticides as a whole, rather than targeting each specific pollutant. This is hoped to reduce pollution impacts from all pesticides. As such, several of the education activities identified for diazinon are also applicable for chlorpyrifos. Examples of these activities include the Integrated Pest Management Campaign, distribution of brochures, use of the Project Clean Water website for pesticide awareness, and educational components of the Chollas Creek Enhancement Project. Monitoring as part of the diazinon TMDL will also include chlorpyrifos analysis.

*Trash*

In a letter dated October 8, 2004, the RWQCB requested that the San Diego Bay Copermittees consider including trash as a constituent of concern within the San Diego Bay Watershed. After considering the methods used for determining COC and the analytical information available for trash, the Copermittees have determined that trash loads in a frequency that could be determined to be of concern, (outside the normal amounts) are specific to the Pueblo San Diego sub-watershed. As such, trash is identified as a COC only for the Pueblo San Diego sub-watershed. Copermittees do not intend to list trash as a San Diego Bay Watershed COC until rigorous data are available throughout the entire watershed to support such a listing. Reasons to support the finding that trash is an isolated problem within the San Diego Bay Watershed are identified below:

1. Trash has consistently been identified as a problem in Chollas Creek. The RWQCB issued a trash directive for the Chollas Creek area in 2002. The City of San Diego has been developing and implementing methods for eliminating trash and provides semi-annual reports updating the RWQCB on their progress from removing trash (Appendix C). Several activities have been implemented within that area to address the problem.

2. The Port of San Diego, City of San Diego, and the Navy collaborated on a trash removal pilot project during 2001-2002 that supports the belief that trash is not a major problem throughout the watershed. The project involved setting up containment booms at selected locations to prevent trash associated with stormwater flow from entering San Diego Bay. Three sites were chosen for this project: Sweetwater River, Switzer Creek, and Chollas Creek. Although booms were deployed at these sites during three rain events, very little trash was captured at Switzer Creek and Sweetwater River. This pilot project revealed that, with the exception of Chollas Creek, trash is not a widespread problem in the San Diego Bay Watershed.
3. The MEC Report identifies COC that are specific to single watersheds or portions of watersheds. They support this by stating that pollutants vary widely due to land use, MS4 conveyance system types, and other characteristics unique to each of the sub-watersheds. Trash is a pollutant associated with highly urbanized areas (such as Chollas Creek). It is not as prevalent in less populated areas. It is not reasonable to list trash as a watershed COC given the variation in frequency of occurrence among other constituents in the sub-watersheds within the San Diego Bay Watershed or based on problems that occur in other watersheds.

The San Diego Bay Copermittees believe current scientific information does not support listing trash as a COC in the San Diego Bay Watershed. We continue to monitor the City of San Diego's efforts and methods to address trash in Chollas Creek, and we will re-evaluate at least annually the trash issue and the means of measuring impacts from trash. San Diego Bay Copermittees will continue conducting educational outreach programs aimed at reducing litter and implementing other activities to address the trash problem in Chollas Creek.

## **Section 3: Implementation**

### **3.0 Introduction**

The San Diego Bay Watershed URMP outlines several activities the San Diego Bay Copermittees have been implementing and will continue to implement over the remaining life of the Municipal Permit. In an effort to meet the Municipal Permit requirements, four primary objectives were developed to guide watershed management decisions. As noted in Section 1 of this report, these objectives include:

- *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.*

A variety of activities and/or programs were conducted to achieve these objectives. Activity highlights include developing and conducting monitoring programs, enhancing data management, developing education programs aimed at targeting priority pollutants and emphasizing the overall watershed concept, and developing strategies for enhancing inter-jurisdictional planning. This section summarizes the activities identified in the Watershed URMP and describes the programs implemented by the San Diego Bay Copermittees during the 2003-2004 reporting period. Table 3-1 presents an overall list of the activities being conducted within the San Diego Bay Watershed. It should be noted that some activities have multi-faceted implementation strategies and include multiple program components (i.e. development of a monitoring program coupled with an educational outreach campaign). As such, the specifics of those activities may be discussed in multiple areas in this section. Furthermore, Table 3-1 distinguishes between activities originally identified in the Watershed URMP, revised activities, or newly identified activities. Details on the implementation status of each activity will be presented in the section appropriately identified in the table.

It should be noted that this section, Implementation, has been significantly revised to address many of the RWQCB comments in the October 8, 2004 letter. The section was restructured to better clarify how each activity and/or program within each activity addresses the watershed's priority pollutants and their likely sources, and also identify how each relates to the original Watershed URMP objectives. The report has also been significantly streamlined to reduce redundancy. Information on regional programs that do not relate solely to the San Diego Bay Watershed has been moved to the Unified

Document and noted in appropriate sections of this report. Raw data tables identifying individual events (education, public participation), or supplemental information have been summarized and moved into appendices to facilitate review without losing information. It is highly recommended however, that readers review each appendix thoroughly to avoid overlooking valuable information. The revisions to this section provide a concise format and outline how the San Diego Bay Watershed is complying with the permit requirements.

### **1.1 Water Quality Activities**

Water quality activities identified in Section 5.2 of the San Diego Bay Watershed URMP were designed to meet the Watershed URMP primary objective #1:

- *Develop/expand methods to assess and improve water quality within the watershed.*

The original water quality activities were reviewed and assessed during the 2003-2004 reporting period. Determinations were made as to status of the original activities (ongoing or completed), appropriateness of the activity to meet the above stated objective and address priority pollutants, and identification of new or additional activities. The following section provides a report on the original Watershed URMP activities, subsequent revisions to the activities, and a discussion of additional or new activities implemented during this reporting period.

#### **3.1.1 Watershed URMP Water Quality Activities**

The San Diego Bay Watershed URMP identifies four short-term and two long-term activities to address the water quality issues in the San Diego Bay Watershed. Three of the four short-term activities are aimed toward the direct reduction of priority pollutants, while the fourth addresses data management. The long-term activities address planning strategies to ensure water quality and beneficial uses are being protected. The status of work completed during 2003-2004 for each activity is discussed in Table 3-2. The table also identifies the priority pollutants and likely sources targeted by each activity. Supplemental text will be provided for only those activities that require additional narrative descriptions. To reduce redundancy, this annual report focuses solely on the activity components implemented during this reporting period. Please refer to the Watershed URMP Section 5 for a complete description of each activity.

**San Diego Bay Watershed Urban Runoff Management Program 2003-2004 Annual Report**  
**Section 3—Implementation**

Table 3-1 2003-2004 list of watershed activities by section.

	<b>Watershed URMP Activity</b>	<b>Classification</b>	<b>Section Discussed</b>
<b>Water Quality Activities</b>	TMDL for Diazinon in Chollas Creek	WURMP Activity	Table 3-2
	Regional Integrated Pest Control Management Campaign	Revised*	Table 3-2; 3.1.2.2
	Bacteria Source Investigation Study	WURMP Activity	Table 3-2; 3.1.1.1
	Data Collection and Management	Revised*	Table 3-2; 3.1.2.1
	Standard Urban Stormwater Mitigation Plan (SUSUMP) Implementation	WURMP Activity	Table 3-2
	Chollas Creek Enhancement Plan	Revised*	3.1.2.4
	Regional Harbor Monitoring Program	New	3.1.3.1
	Downtown Piers, Switzer Creek, Grape St TMDL	New	3.1.3.2
	Chollas and Paleta TMDLs	New	3.1.3.3
	Shelter Island Yacht Basin Copper TMDL	New	3.1.3.4
	Jurisdictional Dry Weather Monitoring Programs	New	3.1.3.5
	Jurisdictional Inspection Programs (Industrial, Commercial, Municipal)	New	3.1.3.5
<b>Planning Activities</b>	Individual Jurisdictional Planning Goals – General Plan Updates	WURMP Activity	3.2.1
	Inter-jurisdictional Planning Mechanism	WURMP Activity	Table 3-4; 3.2.2
	Jurisdictional Planning/Watershed URMP Workgroup	WURMP Activity	3.4.1.1
	Source Water Protection Guidelines Project	Revised*	Table 3-2; 3.2.2.4
	Otay Watershed Management Plan	WURMP Activity	3.2.2.1
	Otay Special Area Management Plan	WURMP Activity	3.2.2.2
	Multiple Species Conservation Program (MSCP)	WURMP Activity	3.2.2.3
<b>Educational Activities</b>	Public Presentations and Media/Watershed Element	WURMP Activity	3.3.1.1
	Integrated Pest Management Campaign	Revised*	3.3.1.3
	School Programs	New	3.3.1.2
	Which is my watershed?	WURMP Activity	3.3.1.4 (Complete)
	Watershed Brochure	Revised*	3.3.1.5
	Project Clean Water	WURMP Activity	3.3.1.6
	Partners in Clean Water	WURMP Activity	3.3.1.7
	Chollas Creek Enhancement Plan – Education Tasks	WURMP Activity	3.3.1.8
<b>Public Participation</b>	WURMP Workgroup	WURMP Activity	3.4.1.1
	Workshops and Conferences	WURMP Activity	3.4.1.2
	Presentations	WURMP Activity	3.4.1.3
	Community Events	WURMP Activity	3.4.1.4
	Cleanup Events	WURMP Activity	3.4.2
	Integration and Participation in Local Planning Activities	WURMP Activity	3.4.3
	Project Clean Water	WURMP Activity	3.4.4 (Unified Document**)
	Direct Interaction	WURMP Activity	3.4.5

\*Revised WURMP Activities are discussed in Section 3.0.2 and other sections as noted.

\*\*Activities moved to the Unified Document are primarily regional activities. Information specific to the San Diego Bay Watershed is included in this report.

**San Diego Bay Watershed Urban Runoff Management Program 2003-2004 Annual Report**  
**Section 3—Implementation**

Table 3-2 2003-2004 Implementation Efforts for Original Watershed URMP water quality activities

Short Term Activity	Work Implemented during 2003-2004	Priority Pollutant Addressed	Likely Sources Addressed	Implementation Schedule
Diazinon TMDL	September 2003: Two public meetings were held to discuss the monitoring plan, station locations, sampling frequency, and constituents to be sampled.	Diazinon Copper*, Zinc*	Residential and Commercial Applications	Ongoing
	October 2003: Submitted Chollas Creek Diazinon Monitoring proposal to RWQCB.			
	February 2004: Submitted comments on proposed "Schedule for Compliance" to RWQCB.			
	Monitoring program approved. Actual monitoring will commence in the 2004 wet season.			
Regional IPM Campaign - PRISM Grant	Scope of the State Agreement was developed.	Diazinon	Residential and Commercial Applications	Ongoing
	State Agreement was submitted to state for approval and signatures.			
Bacteria Source Investigation Study	Bacteria monitoring for the SISP project Quarter 3 (July) and Quarter 4 (November) were completed during the reporting period.	Bacteria	Sewage laterals, Natural sources	Complete**
Data Collection	The Regional Monitoring Workgroup with MEC Analytical Systems/Weston designed a uniform assessment strategy to link disparate monitoring programs to provide an evaluation of watershed conditions. This assessment process assists in prioritizing water quality issues and developing short and long-term activities. An interim guidance document, the "Watershed Data Assessment Framework" was developed and utilized for watershed assessments during this reporting period.	All***		Ongoing
Data Collection	Data from Dry weather monitoring, ABLM, and Coastal Storm Drain Monitoring were incorporated into the 2003-2004 watershed assessments.	All***		Ongoing annually. Completed for 2003-2004
Short Term Activity	Work Implemented during 2003-2004	Priority Pollutant	Likely Sources	Implementation

**San Diego Bay Watershed Urban Runoff Management Program 2003-2004 Annual Report**

**Section 3—Implementation**

		<b>Addressed</b>	<b>Addressed</b>	<b>Schedule</b>
Data Collection	Citizen Monitoring Data were incorporated into the water quality assessment for Chollas Creek and Sweetwater River (California Coast Wide Snapshot Day, May 2003)	Bacteria		Ongoing Completed for 2003-2004
Data Collection	Common Ground Project: <ul style="list-style-type: none"> <li>Contract agreement and Scope of Work for Common Ground Grant was sent to the State Board</li> <li>Common Grounds Project approved by State Board</li> <li>Development of MOU's for Common Ground Grant Project Partners</li> </ul>	All***		Ongoing through 2007
Data Collection	A regional harbor-monitoring program was developed to assess ambient conditions and determine the need for focus studies. San Diego Bay is one of the four harbors identified in this program.	All***		Ongoing
<b>Long Term Activity</b>	<b>Work Implemented during 2003-2004</b>	<b>Priority Pollutant Addressed</b>	<b>Likely Sources Addressed</b>	<b>Implementation Schedule</b>
SUSMP Implementation	Model SUSMP approved by RWQCB. All jurisdictional SUSMPS required to be at least as stringent as model.	Turbidity/TSS	Construction sites	Ongoing
Source Water Protection Guidelines	Priority projects required to implement SUSMPs.	Turbidity/TSS	Construction Sites, New Development / Redevelopment	Ongoing

\* Metals analysis will also occur through required TMDL monitoring under the Diazinon TMDL Implementation Plan

\*\*Until bacteria hits become prevalent at Shelter Island, the project is considered complete.

\*\*\*Through improved data management, the San Diego Bay Copermittees can better evaluate the levels of all pollutants.

### 3.1.1.1 Bacteria Source Investigation Study

The bacteria study at SISP was a year-long study conducted during 2003. The first two sampling efforts were completed during the 2002-2003 program year (January and April 2003), with the final two (July to November 2003) during this reporting period. During the final two sampling efforts, bacteria levels had diminished. The lack of a significant water quality impairment during the final phase of sampling made it impossible to find sources because there were not enough positive hits to reveal a trend. Samples collected during the final sampling quarters showing elevated bacteria were collected at extreme low tide (<2.0) and exhibited increased levels of TSS suggesting that these “hits” may have been due to re-suspension of sediments.

Furthermore, we continue to find no evidence of a water quality impairment for bacteria at SISP. Table 3-3 shows data from the County Department of Environmental Health comparing the number of exceedances between the 2002-2003 and 2003-2004 reporting periods (DEH Database). These results confirm the Shelter Island Study data suggesting that bacteria levels have been reduced. In short, the bacteria source has been eliminated (as a result of natural or unknown reasons). As such, we are not able to investigate sources until bacteria again become problematic. Therefore this water quality activity is considered complete.

Table 3-3 Comparison of Shelter Island Bacteria Exceedances in 2002-2003 and 2003-2004.

Bacterial Indicators	7/2002 – 6/2003 Exceedances	7/2003 – 6/2004 Exceedances
Total Coliform	1	0
Fecal Coliform	15	0
Enterococcus	34	2

### 3.1.2 Revisions to Water Quality Activities

The Watershed URMP states that San Diego Bay Copermittees will annually evaluate water quality issues and will also review the action plan for any pertinent revisions. A review of the Watershed URMP activities identified some original water quality activities that could be better tracked if they were reorganized. The following activities have been modified or moved from different sections of watershed activities so they can be more easily assessed. The justification for each modification and a summary of what will be reported in the future is discussed below. Please note that these revisions are also identified in Table 3-1 at the beginning of this section.

#### **3.1.2.1 Data Collection**

Data collection was originally identified as a short-term water quality activity in the Watershed URMP. During the last two reporting periods, the San Diego Bay Copermittees have been working on ways to improve data collection by increasing the efficiency of data management, assessing data gaps, and incorporating additional data sets into the annual water quality assessments. During this reporting period, data collection was re-characterized as a long-term activity consisting of several programs (or short-term activities) that improve data collection in San Diego Bay Watershed. Please refer to the Watershed URMP Amendment table in Attachment 1. Data collection activities will continue to be tracked in this manner in future reports.

#### **3.1.2.2 Regional IPM Campaign – PRISM GRANT**

The PRISM grant was identified as a means to develop and implement an Integrated Pest Management (IPM) program throughout the region. A majority of the tasks identified in the PRISM grant are of a regional nature. The discussion of these tasks will be discussed in the Unified Document. Two of the PRISM Grant tasks, 1) Implement a focus community-based educational program in the Chollas Creek watershed, and 2) Implement a water quality monitoring program for diazinon in the Chollas Creek watershed, are specific to the San Diego Bay Watershed and will continue to be discussed in this document. During 2003-2004, efforts to implement the grant were just getting underway. As such, a limited amount of work (primarily directed toward finalizing the grant) was performed on the PRISM grant. The details are identified in Table 3-2.

#### **3.1.2.3 Source Water Guidelines**

Source Water Guidelines are being developed by the City of San Diego Water Department to help planners ensure that drinking water standards continue to be met during development and planning. Discussion on the application of the Source Water Guidelines will be discussed in the planning portion (Section 3.2.2.4) of this Annual Report.

#### **3.1.2.4 Chollas Creek Enhancement Plan**

The Chollas Creek Enhancement Plan was previously identified as a planning activity. However, review of the Watershed URMP revealed that it is more appropriate as a water quality activity since many of the activities are focused on restoring segments of Chollas Creek. As stated in the Watershed URMP, examples of activities in the Chollas Creek Enhancement Plan include removing concrete sections of the channel, widening the floodplain, and creating and restoring wetland and transitional upland habitats. These improvements will re-establish the natural structure, dynamics, and hydrologic functions within applicable creek segments and restore affected beneficial uses. The project will also develop and implement two water quality-based education and outreach campaigns in the Chollas Creek area targeting residents, businesses, and school children. It should be noted that portions of this program that overlap into education will be discussed separately as part of the education activities.

During this reporting period, the City of San Diego and its project partners coordinated to revise and submit a final Chollas Creek Enhancement Plan scope of work and contract to be signed by the State Water Resources Control Board (State Board). The scope of work and contract were submitted in May 2004, and were approved by the State Board in July 2004. In addition, the City completed a six-month long consultant hiring process so that an engineering consultant would be "on board" to begin work immediately after the contract with the State Board was approved. The consultant was hired in June 2004, and began conducting a preliminary site assessment to evaluate the benefits and feasibility of restoring six different segments of Chollas Creek. Components of this activity will occur through 2007.

### 3.1.3 New Water Quality Activities

During the reporting period, the San Diego Bay Copermittees identified several projects that were discussed in the Watershed URMP, but not specifically included as water quality activities. Additionally, the October 8, 2004 letter from the RWQCB requested that San Diego Bay Copermittees identify all activities specific to the watershed that are currently occurring or are planned to occur in the future. The programs below were identified as valuable watershed activities that are currently occurring, yet were not previously identified as water quality activities. The San Diego Bay Copermittees have added these activities to the existing list of water quality activities and will continue to discuss them in future reports.

#### 3.1.3.1 *Regional Harbor Monitoring Program*

In July 2003, the RWQCB, under §13225 of the California Water Code, requested the development of a coordinated and comprehensive harbor water quality monitoring program for harbors in the San Diego region. San Diego Bay is one of the four harbors included in the Regional Harbor Monitoring Program (RHMP). The objectives of the RHMP are based on and directed at the five major questions:

1. What are the contributions and spatial distributions of inputs of pollutants to harbors in the San Diego Region and how do these inputs vary over time?
2. Are the waters in harbors safe for body contact activities?
3. Are fish in harbors safe to eat?
4. Do the waters and sediments in the harbors sustain healthy biota?
5. What are the long-term trends in water quality for each harbor?

The intent of the RHMP is to coordinate monitoring efforts within harbors in the San Diego region while also providing water quality status and trends information and assessing the surface water's abilities to support designated beneficial uses. It employs different types of monitoring efforts to address the various questions posed by the RWQCB. The largest single component of the RHMP is the ambient (core) monitoring program. Core monitoring is the collection of information about the status of the physical, chemical, and biological indicators. It is focused on collecting information on baseline conditions and the effects of pollution sources.

This information can be used through time to compare trends in those indicators, status of those indicators while also surveying the general water quality and condition of aquatic life in the harbors, and determining whether beneficial uses are being met.

The San Diego Bay Copermittees believe the RHMP can be useful to the San Diego Bay Watershed for several reasons. The monitoring typically provides trend information by being repeated at a specified frequency to obtain statistical trend data for the indicators. This will enable water quality improvements or degradations to be more readily identifiable. Furthermore, the RHMP is designed to integrate with existing monitoring that is regularly conducted in the region, including stormwater monitoring, other permit compliance monitoring, regional Bight monitoring, and special focused studies and is designed to integrate with the State's Surface Water Ambient Monitoring Program.

During this reporting period, development of the RHMP occurred as follows. The RHMP Workgroup selected a consultant and developed a harbor monitoring plan that met the RWQCB requirements. Monthly progress reports were submitted to the RWQCB from September 2003 – January 2004 documenting the status of program development. The plan was submitted to the RWQCB in February 2004. The following year (2004-2005) will be focused on finalizing the technical details, preparing a sampling plan and Quality Assurance Project Plan (QAPP), and selecting sampling locations. Sampling is expected to commence in July 2005.

#### *3.1.3.2 Downtown Piers, Switzer Creek, Grape St TMDL*

While TMDL efforts previously were not identified as water quality activities, many of the San Diego Bay Copermittees have been involved in the B Street/Broadway Piers, Downtown Anchorage TDML for several years. It is possible that many of the efforts or contributions of the San Diego Bay Copermittees have been overlooked. In 2003-2004, several of the San Diego Bay Copermittees participated in the B Street/Broadway Piers, Downtown Anchorage TMDL by performing analyses (over \$150,000 was contributed for sediment analysis for Phase I and Phase II work), attending public meetings, and providing comments on the draft TMDL report. A summary of the work conducted during the 2003-2004 reporting period is listed below.

The majority of the TDML Phase I study was conducted during this reporting period. The Phase I component included reassessment of sediment conditions at the three study sites and was designed to answer the following questions: 1) What is the spatial extent of contamination and adverse biological impacts in the sediments at each site; 2) Which areas are most impaired; and, 3) Are the sediment contaminants likely to enter the food chain? Data from Phase I will be used to identify areas of greatest concern for detailed investigations to support the development of TMDLs and cleanup plans in Phases II and III.

In February 2003, sediment samples were collected and screened to confirm the location of reference stations. In July 2003, sediment samples were collected at all study sites and

reference stations for a comprehensive sediment assessment. Twenty-seven locations were sampled (six in Switzer Creek, twelve at B Street/Broadway Piers and nine at the Downtown Anchorage). Six reference stations were also sampled at various locations in the bay. Samples were analyzed in Fall 2003 for chemistry, toxicity, benthic community, and bioaccumulation. The draft Phase I report was available for stakeholder review in March of 2004 (Anderson et. al, 2004). A public workshop on the Phase I draft report was held in May 2004 and was attended by the Port of San Diego, City of San Diego, City of La Mesa, and City of Lemon Grove, as well as stakeholders from the environmental groups.

The Phase II studies emphasize temporal variability of chemical contamination, toxicity, and bioaccumulation at Phase I sites identified as having the highest contamination. Sampling for chemistry, toxicity and bioaccumulation was conducted in February 2004. Phase II sampling for benthic community structure will occur in July 2004.

A summary of the findings from the draft Phase I TMDL report follows. For more information, please refer to:

[http://www.waterboards.ca.gov/sandiego/tmdls/tmdl\\_files/sd%20bay%20marine%20sediments/Draft%20SD%20Phase%20I\\_BA%20v2.pdf](http://www.waterboards.ca.gov/sandiego/tmdls/tmdl_files/sd%20bay%20marine%20sediments/Draft%20SD%20Phase%20I_BA%20v2.pdf).

In general, sediments from B Street/Broadway Piers, Downtown Anchorage and Switzer Creek were less contaminated than indicated in previous assessments conducted as part of the Bay Protection and Toxic Cleanup Program.

- At Switzer Creek, two stations were toxic to amphipods, but no samples were toxic to sea urchin gametes or bivalve embryos. Two stations had degraded benthic community structure based on the Relative Benthic Index (RBI), but benthic community structure was comparable to reference conditions based on the Benthic Response Index (BRI). Minimal metal bioaccumulation was observed, and PAH bioaccumulation was greater than that observed at the reference stations.
- None of the B Street/Broadway Piers stations had degraded benthic community structure based on the RBI or BRI methods. Minimal metal bioaccumulation was observed, and PAH bioaccumulation at some of these stations was greater than that observed at the reference stations.
- At the Downtown Anchorage stations, no degraded benthic community structure was observed based on the RBI or BRI methods. Minimal metal and PAH bioaccumulation was measured, and no significant organochlorine compound bioaccumulation was observed.

### **3.1.3.3 Chollas and Paleta TMDLs**

This TMDL was initiated in 2000. The majority of the sampling and analysis work is being conducted by Southern California Coastal Water Research Project (SCCWRP). The Port and the City of San Diego were involved and participated in stakeholder meetings early on when these sites were classified as Toxic Hotspots. The Toxic Hotspots program has since been

integrated into the TMDL efforts because these sites were identified as 303(d) impaired water bodies largely due to their identification in the Toxic Hotspot program.

There was no sampling conducted as part of the TMDL during the 2003-2004 reporting period. In general, most of the Phase I sampling occurred in 2001. Data analysis and report preparation were the major efforts conducted during this reporting period and as stated those efforts were performed by SCCWRP at the request of the RWQCB. As stated in the discussion on the B St./Downtown Anchorage TMDL, the phase I study assesses contamination. Phase II and III will determine magnitude and sources. It is believed that the San Diego Bay Copermittees will become more involved in source identification and control, once the Phase II and III work is complete.

#### *3.1.3.4 Shelter Island Yacht Basin Copper TMDL*

The Shelter Island Yacht Basin (SIYB) has been identified as impaired for dissolved copper, primarily as a result of leaching of copper-based antifoulant hull paints. A TMDL for dissolved copper in the SIYB has been underway for several years. While the dissolved copper issue appears to be more of a site-specific problem, rather than watershed, it remains a concern for the San Diego Bay Copermittees because other marinas within the watershed may be subject to similar TMDLs if high copper levels are identified.

The San Diego Bay Copermittees' efforts have primarily been focused on reviewing draft documents, attending public workshops and board meetings, and providing comments on the draft TMDL reports. Additional efforts have been made by the Port to meet with SIYB marinas to further discuss the TMDL. This input and working with the RWQCB is a critical piece to developing a TMDL that will improve the water quality of SIYB.

The following events occurred during 2003-2004 reporting period. The RWQCB released a Draft TMDL Report on October 24, 2003. The Port and other watershed stakeholders attended the public workshop (November 20, 2003) and public hearing (December 10, 2003) and provided comments on the draft report. The period for submitting written comments on the October 2003 Draft TMDL Report closed in January 2004. The RWQCB intended to vote on the TMDL in February, however, due to the number and nature of comments received, the decision was made to rework the TMDL implementation plan and revise the draft. The RWQCB made substantial revisions to certain sections of the Draft TMDL Report and as of the end of the fiscal year, a revised draft was not available. It is anticipated that the new draft SIYB TMDL will be available to the public in Fall 2004. San Diego Bay Copermittees will continue their efforts to review the new draft and participate in the process until implementation of the TMDL begins.

### *3.1.3.5 Jurisdictional Programs*

Several jurisdictional programs have elements that, when implemented successfully by each jurisdiction, result in watershed water quality improvements. These include conducting dry weather monitoring and performing facility inspections. Although jurisdictional, their significance to improving water quality (throughout the watershed) cannot be overlooked. For that reason, these elements are identified as watershed activities. Discussions of each, however, will be contained in individual Copermittee Jurisdictional reports.

## **3.2 Land Use Planning Activities**

Land use planning activities identified in Section 6 of the San Diego Bay Watershed URMP were designed to meet the Watershed URMP primary objective #2:

- *Integrate watershed principles into land use planning.*

The original land use planning activities were reviewed and assessed during the 2003-2004 reporting period. Determinations were made as to status of the original activities (ongoing or completed), appropriateness of the activity to meet the above stated objective and address priority pollutants, and identification of new or additional activities. Significant discussion also revolved around the role of land use planning conducted at regional, watershed, and jurisdictional scales. The following section provides a discussion of the planning strategies identified in the Watershed URMP, subsequent revisions to the strategies/activities, and a discussion of additional or new activities implemented during this reporting period.

### **3.2.1 Individual Jurisdictional Planning Goals – General Plan Updates**

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. 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 following are updates from watershed Copermittees that are addressing water quality, water protection, and jurisdictional collaboration in their General Plan updates.

#### *3.2.1.1 City of Chula Vista*

The City's comprehensive General Plan Update (GPU) is nearing completion. The GPU program is a nearly four-year effort, currently planned for public hearings in March 2005. The work plan included the preparation of a citywide drainage study and assessment and a water quality baseline study to identify planning issues and policy implications that need to be

addressed through the GPU, including compliance with the Municipal Permit and NPDES regulations.

Throughout the GPU process, the City has solicited and received significant public input with respect to vision, goals, and objectives and has conducted numerous public workshops to present and solicit input on alternative land use concepts. Draft GPU elements, including an Environmental Element that addresses water quality, have been completed.

According to the Draft Environmental Element: “With further growth and redevelopment in Chula Vista, the protection of local and regional water resources must be adequately addressed. Chula Vista will continue its efforts to reduce the discharge of pollutants into the municipal storm drain system and natural water bodies in accordance with established NPDES standards and watershed planning efforts involving the City.”

One of the objectives of the Draft Environmental Element is to “Protect and improve water quality within surface water bodies and groundwater resources within and downstream of Chula Vista.”

The following water quality policies are contained in the Draft Environmental Element:

- Ensure safely swimmable and fishable surface waters through careful management of land uses and activities within Chula Vista.
- Pursue safe alternatives to traditional pest management methods in order to reduce toxics in urban runoff and large open uses of land (e.g., golf courses, parks, agricultural lands).
- Educate residents, business owners and city departments about feasible methods to minimize the discharge of pollutants into natural drainages and the municipal storm drainage system.
- Ensure compliance with current federal and state water quality regulations, including the implementation of applicable NPDES requirements and the City’s Pollution Prevention Policy.
- Encourage and facilitate construction and land development techniques that minimize water quality impacts from urban development.
- Maximize the protection of potable water supply resources from pollutants.
- Collaborate with other applicable jurisdictions in the development and funding of regional watershed management plans.

### *3.2.1.2 County of San Diego*

The County of San Diego is continuing the process of updating its General Plan through the GP2020 Project. Water quality and watershed protection principals will be incorporated in the updated General Plan Elements and Community Plans.

One foundation of the Land Use Element is the land-use designation map. At the present time, County Staff has completed the residential portion of this map and are working on the

commercial and industrial land use designations, including the related portions of the Land Use Element. Once the Land Use Element is complete, the County will focus their work on revising the remaining elements required under state law.

Although formal policies have not yet been incorporated into the General Plan update, staff is reviewing all land use map changes with respect to watershed-specific protection issues including habitat connectivity, water quality, flood plain protection, and water supply. In addition, the County intends to integrate standardized language on water quality and watershed protection into its community plans.

Given the size and scope of the general plan update effort, these activities have taken much longer than originally planned. At this time, the County anticipates that drafts of the elements would be available in Summer 2005. Specific updates to the Community Plans would be developed once the Elements are completed. For further information regarding proposed schedules, updates, and contacts please visit the County of San Diego website at <http://www.sdcounty.ca.gov/cnty/cntydepts/landuse/planning/GP2020/index.html>

#### *3.2.1.3 City of San Diego*

The San Diego City Council adopted the Strategic Framework Element and Action Plan On October 22, 2002. This work program is based upon priority actions to be accomplished by 2008. 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.

On February 10, 2004, the City Council approved five projects to become Pilot Village demonstration projects for the City of Villages strategy of smart growth in San Diego (<http://www.sandiego.gov/cityofvillages/pvp/index.shtml>). The projects that were selected are dispersed throughout the city and represent a variety of approaches and styles. Of the five villages chosen, three are located within the San Diego Bay Watershed. For additional and more detailed information about the City of Villages strategy and the Pilot Village Program, refer to the Unified Watershed URMP.

#### **Mid-City Transit Interchanges Project (MCTIP)**

This project is located along El Cajon Boulevard within the Normal Heights and Kensington-Talmadge communities. It provides a range of housing types varying from row homes adjacent to existing single family homes to three- and four-story apartment units in the center of the project site as well as loft-over-retail uses along El Cajon Boulevard. It includes 366 units, with 20% of those affordable housing. Over 37,000 square feet of commercial space is proposed that will reduce the number of off-site trips for some residents. The site design is respectful of the existing, older community form. As a Pilot Village, MCTIP proposes to implement a design that integrates watershed

planning principles into land use. The project proposes a variety of housing types and incorporates a pedestrian spine for linkages throughout the site as well as valuable civic space. The project design is respectful of existing densities and utilizes the adjacent freeway as an asset. In addition the project is positioned to encourage use of public transportation routes with at least four well-utilized bus routes that serve the site.

### **North Park Project**

The North Park project is in a redevelopment area along University at 30th Street within the Greater North Park community plan area. The project is served by four bus routes, including one of the most heavily used bus routes in the city. North Park includes 483 existing and proposed residential units with neighborhood commercial retail, art and artisan galleries. The streetscape is proposed for improvement. A number of catalyst projects including North Park Theatre, Walgreens, and the Western Pacific condominium project are also incorporated into the North Park proposal. As a Pilot Village project, North Park is an example of how planning can facilitate the implementation of projects that put watershed planning principles into practice. Through the re-use of existing urban areas, easy access to public transportation and multiple land uses, the project allows for less sprawl, less and/or shared trips and more frequent pedestrian travel.

### **Village Center at Euclid and Market**

This project is located at the intersection of four neighborhoods in the southeastern area of San Diego: Chollas View, Lincoln Park, Emerald Hills and Valencia Park. It builds on the existing Market Creek Plaza development. The village site design resembles a "hill town," taking advantage of the topography with terraced residential units allowing for views of Chollas Creek and beyond. The site design responds and respects Chollas Creek as an urban waterway and a linear park for the adjacent residents and the community. In addition to residential development, land uses include job training, youth-centered employment, neighborhood retail and office, an amphitheatre on the creek, and recreational facilities. The village site is well served by transit. The Euclid trolley station is on the site. This location provides access to several bus routes. The design is also walkable, with a network of trails, as well as pedestrian and bicycle paths. By incorporating such varied design elements, the Village Center at Euclid & Market is another example of a Pilot Village project that integrates watershed planning principles with land use planning.

## **3.2.2 Current Inter-Jurisdictional Planning Collaborative Mechanism**

Traditional land use planning is difficult to accomplish across jurisdictional boundaries. To meet this challenge, the San Diego Bay Copermittees are working to develop and implement alternate mechanisms that address watershed planning issues. The Municipal Permit requires that Copermittees identify and implement mechanisms for watershed planning. The following sections briefly describe the inter-jurisdictional planning mechanisms in place in the San Diego

**San Diego Bay Watershed Urban Runoff Management Program 2003-2004 Annual Report**  
**Section 3—Implementation**

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Bay Watershed and also discuss how each is being implemented. Table 3-4 summarizes the Current Inter-Jurisdictional Planning mechanisms used by the San Diego Bay Copermittees and where to find additional discussion on each program.

Table 3-4: Current Inter-Jurisdictional Planning Mechanisms

<b>Inter-Jurisdictional Planning Mechanism</b>	<b>Short Term or Long Term</b>	<b>Location</b>
Memorandum of Understanding (1991)	Long Term	Unified Watershed URMP
Memorandum of Understanding (2001)	Short Term	Unified Watershed URMP
CEQA	Long Term	Unified Watershed URMP
Public Hearings	Long Term	Unified Watershed URMP
The Multiple Species Conservation Program	Long Term	Unified Watershed URMP and Section 3.2.2.3
MHPA Land Use Adjacency Guidelines	Long Term	Unified Watershed URMP
<b>Inter-Jurisdictional Planning Mechanism</b>	<b>Short Term or Long Term</b>	<b>Location</b>
Otay River Watershed Management Plan	Long Term	Section 3.2.2.1
Otay River Special Area Management Plan	Short and Long Term	Section 3.2.2.2
Source Water Protection Guidelines	Short and Long Term	Section 3.2.2.4

A) Notification Mechanisms

Before certain discretionary projects are developed, 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). Notification mechanisms such as the MOU, CEQA process, and public hearings ensure that stakeholders are aware of projects and are provided the opportunity to comment on issues that could potentially impact them. While project notifications occur within the watershed, the notification process itself is more regional in nature and, as such is discussed in the Unified Document. Also, please refer to the individual Jurisdictional URMPs for detail on new and redevelopment project processing requirements and specifics on projects occurring within each jurisdiction.

B) San Diego Bay Watershed Planning Mechanisms

Alternative planning mechanisms used by the San Diego Bay Copermittees focus on consideration for watershed management in programs that can be implemented across jurisdictional boundaries. In general, this includes participation in watershed management

plans, utilizing regional guidance documents, and increasing public participation. Long term planning ensures the protection of beneficial uses, preservation of open space lands, and ensures a balance of land uses when planning future development. As noted above, several of the mechanisms encourage and/or rely on stakeholder input and utilize this input to guide the program. The planning activities implemented in 2003-2004 within the San Diego Bay Watershed are described below. Please refer to the individual Jurisdictional URMPs for additional information on these projects, where applicable.

#### *3.2.2.1 Otay River Watershed Management Plan*

As with other coastal watersheds in southern California, the landscape along the coastal plain in proximity to the watershed's outlet has rapidly developed, with less development occurring within the mountainous inland areas. Urbanization and other landscape uses are anticipated to continue, as are efforts to protect, enhance, and restore the remaining upland and aquatic resources within this watershed. The Otay River Watershed Management Plan (ORWMP) involves: characterizing the Otay River Watershed's various resources and land uses; identifying goals and objectives; assessing and prioritizing threats to existing beneficial uses and natural resources; and identifying implementation strategies for the protection, enhancement, and restoration of beneficial uses and natural resources, including a water quality monitoring program to monitor, maintain, and enhance water quality. This Framework Management Plan is intended to be consistent with the applicable local General Plans, local resource plans and programs, the Otay River Watershed Special Area Management Plan (SAMP), the Municipal Stormwater Permit, and should provide an implementation strategy that assures high water quality standards and protects natural aquatic and upland resources in this watershed.

On March 24, 2004, the County of San Diego, City of Chula Vista, City of Imperial Beach, and the Port of San Diego entered into a Joint Exercise of Powers Agreement (JEPA) to develop and adopt the ORWMP. The City of San Diego joined the JEPA on December 7, 2004.

Two Public meetings for the ORWMP (and SAMP) were held during the reporting period (August 13, 2003 and June 22, 2004). These meetings provided a mechanism for public participation and stakeholder input into the planning processes that will guide development of the ORWMP. The first meeting included a welcome by Chairman Greg Cox to introduce the Project Team and provide information regarding the Land Use Planning Process, ongoing regional projects in the Otay River Watershed and overviews of the ORWMP and SAMP. Specific items for each of the plans were discussed including project management, goals, function, and public participation. Attendance included private citizens, representatives from Otay River Valley Park, and representatives from RWQCB (Bruce Posthumus), Hanson Aggregates, the San Diego Audubon, San Diego Environmental Health Coalition, Cal-Am Water, BLM, South Bay San Diego Regional Alliance, SWIA, and the Otay Land Company. Also in attendance was a representative from the San Diego Mayor's office.

The second public meeting defined the roles and responsibilities of the working group and discussed goals identified by each of the interest groups. In addition to representatives from the County, ORWMP consultants, and other JEPAs signatories, representatives from the Otay River Valley Park, two representatives from the RWQCB, Wildlands, the San Diego Audubon Society, the California Native Plant Society, the Sierra Club, SWIA, Otay Land Company, McMillin Co., Cal-Am Water, Sempra and private citizens were in attendance. The following elected officials were also present: California Senator Denise Ducheny; County Supervisor Greg Cox and San Diego Mayor Dick Murphy.

#### *3.2.2.2 Otay River Special Area Management Plan*

The County, in coordination with the Corps, USEPA and the Cities of Chula Vista and Imperial Beach, has initiated the Special Area Management Plan (SAMP) for the Otay River. A SAMP is a comprehensive plan that provides for natural resource protection and reasonable economic growth within geographic areas of special sensitivity. This comprehensive planning effort is to be used to assist the federal, state and local regulatory agencies with their decision making and permitting authority to protect aquatic resources. The general objectives of the study are to: (a) protect and enhance aquatic resources; (b) develop a comprehensive aquatic resource preservation, enhancement, and restoration plan; (c) accommodate development activities while meeting goals of the study through issuance of a General Permit under Section 404(e) Guidelines of the Clean Water Act; (d) identify potential funding sources and mechanisms for land acquisition, conservation easements, development of initial restoration plans, and operation and long-term management plans; (e) improve regulatory and resource agency coordination; and (f) attempt to reduce the workload of other regulatory and resource agencies by addressing their mandate in the study.

During the 2003-2004 reporting period, a joint meeting of the SAMP and ORWMP occurred on August 13, 2003. The content of this meeting is discussed in detail in Section 3.2.2.1, above.

#### *3.2.2.3 Multiple Species Conservation Program (MSCP)*

The San Diego County Board of Supervisors established the Multiple Species Conservation Program (MSCP) as an integral part of the County's efforts to protect parks and open space. The protection of sensitive plant and animal species by the MSCP eliminates the need to list the species as endangered under Federal and State Endangered Species Acts and reduces the costly permit process for private landowners and public agencies. The goal of the MSCP (a 50-year program) is to maintain and enhance biological diversity in the region and maintain viable populations of endangered, threatened, and key sensitive species and their habitats. Not only are endangered and threatened species protected by the MSCP, but the residents of the community will benefit from this preservation of the natural environment as well.

The MSCP is a cooperative effort among the County and other local jurisdictions and the U.S. Fish and Wildlife Service and the California Department of Fish and Game (the Wildlife Agencies). These public partners are working with various private landowners, conservation

groups, and community planning groups, developers and other stakeholders in assembling the preserve. Planning for the 172,000-acre preserve (98,379 acres are in the unincorporated area) also promotes regional economic viability through streamlining the land use permit process – a significant benefit to landowners. The MSCP Outreach Committee consists of members from the County Departments of Planning and Land Use, Parks and Recreation, Public Works and Environmental Health, the City of San Diego, USFWS, CDFG, Bureau of Land Management, and other stakeholders. The MSCP Outreach Committee’s objectives include providing the public with information about the MSCP and educating young people about the importance of the environment and how it adds to their quality of life.

The Otay Watershed, which is within the San Diego Bay Watershed URMP, lies almost entirely within the County of San Diego MSCP South County Subarea Plan. Approximately 98,379 acres -- including 4,142 acres of wetland habitat -- will be conserved within the current South County MSCP Sub-area Plan. Within the Otay River watershed, 55,071 acres of upland and 1,118 acres of wetland habitats will be protected.

During the reporting period, the MSCP Outreach Committee met monthly and published a quarterly newsletter, MSCP News, providing up-to-date information about the MSCP. The Committee was also involved in many events specific to (or located within) the San Diego Bay Watershed, including:

- Earth Fair
- Various Earth Day beautification projects
- Watershed Awareness Week
- National Trails Day
- The Discovery Kit Program at Louis A. Stelzer County Park
- Bonita Vista High School’s riparian habitat restoration at Chula Vista Wetlands
- West Hills High School’s Ranger Program
- Participation in the Sweetwater High School Wellness Fair
- County of San Diego Land Use and Environment Group Employee Fair
- “Urban Planning In The Classroom” for high school students
- Numerous classroom presentations
- Distribution of “What Now?” post-fire flyer

#### **3.2.2.4 Source Water Protection Guidelines**

The City of San Diego created the Source Water Protection Guidelines (Guidelines) as a tool to review development projects within the San Diego Bay Watershed and other watersheds where the City has surface water resources. As projects are presented to the City for review, the Guidelines are used to provide comment on developments in watersheds where there are possible impacts to City Water Department surface water resources. The Guidelines were developed to be voluntary in nature, but will be presented to the San Diego City Council committees in the coming year to advertise their availability. Additionally, the Water Department

staff will be reaching out to City staff and planning staff at other agencies to make them aware of the existence of the Guidelines. They will also ask other jurisdictions to allow for City Water Department Staff to review development in watersheds where Department surface water resources are located. City Water Staff has also volunteered to make a presentation to the San Diego Bay Watershed URMP Group. During 2003-2004, a draft form of the document was tested by the City of Chula Vista to review developments in that jurisdiction near the Otay Reservoirs.

### **3.3 Educational Activities**

Education activities were discussed in Section 8 of the San Diego Bay Watershed URMP. These activities were identified during Watershed URMP development and were designed to meet Watershed URMP primary objective #3:

- *Enhance public understanding of sources of water pollution.*

The following section presents the status of the originally proposed Watershed URMP activities and discusses any revisions to these activities and the addition of any new activities implemented during this reporting period.

It should be noted that Educational Activities represent another aspect of Copermittee compliance with the Municipal Permit that reaches across jurisdictional, watershed, and regional efforts. Educational messages and methods are similar at the jurisdictional, watershed, and regional levels. These similarities are related as much to the audiences being addressed as they are to the limited variety of effective educational tools. There are also economies of scale that favor the coordination and integration of educational efforts across the Copermittee jurisdictional, watershed, and regional programs. In fact, in developing Section 8 of the San Diego Bay Watershed URMP, the San Diego Bay Copermittees leveraged these overlapping programs to maximize the benefits that could be achieved. The overlap between these various program levels is apparent in the following discussion and tables.

This section describes actions taken by the San Diego Bay Copermittees during this reporting period to enhance the public's understanding of basic watershed principles and sources of surface water pollution. Increasing public awareness about the importance of individual actions in protecting our water resources and promoting watershed stewardship are crucial components of the educational program being implemented in the San Diego Bay Watershed.

It should be noted that additional efforts were undertaken during 2003-2004 to develop and submit a grant proposal for an education program partnering the San Diego Bay Copermittees with the San Diego Zoo. The *Watershed Stewards Project* model education program included components for creek clean-ups, wetland restoration and in-classroom training about the watershed and pollution. Although the *Watershed Stewards Project* grant proposal was not accepted, the planning and coordination with the zoo and other environmental groups took

tremendous effort on behalf of the Copermittees. The San Diego Bay Copermittees are continuing to pursue other grants to implement this program.

### 3.3.1 Education Action Plan

The Education Action Plan of the San Diego Bay Watershed URMP identified actions to be undertaken by the participating jurisdictions over the short and long term to develop and implement the watershed education programs. The various aspects of the originally proposed San Diego Bay Watershed Education Action Plan, the programs being implemented for each aspect, and the watershed constituents of concern addressed by each of these items are presented in Table 3-5. The information in Table 3-5 is specific to the San Diego Bay Watershed and the programs being implemented by the San Diego Bay Watershed Copermittees.

Two of the headings in Table 3-5 relate directly to the headings found in Table 8-2 of the San Diego Bay Watershed URMP, namely the “tasks” and the “target audience.” Table 3-5 features “program elements” which briefly convey the major sub-categories of activities under each task. Rather than listing the number of individuals estimated to have been reached by each subcategory activity, the number of events has been included as a more representative summation of the education and outreach efforts. There is another heading describing the overlapping nature of these educational activities across jurisdictional, watershed, and regional boundaries. The table also provides an indication of the jurisdiction that participated or provided the opportunities for certain types of educational activities. Finally, Table 3-5 shows the relationship of these activities to educate the public about watershed concepts and surface water pollutants – especially those pollutants found to be constituents of concern in the San Diego Bay Watershed. Additional details on various tasks and elements of the Education Action Plan are provided in the summaries following Table 3-5. The information used to compile Table 3-5 can be found in Appendix D.

#### *3.3.1.1 Public Presentations and Media – Watershed Element*

As initially proposed, the Public Presentations and Media – Watershed Element of the Education Action Plan was designed to incorporate general watershed, receiving water, and stormwater pollution prevention concepts and principles into existing and planned public presentation and media opportunities at the jurisdictional level. The San Diego Bay Copermittees have used a variety of means to meet this objective and will continue to evaluate and improve their effectiveness. For purposes of this Annual Report, the Public Presentations and Media element of the Education Action Plan have been subcategorized under six sub-headings as shown in Table 3-5, namely:

- Jurisdiction Stormwater-specific Events. These efforts are typically jurisdictional staff presentations to civic and business groups that specifically discuss watershed issues, stormwater COC, BMPs, and stormwater regulatory requirements.
- Jurisdiction-Hosted Events. The San Diego Bay Copermittees have made efforts to present stormwater and watershed education information at various functions hosted by other departments within their respective jurisdictions, such as a municipal Fire Station Open House.
- Community-Hosted Events. The San Diego Bay Copermittees have presented watershed and stormwater education at various events hosted by community and private groups within their jurisdiction, such as hosting an information booth at local walking/running race events or trade association conferences.
- Festival Participation. Similar to the opportunities to share education materials at events hosted by local community groups or the jurisdictions themselves, community festivals, such as the San Diego County Fair, provide another venue for public outreach and education.

**San Diego Bay Watershed Urban Runoff Management Program 2003-2004 Annual Report**  
**Section 3—Implementation**

Table 3-5 Summary of Education Activities for the 2003-2004 Reporting Period

Tasks from the WURMP Education Action Plan	Target audience	Program Elements *	Number of events	Jurisdictional, Watershed, or Regional Program	Participating Jurisdictions	Concepts/Constituents of Concern Addressed					
						Watershed concepts	General Surface Water concepts	Copper/Zinc	Diazinon	Bacteria	Turbidity/TSS
Public Presentations and Media - Watershed Element	General public, Residential, Commercial/Industrial, Construction, Municipal	Jurisdiction Stormwater-specific Events	14	J, W	Coronado, Chula Vista, National City, County, and All	x	x	x	x	x	x
		Jurisdiction-Hosted Events	17	J	All	x	x	x	x	x	x
		Community-Hosted Events	31	J	Coronado, Chula Vista, County, and All	x	x				
		Festival Participation	7	J, W, R	Coronado, Chula Vista, County, and All	x	x				
		Print Media	11	J	Coronado, National City	x	x				
		Public Service Announcements	6,648	R	San Diego and All	x	x			x	
School Programs	K - 12 children	Jurisdiction Staff Presentations	44	W	All	x	x		x	x	x
		Jurisdiction-Sponsored Presentations	199	W	All	x	x		x		
		Field Trips	169	J, W	All	x	x				
		Project SWELL	300	W	San Diego and Port	x	x	x	x	x	x

**San Diego Bay Watershed Urban Runoff Management Program 2003-2004 Annual Report**

**Section 3—Implementation**

Tasks from the WURMP Education Action Plan	Target audience	Program Elements *	Number of events	Jurisdictional, Watershed, or Regional Program	Participating Jurisdictions	Concepts/Constituents of Concern Addressed					
						Watershed concepts	General Surface Water concepts	Copper/Zinc	Diazinon	Bacteria	Turbidity/TSS
Integrated Pest Management	General Public, Residential, Commercial/Industrial, Municipal	Jurisdictional IPM Seminars	12	J, W, R	Chula Vista, National City, and Port	x	x		x		
		San Diego Regional IPM Program	NA	W, R	All	x	x		x		
Which is your watershed?	General public, particularly children	Region-wide poster which identifies watersheds and receiving waters	1	W, R	All	x					
Watershed brochure	General public	See discussion in text.	N/A	N/A	N/A						
Project Clean Water Watersheds Website	General public	Website with information related to surface water quality issues, watersheds, and pollutants	4,311	W, R	All	x	x	x	x	x	x
Partners in Clean Water	General public	Cleanup Events	21	J	Coronado, Chula Vista, National City, County	x	x				
		Citizen Monitoring/Training	2	J, W	Imperial Beach and County	x	x	x	x	x	x
		Storm Drain Stenciling Events	1	J	Chula Vista	x	x				
		“Common Ground” Grant	NA	W	La Mesa, Lemon Grove, San Diego, Port, County	x	x	x	x	x	x
Chollas Creek Enhancement Project	General Public and Commercial/Industrial	Chollas Creek Enhancement Project	NA	J, W	La Mesa, Lemon Grove, San Diego, Port, County	x	x	x	x	x	x

\*See text for further discussion

- Print Media. Several Copermittees have made efforts to attract media attention. The City of Coronado has been successful at gaining print media coverage for their watershed and stormwater management efforts and the results of their programs. The San Diego Bay Copermittees continue to explore opportunities at making coordinated efforts to garner print media coverage as an outreach and education mechanism.
- Public Service Announcements. The THINK BLUE media campaign continues to be the primary mechanism for conducting watershed and stormwater pollution prevention education and outreach throughout the San Diego Bay Watershed and the entire region. The 2003-2004 reporting period represents the third straight year that THINK BLUE has been in operation. THINK BLUE provides outreach to the general public through public service announcements in both English and Spanish. The City of San Diego conducts a public survey annually to evaluate the effectiveness of the campaign, which in turn directs the need for revisions to the message or outreach mechanisms. THINK BLUE continues to be one of the most influential and cost-effective methods for conducting outreach. The THINK BLUE public service announcements (PSAs) were broadcast over radio and television more than 6,500 times during the reporting period. During 2004-2005, both the Chollas Creek Enhancement Plan and the San Diego Regional IPM Education and Outreach Project will provide for education and outreach activities in the Chollas Creek watershed. These efforts will work in conjunction with THINK BLUE.

#### *3.3.1.2 School Programs: San Diego Bay Watersheds*

School children are a primary focus of the Education Action Plan. The San Diego Bay Copermittees continue to focus on efforts to effectively promote watershed awareness and to initiate positive behavioral changes in children. Table 3-5 shows the four main sub-categories used to describe the education and outreach efforts directed at school children during this reporting period.

- Jurisdiction Staff Presentations. Staff from the jurisdictions in the San Diego Bay Watershed made more than 40 presentations at schools throughout the watershed. During these presentations, staff emphasized watershed issues and the general stormwater pollutants of concern. Chula Vista made a concerted effort to use staff presentations to reach this audience.
- Jurisdiction-sponsored Presentations. The County of San Diego and the Port of San Diego each partnered with the County Office of Education to bring watershed awareness opportunities to school children throughout the San Diego Bay Watershed. The County of San Diego funded the “Splash Lab” on visits to bring watershed and water quality messages to local schools. The Port funded

efforts by the “Green Machine” to bring watershed and IPM messages to local schools. The Port of San Diego also funds an effort by the Resource Conservation District of Greater San Diego to provide classroom demonstrations using the “Enviroscape” watershed model. The “Enviroscape” model provides a hands-on method of teaching children about sources of stormwater pollution throughout a watershed. These efforts will continue during 2004-2005.

- Field Trips. The San Diego Bay Watershed Copermittees provided local schools with more than 150 field trip opportunities to the Chula Vista Nature Center, the San Diego Maritime Museum, and local wetlands as an effective hands-on means of increasing watershed and water quality awareness in their students.
- Project SWELL  
Project SWELL is a collaborative effort between San Diego City Schools, the City of San Diego, the Port District, other municipalities, and non-profit organizations to establish comprehensive water quality and pollution prevention curricula in City schools. Begun in May of 2003, Project SWELL seeks to educate local school children about our region’s watersheds while also fostering a sense of stewardship in these future leaders that will provide long-term solutions to the region’s water quality problems. During the 2003-2004 school year, this innovative approach to learning began with the inaugural rollout of *Investigation 5* - reaching and teaching more than 6,000 5th graders in approximately 300 classrooms throughout San Diego City Schools. Project SWELL intends to reach the 2nd and 6th grades in the 2004-2005 school year, and 8th grade and high school students in the following year.

### *3.3.1.3 Integrated Pest Management Campaign*

The San Diego Bay Copermittees believe that educating the public to use Integrated IPM is one of the best ways to protect the beneficial uses of receiving waters throughout the watershed from the impacts of diazinon. IPM promotes the use of integrated, ecologically sound pest management programs. The City of Chula Vista and the Port of San Diego have organized local seminars regarding IPM for local residents, businesses, and public agency staff. Using grant monies on behalf of all the San Diego County Copermittees, the City of San Diego is leading efforts to develop and implement an IPM educational program aimed primarily towards the residential sector in order to induce positive changes in residents’ attitudes and behaviors concerning pesticide use around their homes. The project also specifically targets the TMDL for diazinon in the Chollas Creek sub-watershed. In 2004-2005, the City of San Diego will: a) implement a focused community-based educational program in the Chollas Creek watershed; and b) implement a water quality monitoring program for diazinon in the Chollas Creek watershed.

**3.3.1.4 *Which is your Watershed? A region-wide watershed poster***

This element of the Education Action Plan was completed during the reporting period. The element was originally conceived as a poster or map to inform the public about the defining features of a watershed – where the water bodies are, the high and low points, where water flows and where it discharges, and the various land uses within the watershed. The Copermittees envisioned using such posters and maps for each watershed in the region. To that end, the Copermittees initiated the process of developing a regional poster template, which incorporated major roads, watershed and jurisdictional boundaries, key water bodies, standardized watershed definitions and terms, and graphic images of the biomes within the region. In January of 2004, the Copermittees agreed to print a single poster that displayed all watersheds listed in the Basin Plan for the San Diego Region. Each San Diego Bay Copermittee received a copy and the format is available for use. Given the regional context first envisioned for this project, please see the 2003-2004 Unified Annual Report for more discussion on this item.

**3.3.1.5 *Watershed Brochure***

After further discussion of the effectiveness and cost of producing a brochure, the idea of a Watershed Brochure as originally presented in the San Diego Bay Watershed URMP Education Action Plan has been placed on hold. The brochure was envisioned as a spin-off of the watershed poster discussed above. At this time, the San Diego Bay Copermittees would rather use limited resources to develop a brochure specific to the San Diego Bay Watershed, than reproduce the regional watershed poster as a brochure. The idea of a watershed brochure, as originally conceived, is on hold until the concept can be adequately researched and funded.

**3.3.1.6 *Project Clean Water Watershed Website***

As in the previous year, the Project Clean Water (PCW) website ([www.projectcleanwater.org](http://www.projectcleanwater.org)) provided a venue for public education and outreach about the San Diego Bay Watershed. In addition, the San Diego Bay Copermittees continue to link their individual jurisdictional websites to PCW. Each of these websites present another mechanism for educating the public about watershed issues. These websites also function as public participation mechanisms. Please refer to the Public Participation section of this Annual Report (Section 3.4) for more information on this aspect of the PCW website for the San Diego Bay Watershed.

**3.3.1.7 *Partners in Clean Water***

The San Diego Bay Watershed Copermittees continue to focus on efforts to nurture existing and to develop new partnerships with our communities and the individuals and groups that share our concerns for the environment in general and our watershed in particular. Table 3-5 shows the four main sub-categories used to describe the education

and outreach efforts directed at these types of community partnerships during this reporting period.

- Cleanup Events. In addition to the obvious public participation aspects of a cleanup event, these events provide an opportunity to conduct education and outreach about watershed issues and general stormwater pollutants of concern. Chula Vista, Coronado, and the County of San Diego organized cleanup events during this reporting period.
- Citizen Monitoring/Training. Citizen Monitoring Training and Citizen Monitoring events also provide opportunities for public participation, as well as education and outreach about watershed issues and general stormwater pollutants of concern. The City of Imperial Beach and the County of San Diego conducted Citizen Monitoring events during this reporting period.
- Storm Drain Stenciling Events. The City of Chula Vista conducted a storm drain stenciling event with the general public at Voyager Park. These events are an effective means for increasing watershed and water quality awareness in the community.
- “Common Ground” Grant

The City of San Diego, in partnership with San Diego State University, San Diego Baykeeper, SANDAG, and other San Diego Bay Copermittees, has received a Costa-Machado Act of 2000 (Proposition 13) grant to implement the San Diego Watersheds Common Ground: San Diego Bay Watershed Demonstration Project. This project is intended to enhance the region’s capacity to understand the conditions of water resources and trends over time through several means, including: a) establishment of a Regional Water Monitoring and Resource Center; b) monitoring activities in support of Total Maximum Daily Load (TMDL) development addressing benthic community degradation and sediment toxicity; c) development of a Geographic Information System (GIS) database for water resources; and d) creation of an interactive web-based outreach, education, and decision-making tool. The goal of the San Diego Watersheds Common Ground project is not only to make the water quality data available to the public but also to present it in a manner so that it can be easily interpreted to facilitate decision-making and create better long-term understanding and stewardship of our local waters. During 2003-2004, the City of San Diego submitted a scope of work and contract agreement to the State Water Resources Control Board (State Board) for approval. The contract agreement was approved and executed by the State Board in June 2004. In addition to finalizing the agreement, the City and its project partners began preparation of memorandums of understanding (MOUs) between the project partners. These MOUs will be executed in early 2004-2005.

#### *3.3.1.8 Chollas Creek Enhancement Plan – Education Tasks*

As stated in Section 3.1.2.4 of this report, one of the objectives of the Chollas Creek Enhancement Plan is to develop and implement two water quality-based education and outreach campaigns in the Chollas Creek area targeting residents, businesses and schoolchildren (one such effort discussed under Integrated Pest Management above). During 2003-2004, the City of San Diego and its project partners coordinated the submittal a final scope of work and contract to the State Water Resources Control Board. Work will begin during 2004-2005.

### **3.4 Public Participation Activities**

Public participation during the development and implementation of the San Diego Bay Watershed URMP has been, and continues 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.

The following sections summarize the activities and efforts made by the Copermittees to encourage public participation during this reporting period. A complete list of public participation activities conducted within the watershed is included as Appendix E. Please note that this section only discusses the activities that were identified in the Public Participation section of the Watershed URMP and are specific to the San Diego Bay Watershed. The Copermittees have also conducted a number of regional programs and events involving the public in general water quality issues. Many municipalities have worked with stakeholders on efforts such as grant applications and water quality data collection. 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 preceding chapters.

#### **3.4.1 Stormwater Copermittee Collaboration and Community Workshops**

Stakeholder participation is vital to the success of watershed activities. The San Diego Bay Copermittees provided several forums during 2003-2004 that allowed various stakeholder groups to participate in Watershed URMP activities. Community workshops and activities that enhanced collaboration among San Diego Bay Copermittees are discussed below.

**San Diego Bay Watershed Urban Runoff Management Program 2003-2004 Annual Report**  
**Section 3—Implementation**

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**3.4.1.1 San Diego Bay Watershed URMP Meetings**

San Diego Bay Watershed URMP meetings were held regularly. These meetings provided a venue for public participation by allowing additional stakeholders to be involved with watershed efforts. The Workgroup met formally seven times between July 2003 and June 2004.

Table 3-6 presents a summary of the meetings held by the workgroup during 2003-2004, including an outline of the principal agenda items.

Table 3-6 Summary of San Diego Bay Watershed URMP Workgroup Meetings

Meeting Date	Number in Attendance	Principle Agenda Items
8/21/03	13	<ul style="list-style-type: none"> <li>✓ San Diego Bay Watershed Sub-Committees Report</li> <li>✓ Chollas Creek</li> <li>✓ Data Collecting &amp; Reporting</li> <li>✓ Data Analysis</li> </ul>
11/19/03	12	<ul style="list-style-type: none"> <li>✓ Review of Watershed URMP Annual Report Draft</li> <li>✓ Update on MEC Report</li> </ul>
12/04/03	10	<ul style="list-style-type: none"> <li>✓ Review of Watershed URMP Annual Report Draft</li> <li>✓ Section 4 of Watershed URMP Annual Report Assigned</li> <li>✓ Review of Water Quality Assessment</li> </ul>
12/18/03	10	<ul style="list-style-type: none"> <li>✓ Review of Watershed URMP Annual Report Draft</li> <li>✓ Review of Section 4 Assignments</li> <li>✓ Review of Water Quality Assessment</li> </ul>
1/08/04	N/A	<ul style="list-style-type: none"> <li>✓ Review of Watershed URMP Annual Report Draft</li> <li>✓ Final Review of Sections 3 and 5</li> </ul>
3/18/04	13	<ul style="list-style-type: none"> <li>✓ Distribute San Diego Bay Watershed URMP Annual Report</li> <li>✓ Zoo Proposal Grant</li> <li>✓ Discussion of Monitoring/Sampling</li> <li>✓ Discuss Potential Watershed-Based Education Opportunities</li> </ul>
5/20/04	13	<ul style="list-style-type: none"> <li>✓ Review Letters</li> <li>✓ Discuss Possible Watershed Survey</li> <li>✓ Ideas for Joint Efforts</li> <li>✓ Discuss Ways to Promote Watershed Message</li> </ul>

**3.4.1.2 Workshops and Conferences**

Both the County of San Diego and the City of National City conducted educational workshops addressing stormwater issues. These workshops primarily targeted representatives from businesses engaged in vehicle maintenance and washing. During

the workshops those in attendance were given opportunities to ask questions about the recommended BMPs and about more general stormwater issues.

The San Diego Bay Copermittees also targeted specific groups by setting up booths at various conferences. Educational materials were distributed and questions were answered by personnel at the booths. Two of the larger conferences attended were those of the American Public Works Association (APWA) and the Irrigation Association.

#### *3.4.1.3 Presentations*

The San Diego Bay Copermittees conducted a variety of presentations during the reporting period, mainly targeting students. These educational presentations provided a venue for questions about stormwater issues to be discussed. Students who have a greater awareness and understanding of stormwater issues will likely also be more active in taking measures to protect stormwater quality and influencing others around them to do the same. The City of San Diego, the County of San Diego, and the City of Coronado conducted eight presentations reaching over 1,000 junior high and high school students.

#### *3.4.1.4 Community Events*

During this reporting period, the San Diego Bay Copermittees participated in a number of community events. Many of these events addressed regional water quality issues that spanned several watersheds. The Copermittees feel such broad-based activities play an important role in engaging the public on important water quality issues and that such public participation does positively impact water quality both in the San Diego region as a whole and in San Diego Bay. However, because those events are discussed in other reports, they are not reiterated here.

During the reporting period, 15 community events including content specifically targeting San Diego Bay were conducted. These events included storm drain stenciling, educational booth displays addressing clean boating in the bay and watershed issues, a question and answer session on vehicle washing and repair BMPs with automotive dealership and repair shop representatives, high school science fair and field trips, World Wide Monitoring Day, and a series of lectures discussing environmental issues in the bay. Displays discussing watershed concepts were employed and watershed brochures were distributed. Over 27,500 people participated in these events. Please refer to Appendix E for a summary of the community events that occurred during this reporting period for this watershed.

#### 3.4.2 Clean-up Events and Waste Collection

Clean-up events give the public a chance to actively participate in improving the water bodies in their neighborhoods. In addition to the obvious benefits to water quality, such

events also give residents a tangible understanding of the link between their actions and receiving water impacts. Active, hand-on experience tends to foster a sense of ownership and deepen participants' sense of responsibility for their local water bodies.

During the reporting period, approximately 20 clean-up events involving over 1,800 people were held in the San Diego Bay Watershed, a number of which focused on CWA 303(d) listed water bodies. Participants and sponsors included all of the San Diego Bay Copermittees, students, Aquatic Adventures, Hands-On-San Diego, the Paradise Creek Educational Park, Inc. (PCEPI), the U.S. Fish and Wildlife Service, the U.S. Navy, the U.S. Coast Guard, the Port Tenants Association, the Southern California Professional Divers Association, and hundreds of volunteers from the general public.

While the San Diego Bay Copermittees do not believe the existing data supports listing trash as a COC for the entire watershed (see Section 2.3.2), a proactive approach continues to be implemented regarding control of trash within the entire San Diego Bay Watershed. Clean-up events are an effective means of not only involving the community in protecting water quality but also specifically removing trash from water bodies in urban settings. For example, I Love a Clean San Diego's Earth Day Creek to Bay Cleanup, sponsored in part by the San Diego Bay Copermittees, removed a large amount of trash in the Chollas Creek sub-watershed, where trash has been identified as a localized problem. Other events included a wetland clean up in Paradise Marsh and monthly clean-ups in Paradise Creek. The latter two clean-ups included removal of weeds and invasive species as well as the removal of trash. A number of beach clean-ups, mainly in Coronado, also took place in the watershed during the reporting period. During clean-up events, participants are typically provided with educational material regarding watershed concepts and have the opportunity to discuss stormwater issues with City staff and knowledgeable volunteers.

Free collection of household hazardous waste (HHW) and large trash items was also conducted during 2003-2004. Often residents illegally dump these materials due to a combination of economic pressures, inconvenience, and/or lack of knowledge regarding where to go to dispose of the items. Waste collection events provide an avenue for the public to properly dispose of used oil, furniture, appliances, and other items for which they might otherwise have had to pay fees or transport for long distances. During the reporting period, two collections of large household trash items and weekly collections of HHW occurred. Clean-up and waste collection events that occurred during this reporting period for the San Diego Bay Watershed are presented in Appendix C and Appendix E.

### **3.4.3 Integration and Participation in Local Planning Activities**

In recent years water quality management efforts have become increasingly watershed-focused, and several planning activities have been initiated. During the reporting period,

San Diego Bay Copermittees and other stakeholders in the San Diego Bay Watershed have continued to develop several major plans intended to improve the water quality in San Diego Bay, including the following:

- Otay River Watershed Management Plan (ORWMP)
- Otay River Special Area Management Plan (SAMP)
- Chollas Creek Enhancement Plan
- Regional IPM Campaign - PRISM Grant (focused on Chollas Creek)

Stakeholders in the areas in which these plans focus are attending regular meetings and providing valuable input on plan direction. Links to pages discussing the ORWMP and the Otay River SAMP are included on the Project Clean Water website. The sites include a variety of plan-related documents for public review and announcements of public meetings. Information on the Chollas Creek and IPM plan are available via the City of San Diego and THINK BLUE websites. For more information on the watershed management plans and the public participation conducted to date, please refer to Section 3.2, Land Use Planning Activities.

#### 3.4.4 Project Clean Water – San Diego Bay Watershed Website

The Project Clean Water (PCW) website (<http://www.projectcleanwater.org>) provides a means of public participation on San Diego Bay water quality issues. Each of the three sub-watersheds which drain to San Diego Bay—Otay, Pueblo, and Sweetwater—have pages devoted to them. Each page includes relevant data on the watershed, a list of projects in the watershed, a link to the San Diego Bay Watershed URMP, and an activities section. The activities section lists groups conducting projects such as cleanups and citizen monitoring and provides contact information for those groups. Other groups conducting water quality activities related to the watershed are also invited to contact the webmaster for inclusion on the site listing. The groups and activities listed on the PCW San Diego Bay Watershed pages are presented below in Table 3-7.

**San Diego Bay Watershed Urban Runoff Management Program 2003-2004 Annual Report**  
**Section 3—Implementation**

Table 3-7 Stakeholder Groups Listed on the PCW San Diego Bay Pages

<b>Group</b>	<b>Contact Type</b>	<b>Sub-Watershed Page</b>
<a href="#">Endangered Habitats League</a>	Link, email, phone number, contact name	Otay
<a href="#">Resource Conservation District of Greater San Diego County</a>	Link, email, phone number	Otay
<a href="#">San Diego Stream Team Citizens Monitoring Group</a>	Link, phone number, contact name	Otay, Pueblo, Sweetwater
<a href="#">Southern California Wetlands Recovery Project</a>	Link	Otay, Pueblo, Sweetwater
<a href="#">Sweetwater Authority</a>	Link, email, phone number	Sweetwater

The San Diego Bay Watershed URMP page includes downloadable Watershed URMP and 2002-03 Annual Report documents, as well as land use and MS4 maps. The page specifically states that the Copermittees are seeking public comment on the program and provides mail, email, and telephone contact information for the Lead Copermittee.

During the reporting period, 4,311 hits were recorded for the four main PCW web pages related to San Diego Bay. A monthly breakdown of the hits on each page can be found in Table 3-8 below.

Table 3-8 Number of San Diego Bay Related 'Hits' on the PCW Website

<b>Watershed</b>	<b>Jun 2004</b>	<b>May 2004</b>	<b>Apr 2004</b>	<b>Mar 2004</b>	<b>Feb 2004</b>	<b>Jan 2004</b>	<b>Dec 2003</b>	<b>Nov 2003</b>	<b>Oct 2003</b>	<b>Sep 2003</b>	<b>Aug 2003</b>	<b>Jul 2003</b>	<b>TOTAL</b>
Otay	147	95	76	126	92	110	122	83	113	105	100	110	<b>1,279</b>
Pueblo	111	97	79	94	89	125	105	79	95	111	87	60	<b>1,132</b>
Sweetwater	126	86	86	114	89	119	124	98	121	120	79	96	<b>1,258</b>
San Diego Bay WURMP	58	53	43	93	44	67	52	40	49	59	39	45	<b>642</b>
<b>TOTAL</b>	<b>442</b>	<b>331</b>	<b>284</b>	<b>427</b>	<b>314</b>	<b>421</b>	<b>403</b>	<b>300</b>	<b>378</b>	<b>395</b>	<b>305</b>	<b>311</b>	<b>4,311</b>

**3.4.5 Direct Interaction**

In addition to the specific activities and programs described above, the San Diego Bay Copermittees' staff also interact with the public on a daily basis. Municipal employees receive stormwater training on an ongoing basis, as described in each Jurisdictional

URMP. Staff with program implementation responsibilities receive the most intensive training, but other employees are educated about stormwater issues as well. Municipal employees interact with the public in their jurisdictions through a variety of avenues, such as the discretionary permit review process, building permit process, building inspections, public presentations, and outreach campaigns. These activities allow municipal staff to receive public comments about stormwater issues and regulations, as well as answer questions and provide guidance. This day-to-day personal interaction is an important component of the San Diego Bay Copermittees public participation activities.

## **Section 4: Effectiveness Assessment**

### **4.0 Introduction**

One of the most important components of a successful program is the development and implementation of a comprehensive program evaluation. The intent of the 2003-2004 evaluation is two-fold: 1) assess the effectiveness of the management and implementation of the Watershed URMP at a programmatic level; and 2) assess the effectiveness of the activities conducted to meet the program goals and objectives. This section of the annual report discusses the status of these assessments and meets the requirements of Section J.2.i. of the Municipal Permit by identifying and reporting on measures to assess the effectiveness of the San Diego Bay Watershed URMP.

### **4.1 Programmatic Assessment**

A large part of the 2003-2004 effectiveness assessment for the San Diego Bay Copermittees focused on a programmatic assessment of how to best integrate regional, watershed, and jurisdictional concepts into both Jurisdictional and Watershed programs. The San Diego Bay Copermittees agree that the integration of watershed issues is critical to a successful Urban Runoff Management Program. Water quality problems are inherently linked to watersheds and are best solved using a watershed approach. The San Diego Bay Copermittees also agree that some programs, such as education and water quality monitoring programs, are best applied at a regional or watershed level. Other programs, such as inspections, BMP implementation, enforcement, and planning, must be implemented at a jurisdictional level. Although San Diego Bay Copermittees agree the watershed approach has many benefits, functional differences between jurisdictions make its implementation a challenge.

The biggest problem with implementing watershed programs is that jurisdictional boundaries in the San Diego region do not correspond with watershed boundaries. Because funding, planning, and regulations are developed and distributed on a jurisdictional basis, implementation of different jurisdictional programs may occur within the same watershed. The San Diego Bay Copermittees recognize this problem; we do not have the luxury of redefining our jurisdictional boundaries to fit within our watershed landscape, but we are working toward a solution to develop and implement watershed-based programs.

Funding for Urban Runoff Management Programs within the San Diego region originates from each jurisdiction and is divided into two categories: jurisdictional and regional.

Jurisdictional funds allow each jurisdiction to implement programs within their boundaries. Because each jurisdiction is a Copermittee on the Municipal Permit, monies from each jurisdiction also are set aside for programs implemented on a regional scale. These regional funds allow monitoring and assessment and education programs to be conducted on a regional (county-wide) scale. Separate funding for watershed projects has not been established. As such, Copermittees must rely on funding from their jurisdictional programs to develop and implement watershed-based programs.

The San Diego Bay Copermittees have addressed the challenge of developing and implementing watershed programs by establishing a Watershed URMP Workgroup. This workgroup, consisting of San Diego Bay Copermittees and other interested stakeholders, meets on a regular basis to discuss watershed-based programs conducted within the San Diego Bay Watershed. Because traditional planning methods are impossible to implement within multiple jurisdictions, the Copermittees have developed alternate mechanisms to address the issue. Examples of some San Diego Bay Watershed programs include ORWMP and the MSCP. These projects involve watershed planning, encompass multiple jurisdictions, incorporate educational programs, and encourage stakeholder participation. As such, these projects meet Municipal Permit requirements of Section J.2.f (development of a mechanisms for public participation), J.2.g (development of a watershed based education program), and J.2.h (development of a mechanisms to facilitate collaborative “watershed based” land use planning with neighboring local governments in the watershed).

## **4.2 Activity Assessment**

The Copermittees produced a guidance document during October 2003 for assessing program effectiveness, entitled *A Framework for Assessing the Effectiveness of Jurisdictional Urban Runoff Management Programs*. In the 2002-2003 annual report, the San Diego Bay Copermittees stated that this effectiveness assessment would not be implemented until the 2004-2005 reporting period. The RWQCB, in the October 8, 2004 letter, requested that Copermittees use the assessment strategy in this document for the 2003-2004 Watershed URMP annual report. The San Diego Bay Copermittees have been proactive by incorporating concepts of this document into this annual report. Full implementation of this strategy, however, will not occur until 2004-2005.

Effectiveness assessments conducted during this period were based on achieving predetermined goals and objectives and meeting Municipal Permit requirements. The four primary objectives of the San Diego Bay Watershed URMP are as follows:

1. *Develop/expand methods to assess and improve water quality within the watershed;*
2. *Integrate watershed principles into land use planning;*

3. *Enhance public understanding of sources of water pollution; and,*
4. *Encourage and develop stakeholder participation.*

Achievement of these objectives was measured through the development, implementation, and completion of activities targeted for each objective. The status of these activities and how they relate to the Watershed URMP goals and objectives is outlined below.

Activities conducted by the San Diego Bay Copermittees also have been incorporated into the six hierarchical levels of targeted outcomes described in the Framework Document. The six levels are as follows:

Level 1: Compliance with Activity-Based Permit Requirements

Level 2: Changes in Knowledge / Awareness

Level 3: Behavioral Change / BMP Implementation

Level 4: Load Reductions

Level 5: Changes in Discharge Quality

Level 6: Changes in Receiving Water Quality

Documentation of Levels 1-3 is fairly straightforward, whereas documentation of Levels 4-6 requires the development and implementation of scientific studies designed specifically to detect these issues. Moreover, the detection of changes in discharge quality and, in particular, changes in receiving water quality requires the collection of data over several years to detect a change. Although the San Diego Bay Copermittees have very few data sets that span several years, we are working to collect this information and improve the process. Conclusions from existing data will be conducted when possible, but documentation of changes in water quality throughout the San Diego Bay Watershed cannot yet be determined.

#### 4.2.1 Level 1 Compliance with Activity Based Permit Requirements

The San Diego Bay Copermittees fulfilled the requirements of the Municipal Permit and were in compliance during the 2003-2004 reporting period (Level 1). Table 4-1 outlines Level 1 Targeted Outcomes by relating each activity conducted by the San Diego Bay Copermittees to one of the four objectives and the requirements specified in the Municipal Permit.

**San Diego Bay Watershed Urban Runoff Management Program 2003-2004 Annual Report**

**Section 4—Effectiveness Assessment**

Table 4.1. Level 1 targeted outcomes.

Permit Requirements	Permit Section	Objective	Activities	Status
Provide a comprehensive description of activities conducted to meet requirements of Section J of the Permit	M.1.a	Assessment of receiving water quality	<ul style="list-style-type: none"> <li>MEC 2003-2004 Urban Runoff Monitoring Report</li> </ul>	<b>Complete</b> 2003-2004
		Identify and prioritize water quality problems	<ul style="list-style-type: none"> <li>MEC 2003-2004 Urban Runoff Monitoring Report</li> </ul>	<b>Complete</b> 2003-2004
		Implementation of long- and short-term activities to address high priority water quality problems	<ul style="list-style-type: none"> <li>Diazinon TMDL</li> <li>IPM Campaign</li> <li>Bacteria Source Investigation</li> <li>Data Collection and Mgmt</li> <li>Source Water Protection Guidelines</li> <li>SUSMP Implementation</li> </ul>	On-going On-going <b>Completed</b> On-going On-going On-going
		Implementation of watershed-based education program	<ul style="list-style-type: none"> <li>Public Presentations and Media/Watershed Element</li> <li>IPM Campaign</li> <li>Which is my watershed?</li> <li>Watershed Brochure</li> <li>Project Clean Water</li> <li>Partners in Clean Water</li> </ul>	On-going On-going <b>Completed</b> <b>Completed</b> On-going On-going
Develop mechanism for public participation	M.1.b (J.2.f)	Enhance public understanding of sources of water pollution	<ul style="list-style-type: none"> <li>Project Clean Water</li> <li>Watershed URMP Workgroup</li> <li>Integration/Participation in LUP</li> <li>Otay Special Area Mgmt Plan</li> <li>Otay Watershed Mgmt Plan</li> <li>Discretionary Project Review Process</li> <li>Direct Interaction</li> </ul>	On-going On-going On-going On-going On-going On-going On-going
Develop mechanism to facilitate collaborative "watershed-based" land use planning	M.1.c (J.2.h)	Integrate watershed principles into land use planning	<ul style="list-style-type: none"> <li>General Plan Updates</li> <li>WQ data integrated with planning departments</li> <li>Information sharing/planning forums</li> <li>Jurisdictional Planning/Watershed URMP Workgroup</li> <li>Otay Watershed Mgmt Plan</li> <li>Chollas Creek Enhancement Plan</li> <li>Otay Special Area Mgmt Plan</li> <li>Multiple Species Conservation Plan</li> </ul>	On-going On-going On-going On-going On-going On-going On-going On-going
Assess the effectiveness of Watershed URMP	M.1.d (J.2.i)	Develop/expand methods to assess and improve water quality	<ul style="list-style-type: none"> <li>Development of Framework Document</li> <li>Implementation of Framework Document</li> </ul>	<b>Completed</b> On-going
Revise the Watershed URMP	M.1.e	Develop/expand methods to assess and improve water quality	<ul style="list-style-type: none"> <li>See Attachment 1.</li> </ul>	On-going
Identify watershed efforts not included in annual monitoring report (e.g., special investigations)	M.1.f	Develop/expand methods to assess and improve water quality	<ul style="list-style-type: none"> <li>Bacteria Source Investigation</li> </ul>	<b>Completed</b>
Identify water quality improvements or degradations	M.1.g	Develop/expand methods to assess and improve water quality	<ul style="list-style-type: none"> <li>MEC 2003-2004 Urban Runoff Monitoring Report</li> </ul>	<b>Complete</b> 2003-2004

#### 4.2.2 Level 2 Changes in Knowledge/Awareness

The following programs implemented by the San Diego Bay Copermittees were able to document changes in knowledge and/or awareness of program participants.

- Project Clean Water
- Watershed URMP Workgroup
- Otay River SAMP
- Otay River WMP
- Lecture Series
- IPM Campaign
- Which is my watershed?
- Watershed brochure
- Partners in Clean Water
- Multiple Species Conservation Program

Many of the programs listed above address multiple program strategies (i.e., development of a monitoring program coupled with an educational outreach campaign). As such, these programs provided education on general watershed concepts, as well as information on specific priority pollutants within the San Diego Bay Watershed. Please see Section 3 of this report for specific information on each of these programs.

#### 4.2.3 Level 3 Behavioral Change/BMP Implementation

Changes in behavior and/or implementation of BMPs were documented through the following programs:

- TMDL for Diazinon
- SUSMP Implementation
- ORWMP
- Chollas Creek Enhancement Plan

Activities associated with the programs listed above involved stakeholder participation in activities and decision-making processes, as well as the implementation of BMPs to reduce the impacts of urban runoff. These programs also provided information on general watershed concepts, as well as information on specific priority pollutants within the San Diego Bay Watershed. Please see Section 3 of this report for specific information on each of these programs.

4.2.4 Level 4-6 Load Reduction and Changes in Water Quality

The calculation of pollutant load reductions and the determination of water quality changes is a regional effort and requires the collection of rigorous scientific information over several years. The Copermittees currently are analyzing existing information. Results of these analyses will be included in the Report of Waste Discharge to be submitted to the RWQCB in August 2005.

## **Section 5: Conclusions & Recommendations**

### **5.0 Introduction**

As stated in the San Diego Bay Watershed URMP, updates and changes to this program are submitted as part of the annual report and include an annual reevaluation of high priority and other potential water quality issues, description of any changes to the priority listing, and a summary of revised activities. Specifics regarding each program component are discussed in detail in appropriate sections of this report. A summary of proposed changes to program priorities and activities, as well as the San Diego Bay Copermittees' closing comments for this reporting period, are included below.

### **5.1 Proposed Changes to Water Quality Priorities**

During 2003-2004, the water quality assessment for the San Diego Bay Watershed utilized data from dry weather monitoring, coastal outfall monitoring, rapid stream bioassessments, ABLM, and MLS monitoring to identify water quality priorities. Based on the review of these data sets, the priority COC for the entire watershed remain the same as the water quality assessment presented in the January 2002 San Diego Bay Watershed URMP, and the assessment from the 2002-2003 Watershed URMP Annual Report. The high priority water quality issues are bacteria (fecal coliform), copper, diazinon, turbidity/TSS, and zinc. In addition to these high priority water quality issues, the San Diego Bay Copermittees will continue to track other potential water quality issues that were not high priority during 2003-2004 and re-evaluate these issues during 2004-2005. The San Diego Bay Copermittees will continue to monitor long-term temporal trends of COC and high priority water quality issues that have been identified in the watershed.

### **5.2 Recommended Changes to Activities**

The high priority water quality issues have not changed for the San Diego Bay Watershed URMP. Furthermore, the San Diego Bay Copermittees believe that the actions implemented to date and those scheduled for implementation to address these issues need not be significantly modified at this time. As reported in Section 3 of this report, some activities have been slightly modified or have shifted focus since their inception to address current needs of the watershed. The overall goals of these programs, however, have not changed significantly. All watershed activities, including those that have been changed or revised are outlined in Table 3-1. An amendment to the Watershed URMP is provided as Attachment 1. The amendment consists of updated tables of water quality, planning, education, and public participation activities to be implemented in the future.

Although the impact of education and outreach efforts may not be fully witnessed for several years, it is important to continue to implement a consistent educational message. The San Diego Bay Copermittees also are continuing to develop measures through which the effectiveness of these activities can be measured. The status and effectiveness of these improvements will be discussed in future Watershed URMP Annual Reports.

#### 5.2.1 Water Quality Activities

As discussed in detail in Section 2 of this Watershed URMP Annual Report, the Copermittees, as a whole, have contracted with MEC to assimilate information and analyze data for each of the nine Watershed Management Areas within San Diego County. As previously discussed, the high priority COC for the San Diego Bay Watershed have remained the same since the inception of the Watershed URMP. Many water quality activities originally developed to address these issues are still being implemented by the San Diego Bay Copermittees. Planned activities for 2004-2005 also address these issues. Meanwhile, the San Diego Bay Copermittees will continue to improve data collection, attempt to identify and reduce sources of pollutants of concern, and develop and implement water quality activities to adequately address each pollutant.

#### 5.2.2 Land Use Planning Activities

The San Diego Bay Copermittees have developed and are currently implementing several mechanisms that involve land use planning activities on a watershed scale. These mechanisms include the Source Water Protection Guidelines, the ORWMP, and the MSCP. These programs have successfully brought various stakeholders to the table to discuss planning activities within the watershed landscape. The Copermittees will continue to implement these programs and re-evaluate their progress during 2004-2005.

#### 5.2.3 Educational Activities

The San Diego Bay Copermittees have implemented a variety of educational programs that address priority pollutants of concern within the San Diego Bay Watershed, as well as pollutants that span several watersheds. The Copermittees are working on methods that will allow better assessment of educational programs in the future. Determining effectiveness of such programs, however, is extremely challenging. A broad knowledge of basic watershed concepts must be achieved before significant changes in behavior can be documented. In addition, it is difficult to provide successful outreach programs on complex issues (i.e., priority pollutants) when the basic concept of watershed ecology is not well understood. The San Diego Bay Copermittees have witnessed success through their educational programs, yet efforts to enhance knowledge of the watershed concept, including priority pollutants, must continue. The benefits of educational activities may not

be fully realized for several years; the Copermittees will continue to implement and evaluate current and new programs.

#### 5.2.4 Public Participation Activities

The San Diego Bay Copermittees are always looking to improve public participation mechanisms by adjusting and expanding opportunities for the public to participate in the watershed program. One of the most successful public participation activities during 2003-2004 was the Watershed URMP Workgroup. During 2004-2005, the San Diego Bay Copermittees will work to increase stakeholder participation in these meetings by reaching out to groups, organizations, and agencies that have not previously participated. The Copermittees also will continue to add new participation opportunities (when and where feasible) through parallel and/or related programs such as the development of the ORWMP.

#### 5.2.5 Assessment Program

The Framework Document developed by the San Diego Regional Copermittees during 2002-2003 provides a good foundation for the development of a program assessment. The San Diego Bay Copermittees have incorporated the concepts of this document into the assessment for 2003-2004 and will continue to build upon these concepts for future assessments. In addition, the Regional Copermittees are in the process of conducting the first long-term assessment of the regional program. We believe information from this long-term assessment will be useful in providing direction for the future of the San Diego Bay Watershed URMP, as well as other watershed programs within the San Diego region. Information regarding the outcome of the long-term assessment will be incorporated in future years.

### **5.3 Conclusions**

A number of important challenges have arisen during 2003-2004 with the implementation of this Municipal Permit, and the San Diego Bay Watershed Copermittees made considerable progress on the Watershed URMP during 2003-2004. Significant effort was used to help define and improve upon the relationship between jurisdictional, regional, and watershed programs. Although funding for stormwater programs originates within each jurisdiction, efforts of each Copermittee are increasingly moving toward a watershed focus. This shift in focus ultimately will benefit the environment, as well as each Copermittee's stormwater program. Work to refine and improve the process, however, is challenging. As we learn from our experiences, we will get better at determining the balance between jurisdictional and watershed programs and greater efforts will go into our programs rather than into the process. Continued collaboration is key to the development of quality programs that are cost-effective and responsive to the needs of our

***San Diego Bay Watershed Urban Runoff Management Program 2003-2004 Annual Report***  
***Section 5—Conclusions & Recommendations***

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communities. 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. Continued cooperation between the San Diego Bay Copermittees and the RWQCB is necessary to keep the lines of communication open and to ensure our mutual long-term success.

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