

**MISSION BAY AND  
LA JOLLA WATERSHEDS  
URBAN RUNOFF MANAGEMENT PROGRAM**

**FISCAL YEAR 2004  
ANNUAL REPORT**



Prepared by:  
*City of San Diego*

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## CERTIFIED STATEMENT

January 25, 2005

**RE: STATEMENT OF CERTIFICATION for the Fiscal Year 2004 Mission Bay and La Jolla Watersheds URMP Annual Report**

I certify under penalty of law that the Fiscal Year 2004 Watershed Urban Runoff Management Program Annual Report for the Mission Bay and La Jolla Watersheds and all attachments, including Appendix B (Responses to October 8, 2004 letter to Mission Bay & La Jolla Watershed WPS:10-5000.02:hammp) was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for knowingly submitting false information, including the possibility of fine and imprisonment for knowing violations.

**Karen Henry,**  
Deputy Director  
City of San Diego

## EXECUTIVE SUMMARY

### 1.0 Introduction

This Annual Report represents the City of San Diego's efforts during the Fiscal Year (FY) 2004 reporting period (July 1, 2003 to June 30, 2004) to develop and implement the Mission Bay and La Jolla Watershed Urban Runoff Management Program (Mission Bay and La Jolla Watershed URMP). This reporting period covers the first full year that the program has been in place. The City of San Diego is proud to report that progress has been made in understanding and addressing the water quality issues affecting Mission Bay and the La Jolla area and the City of San Diego will continue to strive to implement, improve and enhance its storm water programs and activities over the next several years.

### 2.0 Report Organization & Summary

The Mission Bay and La Jolla Watershed URMP Annual Report consists of a total of five sections, and is organized as follows. A summary of the highlights from each section is also provided. Issues common to all or multiple watersheds have been moved to the County of San Diego's FY 2004 Unified Watershed URMP Annual Report. This report is organized to focus on activities that are specific to the Mission Bay and La Jolla Watershed URMP. Responses to the Regional Water Quality Control Board's (Regional Board) October 8, 2004 13267 letter are incorporated within the document, as requested. The first category of comments in the 13267 letter has been addressed within the appropriate sections of the Annual Report. Responses to the second category of comments have been addressed in writing (included as Appendix A). It should also be noted that this document's organization and content have been reorganized from last year's report to address the Regional Board's comments.

#### Section I – Introduction

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

#### Section II – Activity Implementation

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

#### Section III – Water Quality Assessment

For 2004, the assessment of the Mission Bay and La Jolla watershed did not yield a constituent of concern with a high frequency of occurrence. Constituents of concern with a low frequency of occurrence

designation were: Total Coliform, Enterococcus, Total Suspended Solids and Chemical Oxygen Demand (COD).

The constituents of concern for the Mission Bay and La Jolla watershed identified in 2004 were compared to the previous two year's water quality assessments (2002 and 2003). The following changes were noted for the Mission Bay and La Jolla Watershed in 2004 as compared to the previous two year's assessments.

- ✓ Total Coliform and Enterococcus are more apparent as constituents of concern.
- ✓ Turbidity and Chemical Oxygen Demand (COD) continue to be apparent as constituents of concern.
- ✓ Fecal Coliform, Diazinon, Total Suspended Solids, Zinc, Copper and Malathion are all less apparent as constituents of concern.

#### *Updated List of Constituents of Concern*

Based on a combined analysis of the 2002, 2003 and 2004 assessments, Total Suspended Solids, Fecal Coliform, Total Coliform, Enterococcus, Diazinon, Turbidity, Zinc, Copper, Chemical Oxygen Demand (COD) and Malathion remain constituents of concern (See Table III-1).

#### *Updated List of High Priority Water Quality Issues*

The data set considered to date is too limited to draw strong conclusions about high priority water quality issues and associated actions. In addition, developing an effective list of activities that properly identifies and addresses significant water quality issues requires additional validation. Therefore, the high priority water quality issue identified in the Mission Bay and La Jolla Watershed URMP remains the same in FY 2005: *Limiting recreation opportunities in coastal waters due to potential for pathogens*. This high priority issue and the constituents of concern identified in the 2002, 2003 and 2004 watershed water quality assessments will continue to be tracked (See Table III-1, Table III-2 and Table III-3).

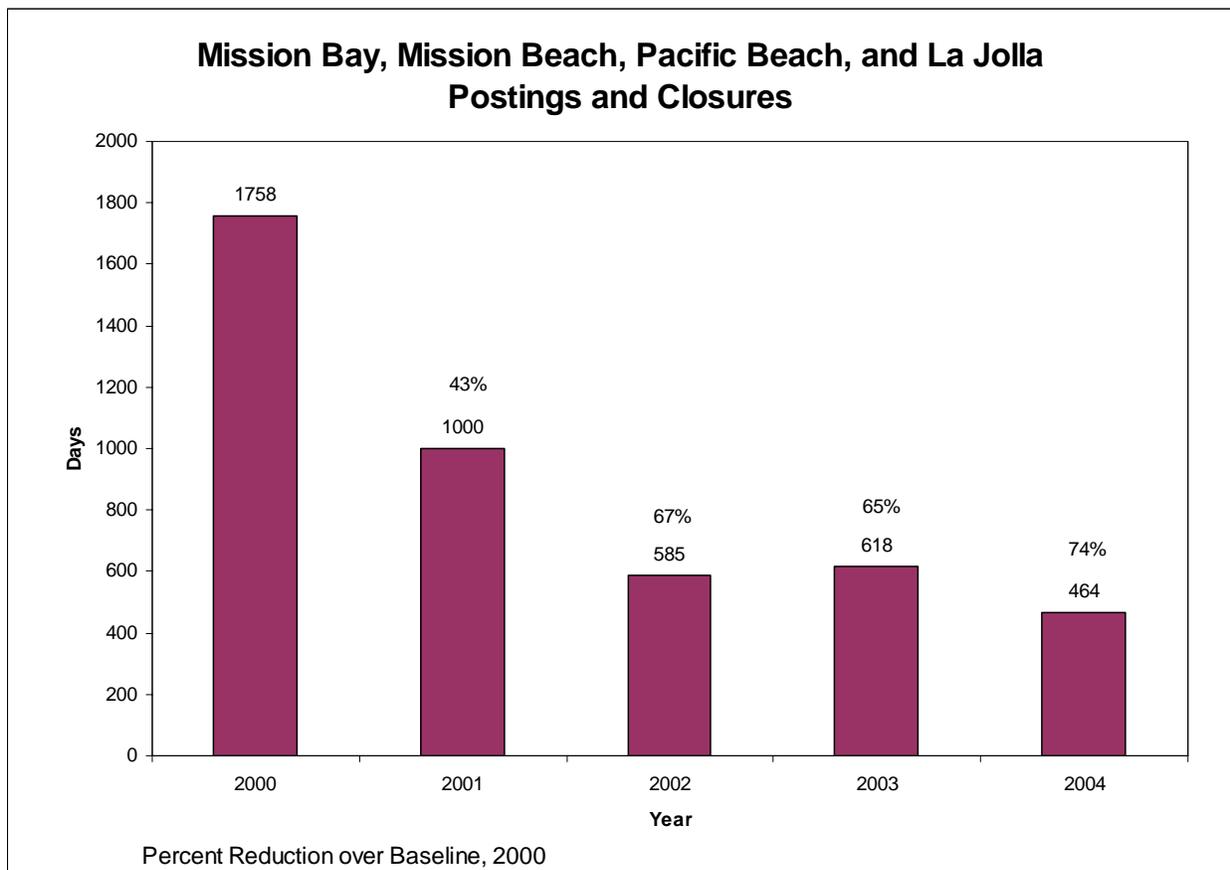
### **Section IV – Effectiveness Assessment**

Section IV provides an initial assessment of the implementation and effectiveness of the Mission Bay and La Jolla Watershed URMP for FY 2004. This assessment covers the first full year during which the watershed standards of the Municipal Permit (National Pollutant Discharge Elimination System [NPDES] Municipal Storm Water Permit for San Diego Copermittees [Order No. 2001-01, NPDES No. CAS 0108758]) were in effect.

### **Section V – Conclusions and Recommendations**

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

San Diego's coastal waters are a resource that must be protected. In 2001, Mayor Dick Murphy outlined ten goals to make the City of San Diego a "City Worthy of Affection". Goal number four, Clean Up Our Beaches and Bays, called for the reduction of beach postings and closures by 50% by 2004. Mission Bay became the focal point as nearly 75% of all City beach postings occurred in Mission Bay during 2000. The beach posting reduction goal was not only met but exceeded. The City of San Diego is proud of its efforts within the Mission Bay and La Jolla watersheds to protect and improve water quality.



**Figure ES-1. Beach posting and closures in the Mission Bay watershed between 2000 and 2004.**

Water quality protection efforts were enhanced due to millions of dollars in grant funding. Due to these funds, the City was able to implement significant water quality projects including the Coastal Low Flow Storm Drain Diversion project and the Mission Bay Bacteria Source Identification Study. On the other hand, due to limited funding for implementing the watershed urban runoff management programs, the City of San Diego focused primarily on citywide strategies that represented common issues within multiple watersheds. These unified approaches served to maximize water quality protection through effective and efficient use of resources. As such, efforts to expand and strengthen this WURMP have not been a top priority. The City of San Diego has focused resources on efforts that maximized water quality benefits, such as regional and jurisdictional programs that target constituents of concern affecting watersheds rather than specific watersheds, and a consolidated water quality program for all nine of the permit-specified watersheds. Without specifically identifying the Mission Bay and La Jolla watershed, the activities directly benefited water quality in the watershed more effectively than could have been achieved with fragmented efforts divided across multiple watersheds.

The City of San Diego's current budgetary constraints make it even more clear that continued collaboration and thoughtful coordination and integration between regional, watershed and jurisdictional programs are keys to the development of quality programs that are cost-effective and responsive to the needs of our customers. We are not proposing to do less; but rather to have the flexibility to adjust and implement programs that achieve the most water quality benefits. The City of San Diego continues to work on

balancing the level and type of information required for both Jurisdictional and Watershed URMPs. Only time and continued implementation will tell whether or not the programs established pursuant to this Municipal Permit will meet the standards of water quality improvement and cost-effectiveness that together define practicability. Increased cooperation between the City of San Diego and the RWQCB will be necessary as we continue to move our programs forward.

## 1.0 Background

The National Pollutant Discharge Elimination System (NPDES) Municipal Storm Water Permit for San Diego Copermittees (Order No. 2001-01, NPDES No. CAS 0108758, hereafter referred to as "Municipal Permit") requires that the City of San Diego as the sole municipality within the Mission Bay and La Jolla watershed diligently pursue the development of a watershed-based program that addresses surface storm water quality. The Municipal Permit directs the municipality who has land use authority within the Mission Bay and La Jolla watershed to develop and implement a Watershed URMP for the watershed. The purpose of the Watershed URMP is to identify and address the highest priority water quality issues/pollutants in each watershed. In addition, the Municipal Permit requires that the City of San Diego develop activities that address education, public participation and land use planning.

## 2.0 Program Approach

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

The Mission Bay and La Jolla Watershed URMP's overall program goal and specific objectives that the City of San Diego will strive to meet are listed below.

**TO POSITIVELY AFFECT THE WATER QUALITY OF THE MISSION BAY AND LA JOLLA WATERSHED WHILE BALANCING ECONOMIC, SOCIAL AND ENVIRONMENTAL CONSTRAINTS.**

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

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

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

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

## 3.0 Municipal Permit Requirements

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

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

The first Watershed URMP Annual Report is due to the San Diego Regional Water Quality Control Board (SDRWQCB) no later than January 31, 2005, and every January 31<sup>st</sup> thereafter. The reporting period for the Annual Reports must cover the previous fiscal year. As such, the FY 2004 Watershed URMP Annual Report will cover the reporting period from July 1, 2003 to June 30, 2004.

The Plan of Action (Section III) of the Mission Bay and La Jolla Watershed URMP includes several activities the City of San Diego has or is intending to implement over the remaining life of the Municipal Permit in an effort to meet the four primary objectives of the program. Sections 1.0 to 4.0 below summarize the efforts the City of San Diego undertook to develop the Mission Bay and La Jolla Watershed URMP and implement the Plan's activities during the FY 2004 reporting period.

## 1.0 Water Quality Activities

The Plan of Action Section in the Mission Bay and La Jolla Watershed URMP identifies proposed activities to address prioritized water quality issues. The sections below provide a status report of work completed to date on those activities.

### 1.1 Mission Bay Bacteria Source Identification Project

The City of San Diego received a Clean Beaches Initiatives grant from the State Water Resources Control Board for a total of \$1,300,000. The purpose of this Clean Beaches Initiative - Proposition 13 contract was to plan, design and implement bacteria source identification study. This project was implemented in two phases. Phase I was completed on June 30, 2003 and reported in last year's annual report for a cost of \$650,000. During this reporting period, Phase II was initiated on July 1, 2003 and the investigation completed on June 30, 2004 for a cost of \$650,000. The study was prepared for the State Water Resources Control Board by the City of San Diego (City) and MEC - Weston Solutions. The final report was submitted to the State Water Resources Control Board on September 15, 2004 and copies were provided to the Regional Board. Refer to <http://www.thinkbluesd.org/> for a complete copy of this study.

The goal of Phase II was to further identify the major sources of bacterial contamination to Mission Bay. Tasks 4-6 were designed to achieve this goal

- Task 4 – Identify the host origin (human, avian, etc.) of bacteria using Microbial Source Tracking techniques.
- Task 5 – Determine if bacteria are being transported from the Mission Bay Park grassy areas to the receiving waters via groundwater.
- Task 6 – Determine if the sediments in Mission Bay act as a source of bacteria to the receiving waters at area beaches.

Overall, the results of this project suggest that the majority of the indicator bacteria in Mission Bay originate from birds and that the initial load generated from avian sources can then be amplified by processes related to irrigation runoff, storm drains, intertidal sediments, and the wrack line. The study is summarized in the conceptual model below.

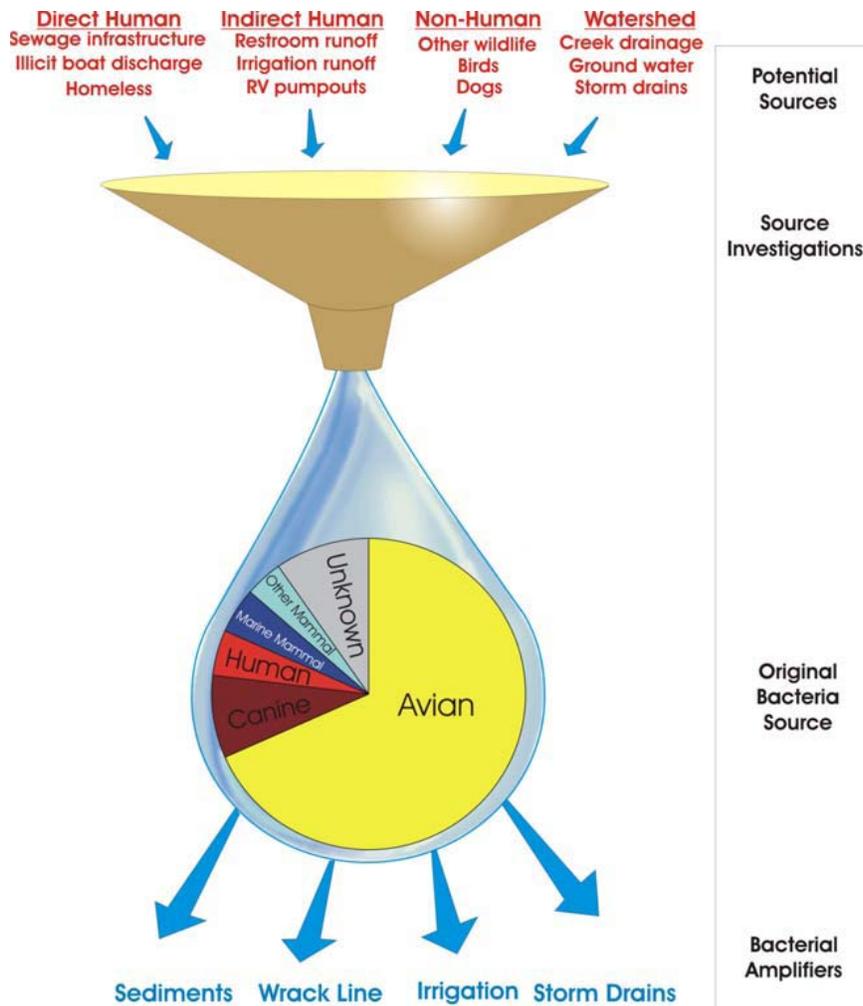


Figure II-1. Conceptual Model Showing Sources of Mission Bay Bacteria

### 1.2 Mission Bay Clean Beaches Project – Mission Bay Centralized Computer Irrigation System

During this reporting period, the City of San Diego negotiated the Clean Beaches Initiative contract amendment for the Mission Bay Computerized Central Irrigation System with the State for a total contract amount of \$1,308,479. The recommendation for Mission Bay Computerized Central Irrigation System project is found in the Mission Bay Bacteria Source Identification Study Phase I report to the SWRCB dated June 30, 2003. The project intends to replace all existing irrigation controllers with new radio controllers, install master valves/flow sensors and install manual valves. The project objective is to minimize runoff and thus reduce the transport of bird feces from the grass areas into Mission Bay. Installation of the new computerized central irrigation system is expected to begin during the spring of 2005.

### 1.3 Mission Bay Water Quality Survey

The City of San Diego's Metropolitan Wastewater Department conducted a Water Quality Survey of 24 sites within Mission Bay (See Figure II-2) and in the watersheds that contribute runoff into Mission Bay from Cudahy Creek, Tecolote Creek and Rose Canyon Creek. The survey was approved by the Water Quality Control Board, Region 9, as a Supplemental Environmental Project and covered a 3 year period that ran

from July 2001 through May 2004. The final report was submitted to the Regional Board on June 4, 2004. The project cost exceeded \$365,000.

Samples were collected from 4 Mission Bay sites year-round. Of the 20 watershed sites, three were collected only during wet weather with the remainder collected year-round, if flows were present. Samples were collected weekly irrespective of the prevailing weather conditions. Each sample was analyzed for the bacterial indicators total Coliform, *E. coli* and Enterococcus.

The initial intent of the survey was to monitor sites for fecal contamination. As the survey progressed additional layers of effort were added which included the development of action level triggers for elevated densities of *E. coli* and Enterococcus bacteria as well as adaptive re-sampling and investigations of those sites where single sample triggers were exceeded.

Over the course of the survey, Enterococcus was responsible for the majority of the trigger exceedances from the bay and the watershed. *E. coli* did not exhibit the number of trigger exceedances to the extent of Enterococcus, however, *E. coli* was the better indicator of a contamination event. On all occasions when a verifiable fecal contamination event occurred, *E. coli* exhibited a count exceeding that of Enterococcus by about an order of magnitude.

Bacteriological results from sample sites within Mission Bay tended to be consistent throughout the entire survey in that they met AB411 standards a vast majority of the time for all 3 indicators. Based on the findings, little or no impact was observed at the interface of Mission Bay and the flood control channel, the site of the old landfill at South Shores or the Sea World discharge pipes.

Results from the watershed sites were variable and at numerous sites routinely exceeded triggers thus leading to a significant demand of resources to carry out adaptive re-sampling and investigation. As a result of numerous investigations, a wide range of discoveries were observed and attributable to significant accumulations of pet and other animal waste, sewage discharges from both private and public systems, homeless encampments, mulch runoff and other non-point sources that could not be identified.

## Marine Microbiology Sample Site Location Map

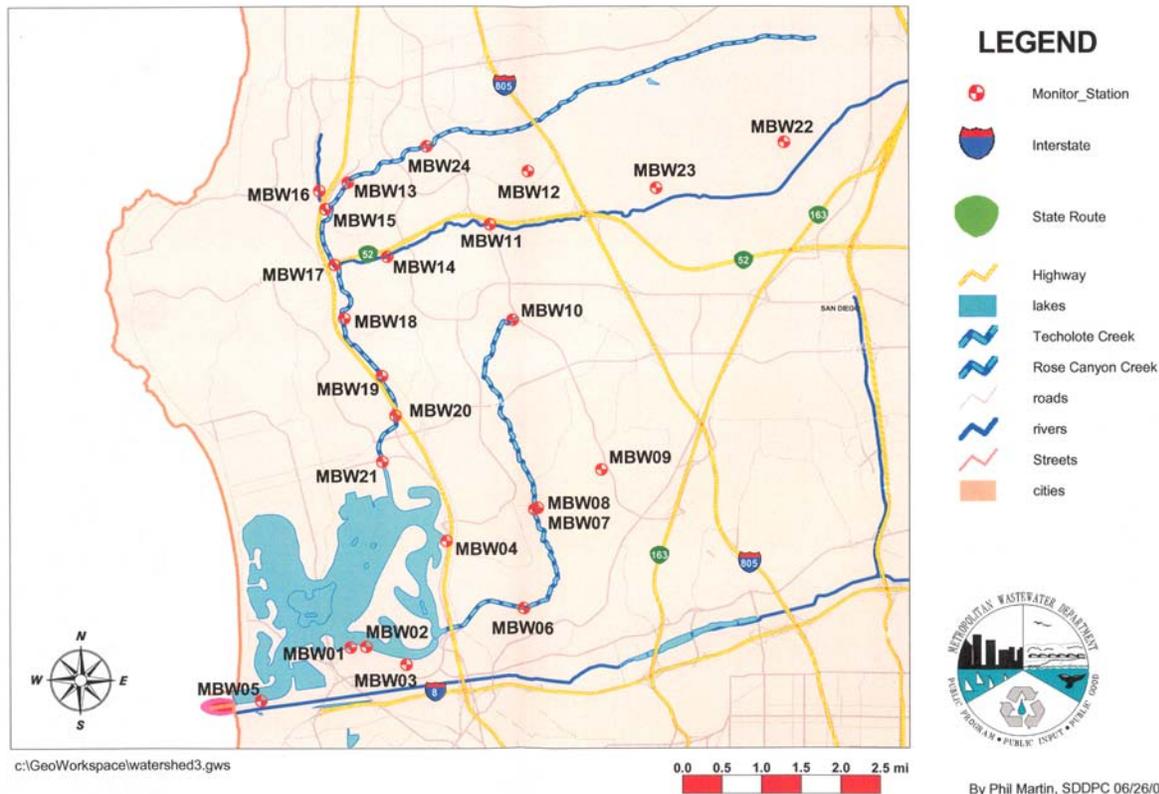


Figure II-2. Mission Bay watershed 24 sample site location

### 1.4 Mission Bay Epidemiology Study

Mission Bay Project W.E.T: (Water Evaluation & Testing) Study is funded by the State Water Resources Control Board Cleanup and Abatement Account at the request of the Regional Board. The City of San Diego provided an additional \$700,000 of funding through a Regional Board approved Supplemental Environmental Project for the sewage spill into Tecolote Creek in 2001. Regional Board is the designated contract manager with the University California, Berkeley and the Southern California Coastal Waters Research Project (SCCWRP) for the epidemiology and water quality tasks that are performed.

The goals of Project WET are to assess the risk of swimming related illness following exposure to runoff contaminated waters in Mission Bay. At the invitation of SCCWRP, the City of San Diego attended Steering Committee meetings on November 20, 2003, May 8, 2004, and August 23, 2004. At these meetings, City provided input on water quality monitoring data and direction regarding statistical analyses of the data. Interviews of the public started on May 24, 2003 and continued through Labor Day weekend 2003. Analyses of the water quality results and interview questions proceeded throughout this reporting period. UC Berkeley and SCCWRP are scheduled to provide a final project report to the Regional Board in early 2005.

### **1.5 Rose & Tecolote Creeks Water Quality Improvement Projects**

The purpose of the Rose & Tecolote Creeks Water Quality Improvement project is to construct structural controls (a.k.a. storm water BMPs) within the watershed and evaluate their effectiveness. The project was initiated with a \$2 million from a 2000-2001 State Budget appropriation. In FY 04, the Storm Water Program moved forward with the design of three structural BMP's. It was during the permitting and community coordination phase of the projects that one of them was placed on hold due to public controversy. Final engineering plans were drawn up for structural treatment control devices located at the terminus of Mount Ashmun Drive and Mount Ariane Drive. Construction is expected to begin in 2005.

### **1.6 Mission Bay Low Flow Storm Drain Diversion System**

During dry-weather, intermittent flow of undocumented wastes and sewage overflows were conveyed by storm drains to Mission Bay, occasionally creating elevated bacteria levels which resulted in beach closures. To respond to this problem, the City developed the Mission Bay Sewage Interceptor System (MBSIS), which diverts low, dry-weather flows from storm drains to the sewer. Constructed in five phases and completed in 1994, the MBSIS consists of 46 interceptor facilities located around the perimeter of Mission Bay and along the adjacent San Diego River Channel. Funding was developed from revenues collected from local rate payers with sewer connections. All systems were operational during this reporting period.

### **1.7 Coastal Low Flow Storm Drain Diversion Project**

The City's Low Flow Diversion System is designed to capture urban runoff or sewage overflows from the City's storm drain system during dry conditions and divert them to the City's sanitary wastewater collection system for treatment at the Point Loma Water Treatment Plant. During the reporting period, the City operated and maintained 7 facilities located in the La Jolla community. The facilities have proved to be extremely effective in capturing and diverting urban runoff and sewage overflows before they reach our coastal waters.

Future plans for the Low Flow Diversion System include the development of 29 new diversion facilities and maintenance for the existing facilities. Eighteen of these new diversion facilities will be operational in March 2005. New Diversion facilities will be located at storm drain outfalls along the City's shoreline communities of Ocean Beach (the San Diego Bay watershed), Pacific Beach and La Jolla.

### **1.8 Rose Creek Watershed Opportunities Assessment**

This project will result in the preparation of a comprehensive assessment of existing conditions, opportunities and constraints for habitat protection, habitat restoration, enhancement and protection of cultural resources and public access improvements in the Rose Creek watershed. Funded by the Coastal Conservancy with additional support by Supervisor Pam Slater, additional funding is being sought to develop a fire management plan as part of this project. The assessment began in March of 2004 and is expected to take at least a year to complete.

The two main natural features that make up the watershed include City of San Diego -owned land in Rose and San Clemente canyons. The watershed also includes a large portion of the Miramar MAS. The watershed includes small portions of the communities of Scripps Ranch, Mira Mesa, La Jolla, and Pacific Beach, a large portion of Clairemont Mesa and almost the entirety of the University City community. The watershed drains into Mission Bay in eastern Pacific Beach where Rose Creek meets the ocean.

A team of public and private professionals from a variety of fields, including biology, hydrology, land use planning, landscape architecture, archaeology and recreation will participate in the assessment. The goal is to create an integrated vision of opportunities (eg, "projects") for the watershed that can be later implemented. This team will review existing resources (available studies, local knowledge and data) and will conduct site visits throughout the watershed. All activities will be in close coordination with the primary property owners in the focus study area, the City of San Diego and the Marines, as well as nearby residents of area communities.

### **1.9 Data Collection & Analysis**

This activity is discussed in the FY 04 Unified WURMP Annual Report prepared by the County of San Diego.

## **2.0 Land Use Planning Activities**

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

### **2.1 Jurisdictional Planning Activities**

#### **2.1.1 City of San Diego – General Plan**

The General Plan is the City's long range plan for growth and development. Its influence is felt throughout City departments, as the plan establishes policies on a broad range of topics, including urban runoff management. The first element of the new General Plan to be adopted was the Strategic Framework Element. The Strategic Framework Element sets forth the City of Villages strategy. This strategy calls for the City's growth needs to be met largely through mixed-use redevelopment of existing commercial areas. The strategy promotes greater use of transit and walking, reduced street widening and fewer surface parking lots, while discouraging the continuation of urban sprawl. All of these principles provide a framework for future development that will be sensitive to the protection of water resources. A Five-Year Action Plan was adopted concurrently with the Strategic Framework Element. It identifies specific actions to be taken to implement the goals and policies of the Strategic Framework Element and includes action addressing storm water and urban runoff and a new Conservation Element of the General Plan. Examples of specific action items include: "use pollution-prevention strategies supplemented by source control and treatment control Best Management Practices to prevent and reduce water pollution," and "support regional funding for water quality watershed planning and management."

Since the Strategic Framework Element was approved in 2002, work has been underway to prepare the Conservation Element along with the rest of the City's General Plan. The Conservation Element expands upon the water quality and watershed principles that were adopted as a part of the Strategic Framework Element. The complete General Plan update is anticipated to be heard by the City Council in late 2005. General Plan elements currently being drafted relevant to urban runoff include:

1. *Conservation Element*. Work has been proceeding on the Conservation Element. Progress includes the distribution of seven public outreach e-mails, a public forum in December 2003, and several

stakeholder group presentations. Staff has prepared a draft element and is presenting it to stakeholder groups for input. The Conservation Element addresses water quality, wetlands, pollution, and urban runoff. For example, proposed water quality policies are as follows:

- Adopt, amend and/or enforce City policies and regulations to reduce pollution from storm water and urban runoff.
- Minimize large surface parking lots.
- Secure funding to implement programs to protect and improve water quality.
- Apply funding to comply with the Regional Water Quality Control Board (RWQCB) municipal permit regulations to jurisdiction responsibilities related to "new development and significant redevelopment" projects under the rubric of watershed planning and watershed plan implementation.
- Support regional funding for water quality watershed planning and management.
- Support increased funding of federal and state programs that monitor, model, assess, and map ground and surface water resources.
- Support programs that address the causes of water quality pollution.
- Support monitoring programs to better assess the causes and severity of water quality issues.
- Support programs that monitor, model, and assess the environmental values of urban vegetation and open space related to water quality.
- Reduce the number of yearly beach closures.
- Require or encourage development practices through regulation that minimize alteration of natural hydrological conditions, minimize pollutant sources, and where possible, promote the preservation of natural drainage systems.
- Minimize the amount of graded land surface exposed to erosion.
- Improve quality of ocean outfall discharges.
- Strictly enforce regulations concerning sewage discharge from vessels into Mission Bay and San Diego Bay.

The complete Conservation Element draft will soon be available online at [www.sandiego.gov/cityofvillages](http://www.sandiego.gov/cityofvillages).

2. ***Mobility Element.*** The draft Mobility Element contains policies to reduce pollution through greater use of alternative modes of transportation, and to reduce large surface parking areas. For example, the Parking Management section of the element states that our parking strategies need to "address parking demand and supply and concurrently help implement General Plan goals (discussed above) for reducing storm water runoff and urban sprawl".

3. ***Monitoring Report.*** In addition, a General Plan Monitoring Report (dated July 2004) was prepared using data gathered through June 2004. The report monitors progress toward implementing the Strategic Framework Element/City of Villages strategy and serves as a public education tool. The report addresses "Stormwater and Urban Runoff," and "Environmental Education" efforts. The report also includes a section on San Diego's "Sustainable Community Program Indicators." These indicators measure the region's long-term health, or sustainability, on a variety of topics. Many of the indicators relate to storm water runoff including: #2 Create Neighborhoods We Can Be Proud of (monitor street trees per mile), #3 "Clean Up Our Beaches and Bays," #5 "Pursue Energy Independence (implement Green Building Policy)," #6 Complete Multiple Species Conservation Program (MSCP) Open Space Acquisition (provides large contiguous tracks of open space) and #7 "Water Conservation."

## **2.2 Watershed-Based Land Use Planning Mechanisms**

Refer to the FY 04 Unified WURMP Annual Report for a discussion of the mechanism for integrating watershed monitoring data into each jurisdiction's land use planning process.

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

This activity is discussed in the FY 04 Unified WURMP Annual Report prepared by the County of San Diego.

### **2.3.1 Additional Planning Activities.**

Community plans are documents that guide the growth and development of a community. They include land use designations, design recommendations, and policies on a wide range of topics. They are a part of the City's General Plan. Plans currently underway are addressing community-specific policies related to urban runoff and water quality. (The more general, citywide policies have been incorporated into the draft Conservation Element of the General Plan.) Community specific policies include:

La Jolla Community Plan: Staff secured Coastal Commission adoption of the La Jolla Community Plan, which included extensive storm water policies as related to coastal bluffs and steep hillsides. For example, Coastal bluffs polices are to: direct roof and surface drainage away from the bluff towards the street or into special drainage facilities that have been equipped to divert water runoff from flowing over the bluff; improve existing street drainage outlets with energy dissipating devices or other similar measures in order to minimize erosion caused by quantity, velocity, or content of runoff; and create a monitoring program to ensure compliance with this Plan's policies and recommendations related to bluff top drainage. Steep Hillsides policies are to maintain the natural surface drainage system. "This includes intermittent streams, creeks, gullies and rivulets, especially where such drainage ways adjoin or traverse other properties. The way in which changes to the natural land form or its surface coverage affects the natural drainage system must be determined prior to project approval. Sensitive design and the control of runoff will help eliminate problems of erosion, landslides or damage to plant and animal life."

Staff presented the plan update to two Coastal Commission hearings, two City Council hearings, and at least two La Jolla Planning Group meetings where water quality issues were discussed.

## **3.0 Educational Activities**

### **3.1 Summary of Watershed Education Activities**

This activity is discussed in the FY 04 Unified WURMP Annual Report prepared by the County of San Diego.

### **3.2 Summary of Watershed Education and Outreach Conducted**

This activity is discussed in the FY 04 Unified WURMP Annual Report prepared by the County of San Diego.

### 3.3 Education Action Plan

#### 3.3.1 Public Presentations & Media

Public presentations are aimed at professional organizations and industry-specific associations. They incorporate both general watershed principles common to all watersheds and specific best management practices of interest to the particular audience to address pollution prevention. Core watershed concepts and principles are incorporated into public presentations and media opportunities. Due to staffing limitations, no public presentations were held in the Mission Bay and La Jolla watershed in FY 04. The FY 04 Unified WURMP Annual Report contains information regarding regional education efforts affecting the Mission Bay and La Jolla Watershed.

The Think Blue FY 2004 Media Buy summary is discussed in the County of San Diego's FY 04 Unified WURMP Annual Report.

#### 3.3.2 Regional Watershed Brochure: What is a Watershed?

This activity is discussed in the FY 04 Unified WURMP Annual Report prepared by the County of San Diego.

#### 3.3.3 Regional Watershed Poster: What Watershed Do You Live In?

This activity is discussed in the FY 04 Unified WURMP Annual Report prepared by the County of San Diego.

#### 3.3.4 School Presentations: Water Quality and Watersheds

Due to staffing limitations, the City of San Diego did not conduct any San Diego School District watershed presentations.

#### 3.3.5 Integrated Pest Management Campaign

This activity is discussed in the FY 04 Unified WURMP Annual Report.

#### 3.3.6 Community Events

Due to staffing limitations the City of San Diego has had limited opportunities to attend community events. Materials such as the Think Blue (<http://www.thinkbluesd.org/>) watershed education information have been prepared and are on hand for use by City staff. Elected officials have distributed educational materials at various community events within the Mission Bay and La Jolla watershed.

#### 3.3.7 Watershed Brochure: Mission Bay Pollution Starts at Your Door

Developed in the 1990's the City of San Diego has distributed the *Mission Bay Pollution Starts at Your Door* watershed brochure extensively throughout the Mission Bay and La Jolla watershed. Information provided to residents explains the problem of pollutants traveling to the Mission Bay drainage area as well as identifying sources of non-point source pollution. Additional topics covered in the brochure include what residents can do to help in the home, yard, garden and with automobiles. Contact numbers for whom to call for information or to report a spill are also provided to residents.

## 4.0 Public Participation Activities

The following sections summarize the activities and efforts made by the City of San Diego to encourage public participation during this reporting period. Please note that this section is not exhaustive and only discusses the activities that were identified in the Public Participation section of the Watershed URMP. Many municipalities have worked with stakeholders on efforts such as the planner's reference manual, grant applications and water quality data collection. The City 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.

### 4.1 Mission Bay Park Committee

The Mission Bay Park Committee meets monthly. It is composed of fifteen members that advise the Mayor of San Diego on policy issues relating to the acquisition, development, maintenance, and operation of Mission Bay Park. During the FY 04 reporting period watershed issues were discussed several times at various meetings. Stormwater staff attended and was often the key presenter with watershed topics.

### 4.2 City of San Diego and Stakeholder Collaboration/Community Events

The City of San Diego solicited input from all stakeholders through email and postings of draft Watershed URMP documents on the Project Clean Water website ([www.projectcleanwater.org](http://www.projectcleanwater.org)).

*Direct Interaction:* In addition to those methods already described, the City of San Diego continued to rely heavily on the interaction of staff with members of the public during their regular job duties. As described further in the Jurisdictional URMPs, municipal staff with program implementation responsibilities received targeted training to increase their understanding of urban runoff issues. Staff interaction with the general public provides an additional avenue for obtaining direct feedback from the public. Feedback and interaction were conducted during the discretionary permit review process, building permitting process, building inspections and public presentations and outreach campaigns.

### 4.3 Integration and Participation in Local Planning Activities

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

### 4.4 Project Clean Water – Mission Bay and La Jolla Watershed Website

During this reporting period, Project Clean Water provided a venue for public participation and involvement in local watershed activities. The relationship of these efforts to Watershed URMP development and implementation cannot be overstated since they address complementary objectives and all rely on public participation for success.

- ✓ The Project Clean Water watershed website ([http://www.projectcleanwater.org/html/ws\\_map.html](http://www.projectcleanwater.org/html/ws_map.html)) was revised in March 2002 to provide watershed-based resources. The Watershed Map page is the starting point of the watershed website. Visitors wishing to learn more about a particular watershed can simply “click” on a desired watershed in the Watershed Map. Once selected, the visitor is linked to the watershed’s summary page and provided with additional link options.

According to data received from the County of San Diego the Mission Bay and La Jolla WURMP website received 404 hits during FY 2003-2004.

## **4.5 Stakeholder Workgroups**

### 4.5.1 Mission Bay Clean Water Technical Advisory Committee (TAC)

The Mission Bay Clean Water TAC met twice in FY 2004. Meetings were held on November 19<sup>th</sup>, 2003 and February 24, 2004. The purpose of these meeting was to coordinate and discuss water quality issues in Mission Bay. While the meetings were open to the public they were not widely advertised.

### 4.5.2 City of San Diego Clean Water Task Force

The Clean Water Task Force met one time during the 2004 fiscal year, and sought public comment on all agenda items, in addition to reserving time for public comment on non-agenda items. Some of the significant items discussed included:

- Sewer Spill Reduction Program Update (MWWD, City of San Diego)
- Update on Mission Bay Water Epidemiology Study Evaluation and Testing (City of San Diego)
- Low Flow Diversion Program Status Report (City of San Diego Transportation & Drainage Design Division)
- Mission Bay Contaminant Dispersion Study (Scripps Institute of Oceanography)

This section provides a brief summary of the assessment of the water quality constituents of concern in the Mission Bay and La Jolla watershed conducted by MEC for 2004<sup>1</sup>. To review the complete water quality assessment report, please refer to Section 9 of the *2003-2004 San Diego County Municipal Copermittees Urban Runoff Monitoring Report* prepared by MEC posted on the Project Clean Water website ([http://www.projectcleanwater.org/html/wurmp\\_mission\\_bay.html](http://www.projectcleanwater.org/html/wurmp_mission_bay.html)). In addition, based on the 2004 assessment data and constituent of concern results, this section provides an updated assessment of the high priority water quality issues in the Mission Bay and La Jolla watershed (an initial list of high priority and potential high priority issues was established in the Mission Bay and La Jolla Watershed URMP). Information regarding program implementation that is applicable to all watersheds has been moved to the FY 04 Unified WURMP Annual Report.

## 1.0 2004 Mission Bay and La Jolla Water Quality Assessment

### 1.1 Constituents of Concern Summary – 2004

A discussion of the methodology for this topic is located in the FY 04 Unified WURMP Annual Report. Refer to the table below for a summary of the constituents of concern for the Mission Bay and La Jolla Watershed during FY 04.

Table III-1. Summary of constituents of concern assessment comparison.

	Fecal Coliform	Total Coliform	Enterococcus	Diazinon	Total Suspended Solids	Turbidity	Zinc	Copper	COD	Malathion
Tecolote Creek 2002	◆◆◆			◆◆	◆◆	◆◆	◆	◆		
Tecolote Creek 2003	◆◆◆			◆◆◆	◆◆	◆◆	◆	◆◆◆	◆	◆
Tecolote Creek 2004	◆◆	◆	◆	◆◆	◆	◆◆			◆	
◆◆◆- Higher frequency of occurrence ◆◆- Medium frequency of occurrence ◆- Lower frequency of occurrence										

<sup>1</sup> Note: the analysis was based on water quality monitoring data gathered between July 2003 and June 2004.

The constituents of concern for the Mission Bay and La Jolla watershed identified in 2004 were compared to the last two year's water quality assessments, as shown in Table III-1. The following changes were noted for the Mission Bay and La Jolla Watershed in 2004 as compared to the previous two year's assessments.

- ✓ Total Coliform and Enterococcus are more apparent as constituents of concern.
- ✓ Turbidity and Chemical Oxygen Demand (COD) continue to be apparent as constituents of concern.
- ✓ Fecal Coliform, Diazinon, Total Suspended Solids, Zinc, Copper and Malathion are all less apparent as constituents of concern.

Based on a combined analysis of the 2002, 2003 and 2004 assessments, Enterococcus, Fecal Coliform, Total Coliform, Diazinon, Total Suspended Solids, Turbidity, Zinc, Copper, Chemical Oxygen Demand (COD) and Malathion remain constituents of concern (See Table III-2). Potential sources of the constituents of concern are identified in Table III-2. The Copermittees will continue to develop greater certainty of the sources of the constituents of concern as additional years of data are gathered.

**Table III-2. Potential sources/causes of various constituents in the Mission Bay & La Jolla Watersheds.**

Constituents of Concern:	Potential Sources / Activities:
Bacterial Indicators: Fecal Coliform bacteria, T. Coliform	Human sewage from failed septic systems, sewer spills or homeless encampments; wildlife-including birds, dogs, coyotes, raccoons, etc; domestic animals-including livestock and pets. The <i>Mission Bay Clean Beaches Initiative Bacterial Source Identification Study</i> found that up to 67% of the bacterial indicators in Mission Bay were from birds.
Diazinon	Pesticide used residentially, agriculturally, and commercially.
Total suspended solids/Turbidity	Erosion, suspended sediment/solids, construction, sewage, Eutrophication.
Toxic substances: Copper, Zinc	Automobiles or industrial wastes.
Chemical Oxygen Demand	Industrial wastes, agriculture.
Malathion	Pesticide used residentially, agriculturally, and commercially.

The City of San Diego's Illicit Connection Illicit Discharge (ICID) program tracks and inspects sources or potential sources of pollutants when potential issues are identified from the City's dry-weather monitoring program, or when notified by calls from the public, other agencies, or City employees. The ICID program efforts have identified some specific sources of pollution in each of the City's watersheds. However, it is unknown to what extent these specific pollutant sources contribute to the resulting constituents of concern shown in Tables III-1 and III-2. Additional analysis of the ICID investigations, such as geospatial analysis of the investigations to determine if there are local "hotspots," could assist in identifying sources of constituents of concern, and potentially help formulate activities that would be best suited to address them. As staffing and budget allows, the City (and/or through its consultants performing the watershed water

quality assessments) aim to conduct additional analysis of the ICID data to help determine the sources of constituents of concern (see recommendations in Section V).

## 1.2 Updated List of High Priority Water Quality Issues

The high priority water quality issues as well as other salient constituents of concern identified in this section are tracked and reassessed through the yearly assessment and reporting process.<sup>2</sup> The updated constituents of concern and high priority water quality issues lists, and the justification for how these lists were developed, follows.

Table III-3. Water Quality Assessment Summary Table – Year 3 (2004).

POTENTIAL WATER QUALITY ISSUE(S)	CONSTITUENTS OF CONCERN, AND/OR STRESSORS ADDRESSED	HIGH PRIORITY?	COMMENTS AND PROPOSED ACTIVITIES
Limiting recreation opportunities in bay and coastal waters due to potential for pathogens	Bacterial Indicators (fecal coliform)	Yes	<p>Bacteria have been identified as a priority by the City of San Diego and Regional Board. Protecting our beaches as recreational resources is paramount to the protection of the quality of life and economic vitality of the San Diego Region.</p> <p>ACTIONS*:                      Mission Bay Low Flow Storm Drain Diversion System                      Mission Bay Bacteria Source Identification Source Project;                      Mission Bay Clean Beaches Project – Mission Bay Centralized Computer Irrigation System                      Mission Bay Water Quality Survey                      Mission Bay Epidemiology Study                      Rose &amp; Tecolote Creeks Water Quality Improvement Projects                      Coastal Low Flow Storm Drain Diversion Project                      Pacific Beach (PB) Point Bacteria Source Identification</p>
Limiting habitat value of water bodies	Diazinon	No	<p>Diazinon levels were exceeded on three occasions in the 2001-2002 season at the mass loading station. Based on data collected across San Diego watersheds, local agencies are collaboratively addressing the use of pesticides as an important component of proactive storm water runoff management activities at the regional level.</p> <p>ACTION:                      Integrated Pest Management Campaign (County-wide)</p>

<sup>2</sup> For information regarding the City of San Diego methodology for assessing constituents of concern and high priority water quality issues, refer to the FY 2004 Unified WURMP Annual Report.

POTENTIAL WATER QUALITY ISSUE(S)	CONSTITUENTS OF CONCERN, AND/OR STRESSORS ADDRESSED	HIGH PRIORITY?	COMMENTS AND PROPOSED ACTIVITIES
Limiting habitat value of water bodies	Malathion	No	<p>Malathion was found to have a low frequency of occurrence in 2003 and did not appear in 2004. Based on data collected across San Diego watersheds, local agencies are collaboratively addressing the use of pesticides as an important component of proactive storm water runoff management activities at the regional level.</p> <p>ACTION: Integrated Pest Management Campaign (County-wide)</p>
Limiting habitat value of water bodies	Turbidity / Total Suspended Solids	No	<p>Total Suspended Solids and Turbidity were found at moderately high levels in the mass loading station (MLS) in 2002 and 2003. Turbidity remains at a moderately high level in 2004 while Total Suspended Solids has a lower frequency of occurrence. Comprehensive evaluation of data and other existing information may address need to develop understanding of sedimentation and other pollutant sources and determine appropriate remedial actions.</p> <p>ACTION(s): SUSMP Implementation, Data Collection and Analysis</p>
Limiting habitat value of water bodies	Eutrophication	No	<p>The 1998 303(d) listing Mission Bay shoreline at the mouth of Rose and Tecolote Creeks for Eutrophication. MLS (93-01) trend data suggest decreasing BOD levels (statistically significant at the 5% level). Total Kjeldahl Nitrogen is also found to be decreasing at a statistically significant rate. Need to continue monitoring and integrate more data scheduled to be collected into subsequent assessments in order to better understand conditions of concern as related to habitat protection.</p> <p>ACTIONS: Data Collection &amp; Analysis Mission Bay Water and Sediment Testing Project; Rose and Tecolote Creeks Water Quality Improvements Project; and, Tecolote Creek Treatment Wetland Project.</p>
Limiting habitat value of water bodies	Toxicity	No	<p>While 2002 MLS data do not indicate persistent toxicity, Tecolote Creek is 303(d) listed for toxicity. Linkages between MLS data and 303(d) listing cannot be made at this time.</p> <p>ACTIONS: Data Collection and Analysis.</p>

POTENTIAL WATER QUALITY ISSUE(S)	CONSTITUENTS OF CONCERN, AND/OR STRESSORS ADDRESSED	HIGH PRIORITY?	COMMENTS AND PROPOSED ACTIVITIES
Limiting habitat value of water bodies	Total Metals (Zinc, Lead, Copper and Cadmium)	No	<p>The MLS data for metals during 2001-2002 shows very low levels of metals in concentrations well below criteria levels. The historical data suggest decreasing levels over time for all metals identified as constituents of concern in 303(d) listing (Zinc, Lead, Copper and Cadmium). Notably, the downward trends for zinc, lead and cadmium as measured at the MLS over time are statistically significant at the 5% level. MLS data also indicate copper has been found consistently within acceptable thresholds.</p> <p>ACTIONS:  Data Collection and Analysis;  Rose and Tecolote Creeks Water Quality Improvement Project; and,  Tecolote Creek Wetland Treatment Project.</p>
<p><i>* Future actions will be reassessed due to the findings of the Mission Bay Epidemiology Study.</i></p>			

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 Stormwater Permit by identifying and reporting on measures to assess the effectiveness of the Mission Bay and La Jolla Watershed URMP.

### 1.0 Programmatic Assessment

The Mission Bay and La Jolla Watershed URMP's overall program goal and implementing objectives are:

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

- Objective #1:     *Develop/expand methods to assess and improve water quality within the watershed (Water Quality Activities);*
- Objective #2:     *Integrate watershed principles into land use planning (Land Use Planning Activities);*
- Objective #3:     *Enhance public understanding of sources of water pollution within the watershed (Educational Activities).*
- Objective #4:     *Encourage and enhance stakeholder involvement within the watershed (Public Participation Activities).*

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 related to the Watershed URMP goals and objectives is outlined below.

Activities conducted within the Mission Bay and La Jolla watershed 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 require the collection of data over several years to detect and change. Although the City of San Diego has 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 confirmation of changes in water quality throughout the Mission Bay and La Jolla watershed cannot yet be determined.

### 1.1 Level 1: Compliance with Activity-Based Permit Requirements

Within the Mission Bay and La Jolla watershed, the City of San Diego fulfilled the requirements of the Municipal Permit and was in compliance during the 2003-2004 reporting period. It can be assumed that the efforts made have had a positive effect on water quality. Table 4.1 outlines selected Level 1 Targeted Outcomes by relating the activities conducted by the City of San Diego to one of the four objectives and the requirements specified in the Municipal Permit.

Table IV-1. Level 1 targeted outcomes.

Permit Requirements (J.2)	Objective	Activities	Status
(a) An accurate map of the watershed	#2	<ul style="list-style-type: none"> <li>Mission Bay and La Jolla Watershed Map</li> </ul>	Complete
(b) Assessment of receiving water quality	#1	<ul style="list-style-type: none"> <li>MEC 2003-2004 Urban Runoff Monitoring Report</li> </ul>	Complete for 2003-2004
(c) Identification and prioritization of major water quality problems	#1	<ul style="list-style-type: none"> <li>Section III Water Quality Assessment</li> </ul>	Complete for 2003-2004
(d, e) short and long-term recommended activities for highest priority water quality issues	#1	<ul style="list-style-type: none"> <li>Data Collection &amp; Analysis</li> </ul>	Ongoing
		<ul style="list-style-type: none"> <li>IPM Campaign</li> </ul>	In progress
		<ul style="list-style-type: none"> <li>Mission Bay Bacteria Source Identification Source Project</li> </ul>	Complete
		<ul style="list-style-type: none"> <li>Mission Bay Clean Beaches Project – Mission Bay Centralized Computer Irrigation System</li> </ul>	In progress
		<ul style="list-style-type: none"> <li>Mission Bay Water Quality Survey</li> </ul>	Complete
		<ul style="list-style-type: none"> <li>Mission Bay Epidemiology Study</li> </ul>	Completed; final report pending
		<ul style="list-style-type: none"> <li>Rose &amp; Tecolote Creeks Water Quality Improvement Projects</li> </ul>	In progress
		<ul style="list-style-type: none"> <li>Mission Bay Low Flow Storm Drain Diversion</li> </ul>	Operational
<ul style="list-style-type: none"> <li>Coastal Low Flow Storm Drain Diversion Project</li> </ul>	Operational; future sites under construction		

Permit Requirements (J.2)	Objective	Activities	Status
(f) public participation	#4	<ul style="list-style-type: none"> <li>• Copermittee and Stakeholder Collaboration /Public Participation (meetings, e-mail and web)</li> </ul>	Ongoing
		<ul style="list-style-type: none"> <li>• Direct Interaction</li> </ul>	Ongoing
		<ul style="list-style-type: none"> <li>• Project Clean Water</li> </ul>	Ongoing (website is updated as new information warrants)
		<ul style="list-style-type: none"> <li>• Clean Water Task Force</li> </ul>	Temporarily Suspended
		<ul style="list-style-type: none"> <li>• Mission Bay Park Committee</li> </ul>	Ongoing
(g) Watershed-based education program	#3	<ul style="list-style-type: none"> <li>• Public Presentations and Media/Watershed Element</li> </ul>	Ongoing – none requested
		<ul style="list-style-type: none"> <li>• School Outreach</li> </ul>	Ongoing – none requested
		<ul style="list-style-type: none"> <li>• Project Clean Water</li> </ul>	Ongoing
		<ul style="list-style-type: none"> <li>• </li> </ul>	
(h) watershed based land use planning	#2	<ul style="list-style-type: none"> <li>• County General Plan Update</li> </ul>	Ongoing
		<ul style="list-style-type: none"> <li>• City of San Diego General Plan Update</li> </ul>	Completed (proceeding with GP components)
		<ul style="list-style-type: none"> <li>• Land Use Professional's Reference Manual: "Stormwater Quality and Watershed Protection - Looking at Alternative Development Policies"</li> </ul>	Ongoing
		<ul style="list-style-type: none"> <li>• La Jolla Community Plan</li> </ul>	Completed
		<ul style="list-style-type: none"> <li>• </li> </ul>	

## 1.2 Level 2: Effectiveness (Changes in Knowledge / Awareness)

According to the *Storm Water Pollution Program 2004 Follow-up Survey of City Residents*, the City of San Diego has charted a positive change in behavior. While the survey does not provide watershed specific data at this time, the City hopes to in future years as funding and staffing allow.

The following programs implemented by the City of San Diego within the Mission Bay and La Jolla watershed may have contributed to an increase in knowledge and/or awareness of program participants.

- Project Clean Water
- Watershed URMP Workgroup

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 Mission Bay and La Jolla watershed.

### 1.3 Level 3: Effectiveness (Behavioral Change / BMP Implementation)

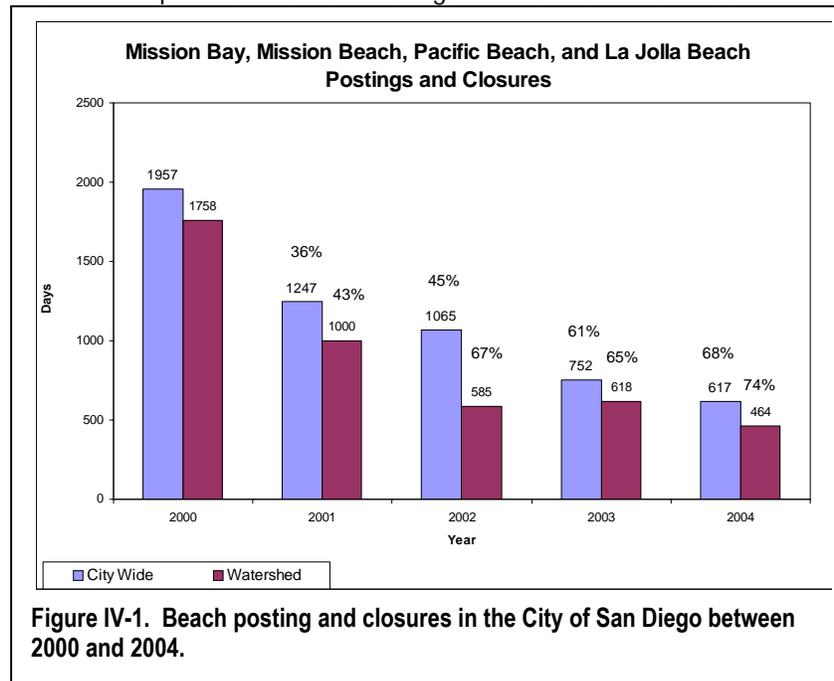
Based on several programs it can be assumed that the City's efforts have had a positive effect on water quality. It is likely that implementation of construction and permanent BMP's resulted in positive effects to water quality in the watershed through implementation of the programs listed below. Changes in implementation of BMPs were documented through the following City program:

- Storm Water Standards Manual (Construction BMP and SUSMP Implementation)
- Coastal Storm Drain Low Flow Diversion Project
- Mission Bay Low Flow Storm Drain Diversion System

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 Mission Bay and La Jolla Watershed.

### 1.4 Level 4-6: Effectiveness (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 City of San



**Figure IV-1. Beach posting and closures in the City of San Diego between 2000 and 2004.**

Diego is currently 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. However, it should be noted that the City has reported a **68% decrease in beach postings and closures** in 2004 citywide.

In 2000, Mayor Dick Murphy and the City Council adopted a goal of reducing our beach closures and postings by 50% by 2004. At the end of calendar year 2003, the City realized a 61 percent reduction (See Figure 16-1). That means that San

Diego's beaches were dramatically cleaner than in previous years illustrating the City of San Diego's efforts to find and eliminate sources of bacteria that close our beaches. The staff that oversaw and investigated beach posting and closures were highly motivated and experienced environmental investigators. Specific reductions of beaches within this watershed include (See Table IV-2, IV-3 and IV-4.):

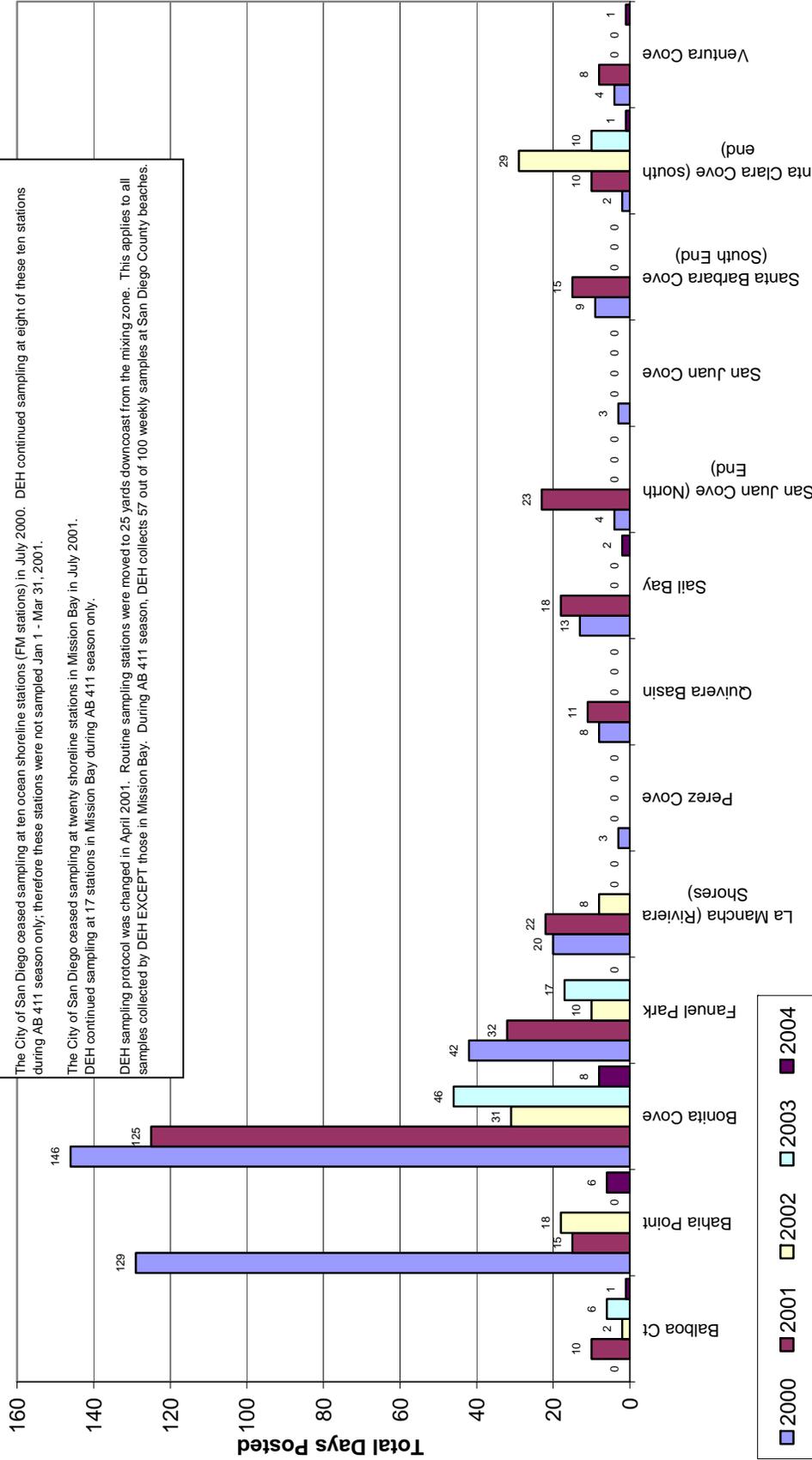
## Beach Advisory History For West Mission Bay, City of San Diego

Advisories for exceedances in monitoring were issued during General Advisory periods Jan 1 - Mar 31, 2000. Advisories were NOT issued during General Advisory periods Jan 1 - Mar 31, 2001. State law requires advisories to be issued for exceedances any time during AB 411 season.

The City of San Diego ceased sampling at ten ocean shoreline stations (FM stations) in July 2000. DEH continued sampling at eight of these ten stations during AB 411 season only; therefore these stations were not sampled Jan 1 - Mar 31, 2001.

The City of San Diego ceased sampling at twenty shoreline stations in Mission Bay in July 2001. DEH continued sampling at 17 stations in Mission Bay during AB 411 season only.

DEH sampling protocol was changed in April 2001. Routine sampling stations were moved to 25 yards downcoast from the mixing zone. This applies to all samples collected by DEH EXCEPT those in Mission Bay. During AB 411 season, DEH collects 57 out of 100 weekly samples at San Diego County beaches.



**Mission Bay Beaches**

Figure IV-2

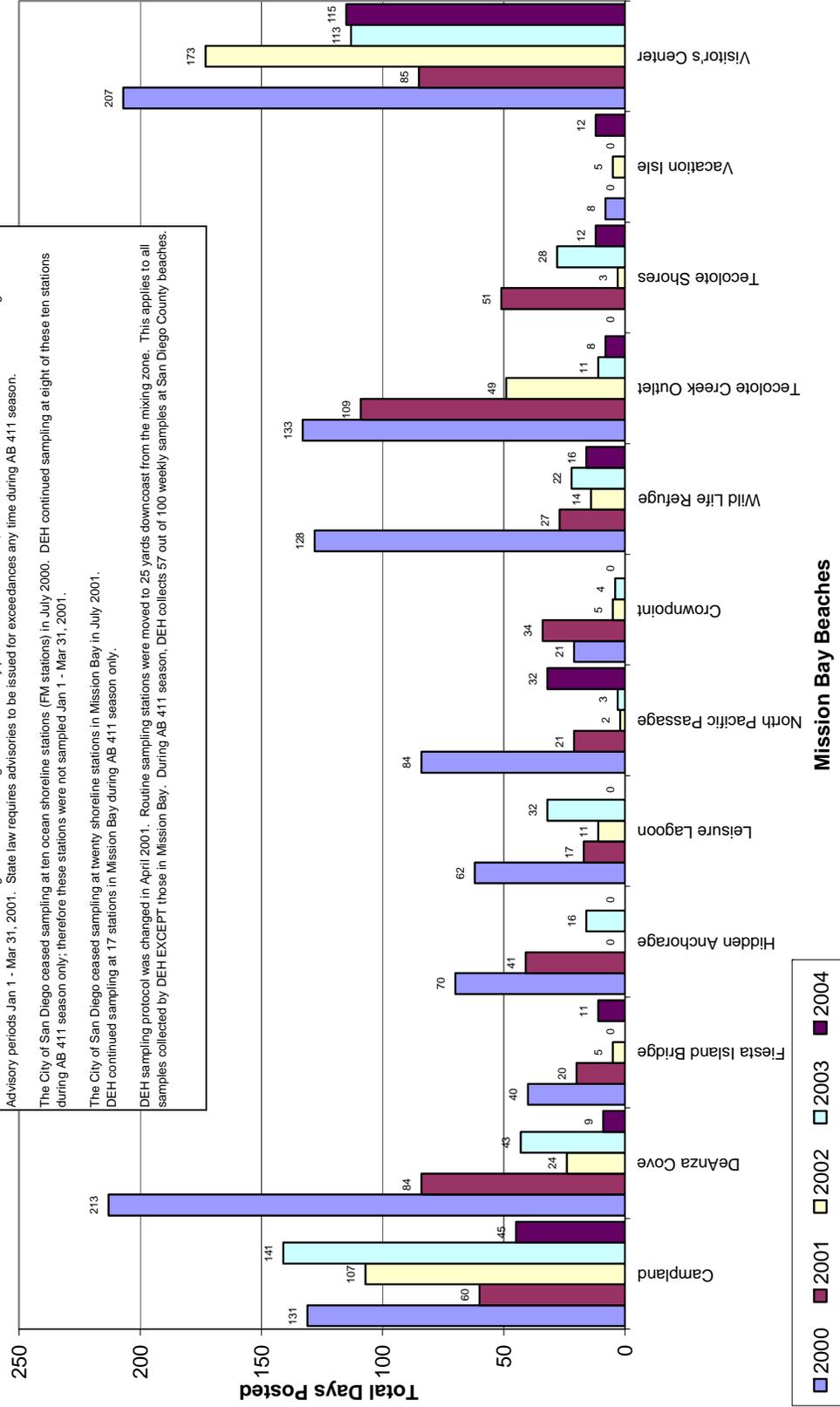
## Beach Advisory History East Mission Bay, City of San Diego

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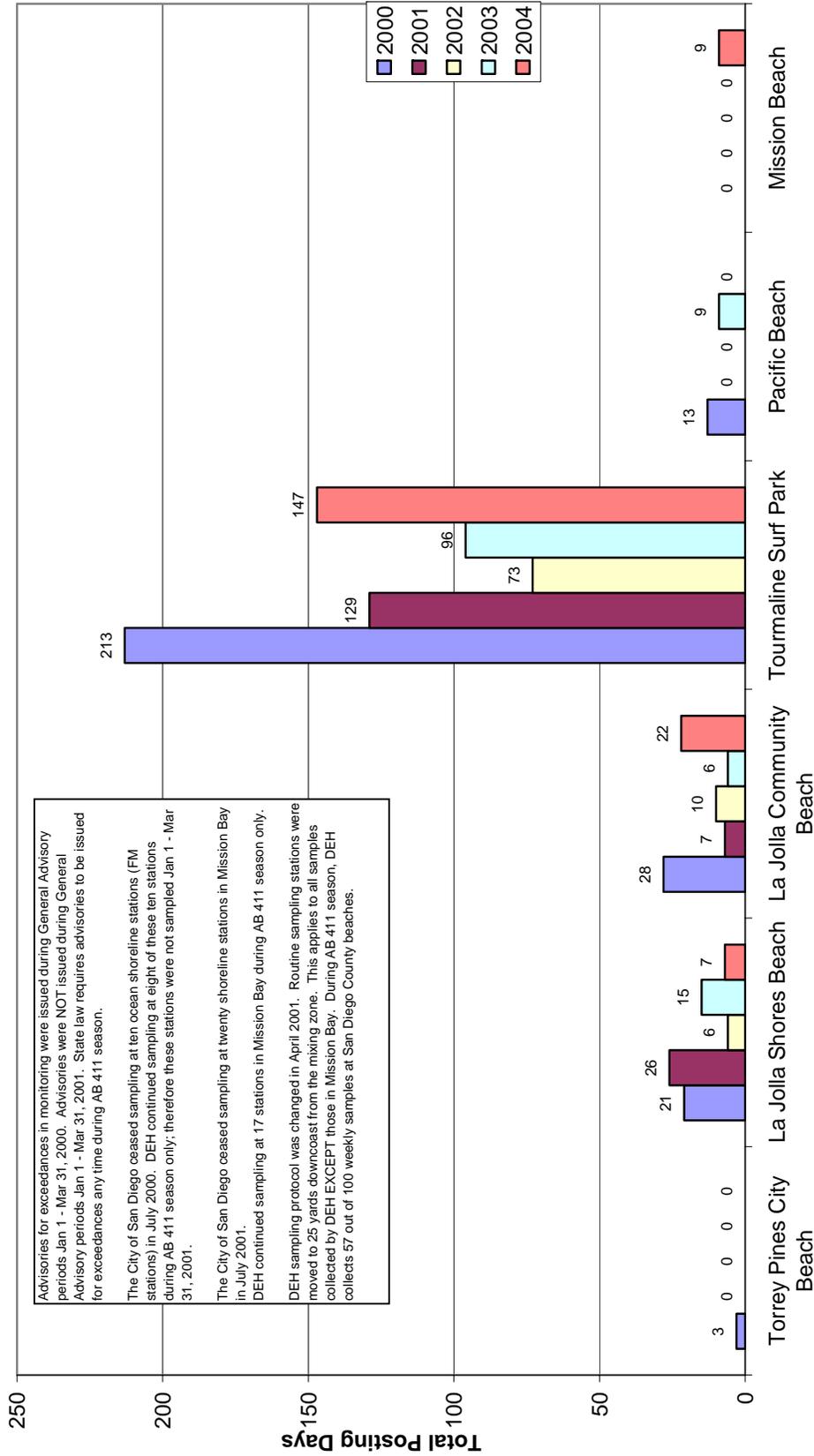
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**Mission Bay Beaches**

Figure IV-3

## Beach Advisory History City of San Diego 2000-2001-2002-2003-2004



Advisories for exceedances in monitoring were issued during General Advisory periods Jan 1 - Mar 31, 2000. Advisories were NOT issued during General Advisory periods Jan 1 - Mar 31, 2001. State law requires advisories to be issued for exceedances any time during AB 411 season.

The City of San Diego ceased sampling at ten ocean shoreline stations (FM stations) in July 2000. DEH continued sampling at eight of these ten stations during AB 411 season only; therefore these stations were not sampled Jan 1 - Mar 31, 2001.

The City of San Diego ceased sampling at twenty shoreline stations in Mission Bay in July 2001. DEH continued sampling at 17 stations in Mission Bay during AB 411 season only.

DEH sampling protocol was changed in April 2001. Routine sampling stations were moved to 25 yards downcoast from the mixing zone. This applies to all samples collected by DEH EXCEPT those in Mission Bay. During AB 411 season, DEH collects 57 out of 100 weekly samples at San Diego County beaches.

**Beach Areas**

**Figure IV-4**

## 1.0 Conclusions

Between July 2003 and June 2004, the City of San Diego in the Mission Bay and La Jolla watershed continued to implement the FY 2004 actions planned in response to the water quality assessment identified in the Mission Bay and La Jolla Watershed URMP.

Due to the Mayor's beach posting reduction goal, the City focused many of its program efforts in the Mission Bay area and the coastal communities that drain directly to the ocean. The City was fortunate to receive funding from the State Clean Beaches Initiative, the federal Environmental Protection Agency (EPA), and other sources which allowed major work such as the Coastal Low Flow Storm Drain Diversion Project and the Mission Bay Bacteria Source Identification Study to be conducted.

The City of San Diego was a pioneer in low flow storm drain diversion technology having constructed its first facilities in the mid-1980's. Eight diversion systems located in the East Mission Bay area have operated for almost 20 years addressing 90% of the watershed. The current system is a network of 46 facilities that provide a ring of protection around Mission Bay against pollution during periods of dry weather. The Coastal Low Flow Storm Drain Diversion project (refer to Appendix C) extended low flow diversion technology to the coastal beaches. This project, which is being constructed in phases, is partially funded by the EPA.

Millions of dollars have been spent recently on special studies to better understand Mission Bay water quality. The results of these studies were significant and will guide the City as it addresses water quality issues in the future. For example, the City learned that the bacteria levels in most of Mission Bay meet water quality standards. A request to remove all but portions of Mission Bay from the 303(d) list will be forwarded to the State during the upcoming review cycle.

Grant-funded special projects made up a large part of the Mission Bay and La Jolla Watershed URMP efforts. In FY04, the City's budget for implementing the watershed urban runoff management programs was generally limited to water quality assessments and preparation of the FY03 Annual Reports. Little or no staffing was available to coordinate watershed activities or to facilitate multiple stakeholder meetings within the watershed. The planner positions with the Storm Water Pollution Prevention Division responsible for watershed efforts remained vacant for half of the reporting period due to a hiring freeze imposed by the City Manager. Subsequently, one of the two planner positions was eliminated in the Fiscal Year 2005 budget due to mandatory budget reductions for General Fund departments.

Due to funding limitations, the City of San Diego focused primarily on citywide strategies that represented common issues within multiple watersheds. These unified approaches served to maximize water quality protection through effective and efficient use of resources. As such, efforts to expand and strengthen this WURMP have not been a top priority. The City of San Diego has focused resources on efforts that maximized water quality benefits, such as regional and jurisdictional programs that target constituents of concern affecting watersheds rather than specific watersheds, and a consolidated water quality program for all nine of the permit-specified watersheds. Without specifically identifying the Mission Bay and La Jolla

watershed, the activities directly benefited water quality in the watershed more effectively than could have been achieved with fragmented efforts divided across multiple watersheds.

The City of San Diego's current budgetary constraints make it only more clear that continued collaboration and thoughtful coordination and integration between regional, watershed and jurisdictional programs are keys to the development of quality programs that are cost-effective and responsive to the needs of our customers. We are not proposing to do less; but rather to have the flexibility to adjust and implement programs that achieve the most water quality benefits. The City of San Diego continues to work on balancing the level and type of information required for both Jurisdictional and Watershed URMPs. Only time and continued implementation will tell whether or not the programs established pursuant to this Municipal Permit will meet the standards of water quality improvement and cost-effectiveness that together define practicability. Increased cooperation between the City of San Diego and the RWQCB will be necessary as we continue to move our programs forward.

Above all, the Mission Bay and La Jolla Watershed URMP and Annual Reports should be considered part of overall program development. The City of San Diego has responded well to meet the challenges of implementing new and aggressive Municipal Permit requirements in a very short period of time. The City of San Diego feels that it has made significant strides in developing a comprehensive storm water program that could serve as a model for other regions. It is also recognized that improvement and refinement is an important part of all program areas and the Watershed URMPs will need to be augmented over the long term as the City of San Diego continue to develop a better understanding of the complex issues affecting the Mission Bay and La Jolla watershed. During the development and initial implementation of this program, the City of San Diego has identified a few lessons learned over the past year that deserve mentioning.

- Controlling program costs and establishing stable program funding must remain a key focus.
- Activities and efforts should be addressed at the most efficient scale-- regional, watershed, or jurisdictional-- depending on the activity.
- Lastly, the region should continue to strive for more efficient collaboration among watershed stakeholders and efforts.

## **2.0 Recommendations**

Based upon the updated water quality data discussed in Section III of the Annual Report and the activity effectiveness assessment completed in Section IV of the Annual Report, the City of San Diego proposes that no amendments to the Watershed URMP program be made at this time. However, to help focus efforts in future years, additional information has been included regarding data collection and analysis and potential activities:

### **2.1 Recommended Program Improvements <sup>4</sup>**

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<sup>4</sup> The City of San Diego will complete these activities contingent upon adequate funding in future years.

✓ **Data Collection & Analysis (Activity 4.2.9).** The most important contribution the WURMP programs can make towards protecting and improving water quality in Mission Bay (and any watershed) is to expand our understanding of the water quality issues in the watershed (i.e., the sources and magnitude of the issues), so that the City of San Diego, other entities, and interested members of the public (our watershed partners) can make more informed decisions and actions. For this reason, the data collection and analysis activity has been separated from the water quality activities. The City of San Diego's strategy for increasing our level of understanding contains two consecutive (although some overlap can occur) steps:

1. *Continue to gather additional water quality data suitable for the watershed assessments.* In order to effectively measure the water quality of the watershed, additional monitoring during both the dry and wet seasons is needed throughout the watershed to accurately identify, characterize and prioritize the constituents of concern and resultant water quality issues. As funding becomes available, the City of San Diego would like to increase the number of monitoring stations throughout the watershed. Grant proposals have been submitted to the state and regional board to fund such a regional monitoring program. For more information on this grant proposal, please refer to Section II of the County of San Diego's Unified Watershed URMP.
2. *Conduct more detailed analysis of available data to determine the sources of constituents of concern and prioritize water quality issues.* As more data is collected and analyzed, the City will then be able to work to identify the sources of the constituents of concern that have been identified in the watershed. Then, after these sources and likely sources have been identified, the City can modify program activities taken to eliminate these sources. Some steps the City intends to take to facilitate more detailed analysis:
  - *Create an internet-based GIS system for the Mission Bay and La Jolla Watershed to manage available monitoring data.* This software would allow the City and its watershed partners to share data, conduct detailed geospatial analysis currently not available, and foster education and public participation. The City of San Diego, with the County of San Diego, San Diego State, and other project partners, has applied for Proposition 50 grant funding to develop Common Ground in the Mission Bay and La Jolla Watershed (see Appendix B).
  - *Conduct detailed geospatial analysis of Illicit Connection Illicit Discharge (ICID) data to determine likely sources of constituents of concern.* The location of each ICID incident could be mapped by constituent to help determine location and/or magnitude of potential issues.
  - *Pacific Beach (PB) Point Bacteria Source Identification:* A study such as this could determine non-point source causes of bacterial pollution, identify potential bacteria amplifiers and determine their role in water quality impairment.

✓ **Actions Planned in Response to Assessment (Section 4.0).** Each year after the iterative water quality assessment and data analysis process occurs, the City of San Diego and its watershed partners can then continue to develop and refine the list of prioritized actions based on the findings (Section 4 of the Mission Bay & La Jolla WURMP). The City of San Diego concurs with the Regional Board's statement in comment number nine of the October 8, 2004 13267 letter, which stresses the importance of the water quality activities section of the WURMP programs. As stated in response number nine, the City will be creating a reworked and expanded water quality activities list over the next 12 months.

As an initial step in this effort, the City has begun considering revisions to the Water Quality Assessment Summary (Table 3-12 in the Mission Bay & La Jolla WURMP now shown as Draft Table V-1, below), and a new table that will include a prioritized list of potential activities (shown as Draft Table V-2, below). There are several benefits immediately apparent in these draft tables. First, the revised water quality assessment summary (Table V-1) more clearly shows which projects would address multiple issues in an effort to help direct limited resources to the most efficient projects. Second, the new potential projects table (Table V-2) allows for increased coordination between project partners by providing much more information useful for developing grant proposals. Over the next year, the City will be coordinating with others in the watershed with the goal of developing a comprehensive project list that is recognized by the community as being “the to do list” for water quality protection of Mission Bay, its tributaries (e.g., Rose & Tecolote Creeks) and the coastal beaches in Mission Beach, Pacific Beach and La Jolla. For example the City of San Diego will be participating in the Rose Creek Watershed Opportunities Assessment (See Section 1.8 located within Section II Implementation of this WURMP Annual Report) which has as its goal, to create an integrated vision of opportunities (e.g., projects) for future implementation.

It is very important to include a public participation process in the development of the activities list. The City anticipates a process that addresses the two distinct areas (those that drain to Mission Bay and those that drain to the Pacific Ocean) separately. The City also recognizes the need to address the State Ocean Plan’s prohibition of waste discharges into areas of special biological significance which affects the La Jolla Shores sub-watershed. The following tables illustrate the approach that the City will take.

**DRAFT Table V-1. Updated water quality assessment summary (this draft table is for EXAMPLE only)**

Prioritized Water Quality Issues <sup>1</sup>	Constituents of Concern and/or Stressor Addressed	Possible Sources	Potential Activities / Projects to Address Issues				
			PB Point Source ID Study	IPM Regional Outreach Program	Water Conservation	Metals Study	
Limiting recreation opportunities in bay and coastal waters due to potential for pathogens	Bacterial Indicators (fecal Coliform)	Birds; mammals; leaking sewer infrastructure;	√				
Limiting habitat value of water bodies	Diazinon	Parks, residential, commercial land uses		√			
Limiting habitat value of water bodies	Malathion			√			
Limiting habitat value of water bodies	Turbidity / Total Dissolved Solids (TDS)	Over irrigation			√		
Limiting habitat value of water bodies	Eutrophication			√			
Limiting habitat value of water bodies	Toxicity	Use of pesticides, over irrigation, roads, automobiles, railroads, galvanized products		√	√	√	

Limiting habitat value of water bodies	Total Metals (Zinc, Lead, Copper and Cadmium)	Roads, automobiles, railroads, galvanized products				√	
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<sup>1</sup> Note: This list is not yet prioritized; water quality issues have been included in the table as an example only.

**DRAFT Table V-2. Prioritized activities/projects to address water quality issues. (this draft table is for EXAMPLE only)**

Activity/ Project Name	Activity / Project Scope	Cost	Estimated Time to Implement	Potential Funding Sources	Status/Info
Mission Bay Bacteria Source Identification Project	Two phased approach to identifying and abating bacteria sources. Phase 1 identified bacteria sources and recommended actions to eliminate them; Phase 2 included source tracking (DNA tests), fate & transport and sediment assessment.	\$1,300,000 Phase 1: \$650,000; Phase II: \$650,000	Completed.	FULLY FUNDED by Governor's Clean Beaches Initiative (Proposition 13)	Completed.
Mission Bay (Watershed) Water Quality Study	Sample at 5 locations in Mission Bay and 19 locations in its subwatershed for bacterial analysis.	\$362,500	Completed.	FULLY FUNDED by Metro, Alvarado Spill Supplemental Environmental Project (SEP).	Completed.
Mission Bay Water Evaluation & Testing (WET) Epidemiology Study	Perform an epidemiological study at 6 locations on Mission Bay (Leisure Lagoon, Tecolote Shores, Visitor Center, De Anza Cove, Crown Point Shores, Bonita Cove) to determine the extent of pathogenic viral contamination to assess human health risks and the connection between water contact and human illnesses, and its frequency.	\$1,675,290	2 Years	FULLY FUNDED by \$975,290 SWRCB Cleanup and Abatement Fund; and \$700,000 by Metro, SEP - Tecolote Spill Fine.	Final report to be released early 2005. Illness surveys and water analysis were conducted by Southern California Coastal Water Research Project (SCCWRP) and UC Berkeley in summer 2003.
Mission Bay Contaminant Dispersion Study	Predict the extend of contamination under a variety of physical conditions, such as tidal and creek influences.	\$400,000	Completed.	FULLY FUNDED by Metro, SEP - Tecolote Spill fine.	Project Completed by Scripps Institute of Oceanography.
Mission Bay Clean Beaches Project (a.k.a. CIP No. 32-050.0 Rose & Tecolote Creeks Water Quality Improvements)	Circulate bay water using pumps at known problem areas, Cudahy & Tecolote Creek outlets in order increase mixing to kill bacteria	\$2,040,000	3 Years	Authorized \$170,000 of \$1.7 million from Clean Beach Initiative (Proposition 13) for design & permitting.	Project Canceled.
CIP No. 12-124.0 Beach Area Low Flow Storm Drain Diversion Phase II	Divert low dry weather flows including sewer spills to sewer collection system for treatment: 16 La Jolla sites; 2 Pacific Beach sites.	\$2,373,727	Completed.	FULLY FUNDED by EPA Grant and Sewer Revenue Fund.	Phase III anticipated construction to begin: 4/05.
CIP No. 12-124.0 Beach Area Low Flow Storm Drain Diversion Phase III	Divert low dry weather flows including sewage spills to sewer connection system for treatment: 5 La Jolla sites; 5 Pacific Beach sites; 1 Ocean Beach site.	\$2,452,800	3 Years	FULLY FUNDED by EPA Grant and Sewer Revenue Fund.	Design 100% completed. Construction scheduled 4/05 - 4/06.

Activity/ Project Name	Activity / Project Scope	Cost	Estimated Time to Implement	Potential Funding Sources	Status/Info
Mission Bay Pilot Treatment Systems	Implement wet weather treatment technology at 4 locations around Mission Bay.	\$4,000,000	2.5 - 3 years		Design and build 2 year duration.
CIP No. 22-945.0 Tecolote & Cudahy Creeks Treatment Wetlands	Evaluate construction of treatment wetlands at Tecolote and Cudahy Creeks. Construct treatment wetlands at Tecolote Creek mouth	\$4.5 million	3 Years	\$160,000 received from sludge mitigation fund.	Design 60% completed. Need to identify funds for additional design, construction and maintenance commitment.
Pacific Beach Point Special Investigation	Identify and abate bacteria sources and recommend actions to eliminate them.	\$3,500	Completed.	Funded by Metropolitan Wastewater Department (MWWDD)	Microbiological Source Tracking (DNA testing) results inconclusive
Mission Bay Computerized Irrigation Control System	Install irrigation control system to reduce irrigation runoff that carries bacteria to Mission Bay.	\$1,138,455 (\$902,000 from State)	7-1-04 to 3-1-06	FULLY FUNDED by Governor's Clean Beaches Initiative (Prop. 13)	Equipment installation to begin 4/05
Identification of Bacterial Sources at Pacific Beach Point	Identify potential sources of bacteria, the extent of pollution and eliminate sources when possible.	\$250,000	1 Year		Episodic beach postings.
Mission Bay Water & Sediment Quality Project with University of San Diego (USD)	USD and subcontractors will collect, analysis and report on the water quality, sediments, and pelagic and benthic communities in Mission Bay. Monitoring data and analysis then will be combined in a comprehensive watershed evaluation.	\$200,000	Completed.	FULLY FUNDED by Sludge mitigation funds approved by the Coastal Commission	Funding for 2nd year of study to be provided by 319(h) grant from the State Water Resources Control Board.
San Diego Region Integrated Pest Management (IPM) Education Project	Regional Integrated Pest Management (IPM) education program directed primarily towards residential pesticide-users. Project incorporates focused outreach activities and water quality monitoring within the Chollas Creek watershed in accordance with the Chollas Creek TMDL for Diazinon - San Diego County, adopted by the Regional Board in August of 2002.	Total project: \$1,352,500 City of San Diego portion for Chollas Creek: \$352,000	3 Years - Start 7/04	FULLY FUNDED. Proposal approved by State Board under Pesticide Research And Identification Of Source, And Mitigation (PRISM) Grants Program (Proposition 13). MOU with County PENDING	County of San Diego is the grant recipient. Project partners include UC IPM Statewide Project (administered locally under UC Cooperative Extension Office); and copermittees under Municipal Storm Water Permit.
"Water Quality Leaders" Program	Develop and implement a program to install, maintain, and evaluate effectiveness of 250 catch basin inserts. Recruit businesses to participate in an education program and to provide funding for the long-term maintenance of the inserts	\$1,200,000	4 years	Federal Funding VA-HUD and Independent Agencies EPA, Environmental Programs and Management Account	Project not submitted this fiscal year. Project Partners: San Diego Baykeeper & Abtech Industries

Activity/ Project Name	Activity / Project Scope	Cost	Estimated Time to Implement	Potential Funding Sources	Status/Info
Anti-litter campaign	Develop, produce and air 6-8 public awareness commercials a year for 3 years. The ads will be in English and Spanish and will identify appropriate behaviors the public can adapt to reduce trash in local creeks and rivers.	\$630,000	3 years		Coordinate with Environmental Services Department.
CIP No. 32-050.0 Rose & Tecolote Creeks Water Quality Improvements	Construct structural controls with the watershed and evaluate their effectiveness. Two hydrodynamic separators at the terminus of Mount Ashmun Drive and Mount Ariane Drive will be constructed. Both are near Tecolote Canyon Natural Park.	\$2,000,000	7 years	\$2 million received from FY00-01 State Budget appropriation	Planning study by Rick Engineering completed. Construction anticipated to begin 7/05.
San Diego Regional Watershed Analysis - Common Ground	The project proposes to develop and implement a comprehensive regional mapping, data collection and geographic information system (GIS) for all areas within the coastal watersheds of San Diego County.	\$6,000,000	4 years	Proposition 50	Partners: Copermittees
Land Use Professional's Manual	The City and the County of San Diego's Land Use Professional's Manual would assist in educating municipal land use planners and other professionals in making water quality-based land use decisions. The Manual would also serve as a warehouse for water quality assessment information available to land use planners	\$100,000	1.5 years	American Planning Association grant; Association of Environmental Professional's grant	30% draft completed

\*SOURCE: City of San Diego Storm Water Pollution Prevention Division Project Lists to Reduce Beach Postings and address water quality, prepared for the City of San Diego Clean Water Task Force, last updated: December 2004.

## APPENDICES (A-C)

- A. Responses to October 8, 2004 13267 letter to Mission Bay & La Jolla Watershed (WPS: 10-5000.02:hammp)
- B. Proposition 50 Preliminary Proposal (Common Ground)
- C. Coastal Low Flow Diversion Program brochure