



SECTION 5

WATERSHED MANAGEMENT MEASURES

5. WATERSHED MANAGEMENT MEASURES

INTRODUCTION

During FY 06-07, the Program conducted a variety of watershed-related management measures and activities. They included conducting watershed assessment activities and special studies, and participating in and coordinating with the Santa Clara Basin Watershed Management Initiative (SCBWMI) sub- and core groups. Activities described in this section are consistent with Provision C.10 (i.e., Watershed Management) of the Program's NPDES Permit.

The Program's watershed management strategy (pursuant to NPDES Permit Provision C.10) is to integrate its watershed management efforts with the SCBWMI. Activities that include implementing environmental monitoring and assessment measures are necessary components needed to fully integrate our efforts. Therefore, it is important to note that watershed management measures described in this section are not entirely independent from activities described in Section 4 – Monitoring Activities. Information gained from conducting studies and implementing activities/measures described in both sections have been used (and will continue to be used) in concert to meet objectives outlined in Permit Provisions C.7, C.9, and C.10. They include: (1) characterizing watersheds and stormwater discharges; (2) assessing existing or potential adverse impacts to beneficial uses; (3) identifying potential sources of pollutants of concern; (4) aiding in developing and implementing strategies for controlling adverse impacts on beneficial uses; and (5) assessing the effectiveness of pollutant prevention/control measures.

BACKGROUND

The Water Board encouraged starting the SCBWMI in 1996. The first meetings of the SCBWMI's Core Group and subgroups were held in 1997. During FY 98-99, SCBWMI stakeholders formally joined in a signatory document outlining the SCBWMI's mission, goals and objectives. The Santa Clara Valley Water District and the Cities of San Jose, Sunnyvale and Palo Alto committed additional funds and other resources to the SCBWMI. A Report Preparation Team (RPT) consisting of staff from these agencies developed a plan, schedule, and outline for a Watershed Assessment Report (WAR). The RPT and the SCBWMI subgroups began preparing sections of the WAR soon after.

In late 1999, the Program prepared *Watersheds 2000: A Vision of the Santa Clara Valley Urban Runoff Program's Role in Watershed Management and the Santa Clara Basin Watershed Management Initiative*. This document outlines the Program's long-term vision, roles and responsibilities with regard to the SCBWMI and provides a monitoring/continuous improvement and outreach strategy.

The Program's involvement in the SCBWMI is organized by the concept of continuous improvement, as described in the Program's Urban Runoff Management Plan (URMP). The SCBWMI identifies specific watershed issues and recommendations that are brought to the Program's Management Committee for consideration and action as appropriate. In addition, results from SCVURPPP studies related to watershed monitoring, assessment and management are frequently distributed, presented and discussed with SCBWMI subgroups. This approach creates an informed and coordinated partnership between the Program and SCBWMI.

FY 06-07 SCVURPPP ACCOMPLISHMENTS

1. Bay Area Macroinvertebrate Bioassessment Information Network (BAMBI)

The increased interest in bioassessment within the Bay Area spawned the formation of the Bay Area Macroinvertebrate Bioassessment Information Network (BAMBI) in February 2002. BAMBI is a network of scientists, watershed managers, regulators and community members interested in using biological communities as indicators (i.e., benthic macroinvertebrates) of stream health in the San Francisco Bay Area. The goal of BAMBI is to maximize the utility of aquatic bioassessment in the Bay Area by developing a programmatic and analytical framework for the collection, sharing, analysis and use of bioassessment data. Specific activities conducted by BAMBI in FY 05-06 are presented below. Additional information on BAMBI is provided at www.bayareabugs.org.

BAMBI 2007 Annual Meeting

Since 2002, Program staff has helped coordinate an Annual BAMBI meeting where bioassessment data and analyses can be presented from a local, regional or state perspective. On January 30, 2007, the fifth annual BAMBI meeting was held. Presentations included an update on the development of the Index of Biotic Integrity (IBI) for San Francisco Bay Area creeks, long-term variability of bioassessment data and the effects of urbanization on BMIs. Presenters included UC Berkeley PhD candidates and Program staff. The meeting agenda for the January 30 meeting and presentations by Program staff are included within Appendix D-1.

Index of Biotic Integrity (IBI) for San Francisco Bay Area Creeks

In collaboration with Alameda Countywide Clean Water Program and Water Board staff, Program staff developed a draft Work Plan to outline tasks that should be completed during the development of a Benthic Macroinvertebrate Index of Biotic Integrity (B-IBI) for creeks in the San Francisco Bay Area. An IBI serves as an easy-to-use scorecard for determining the condition of water quality and stream habitat (i.e., stream health) using biological communities. The IBI approach is designed to maximize detection of degradation by controlling for natural variation in biological communities. The San Francisco Bay Area IBI Work Plan was included in the Program's *FY 04-05 Annual Report*.

The Work Plan has six main tasks listed in sequential order:

1. Form Technical Advisory Group;
2. Compile Existing BMI Data from Participating Agencies/Organizations;
3. Standardize Datasets and Import into Database;
4. Develop Reference Conditions;
5. Select Metrics for the IBI; and
6. Develop, Validate and Refine IBI.

During FY 06-07, Program staff contributed substantial in-kind services towards the completion of tasks 1 through 4. The following are status summaries for these tasks:

Task 1: Technical Advisory Group (TAG) - A Technical Advisory Group (TAG) was formed in 2006. The TAG consists of Program, California Department of Fish and Game (CDFG) and USGS staff, UC Berkeley graduate students and other Bay Area municipal stormwater program staff. On June 21, 2006, the TAG met to discuss the initial steps in developing reference conditions for Bay Area creeks. A meeting agenda was included within Appendix D-1 of the

Program's *FY 05-06 Annual Report*. The TAG discussed the B-IBI at the January 30, 2007 BAMBI meeting and provided additional input.

Task 2 – Compile Existing Data – In FY 06-07, Program staff spent a substantial amount of time collecting and compiling existing benthic macroinvertebrate data from eight Bay Area counties. Data sources included the Water Board, municipal stormwater programs and volunteer monitoring programs. Data from approximately 400 sites have been compiled.

Task 3: Standardize Datasets and Import into Database – Datasets compiled in Task 2 were standardized into a format that could be imported to the California Ecological Data Application System (Cal EDAS), which is currently housed at SCVURPPP. All bioassessment data collected through Spring 2005 has been placed in Cal EDAS. In FY 06-07, Program staff began generating data outputs needed to complete Tasks 4-6.

Task 4: Develop Reference Conditions – The development of biological reference conditions for Bay Area creeks is an integral step in completing the B-IBI. Reference conditions provide a way for comparing biological data from a potentially impacted site to a “least disturbed” site. They are also used to determine the degree of impact of a site. On June 21, 2006, the TAG met to begin discussing reference conditions development. As a next step, supplemental physical habitat data is being compiled by Bay Area stormwater programs to objectively define reference condition attributes used to test and select appropriate biological metrics used to develop the B-IBI.

In FY 07-08, Program staff plans to continue supporting and actively participating in BAMBI activities, with specific objectives to complete a Draft Provisional B-IBI for San Francisco Bay Area creeks.

2. Stream Studies Inventory

The Watershed Assessment and Monitoring Subgroup (WAMS), an entity within the SCBWMI, has a mission to provide the SCBWMI with a solid scientific foundation for watershed planning. One of WAMS's tasks is to coordinate the SCBWMI's data collection and data management efforts with stream monitoring studies within the Basin. The *Inventory of Santa Clara Basin Stream Studies* (SSI) is a result of this task and was initially prepared by the Program in November 1998. The purpose of the SSI is to promote inter-agency awareness of environmental investigations within riparian corridors and to facilitate coordination of related data collection and management. It also describes stream-related multi-stakeholder studies and projects that were in-progress in the Santa Clara Basin. The SSI was updated, revised and reissued in February 2000 (Version 2.0), July 2001 (Version 3.0), August 2002 (Version 4.0), November 2003 (Version 5.0) and June 2005 (Version 6.0).

On September 15, 2006, the Program finalized the *Inventory of Santa Clara Basin Stream Studies (Updated Version 7.0)*. This version describes twenty-nine related multi-stakeholder studies and projects that recently started or are in-progress within the Santa Clara Basin. Information for seven new studies was added to the updated version and twenty-two ongoing projects were updated with current information. Eight projects listed in the SSI Version 6.0 Report were determined to be complete or discontinued. As a result, they are not included within the updated SSI Version 7.0. Information describing the completed studies was archived into the Program's metadata database.

In FY 07-08, the Program will develop a needs assessment and scope related to the SSI. The

intent is to assess the utility of the SSI in its current form and the cost and feasibility of making the SSI web-based.

3. Watershed Data Management

To comply with its NPDES permit, the Program compiles, develops and analyzes a variety of data sets and reports. Most of this data is collected and generated as part of the Program's environmental monitoring and assessment activities. A majority of the information collected and used by the Program originates from different municipalities and agencies that conduct studies within Program jurisdictional boundaries.

The Program developed a relational database as an initial task to systematically describe and document data used for its activities. The intent of the database is to demonstrate its usefulness of how to systematically and efficiently collect and document all of the relevant data used in the Program's activities. In addition, the database was designed to explore the feasibility of eventually expanding and coordinating its maintenance and use with other agencies and organizations in the Program.

The SCVURPPP metadata database currently stores information on watershed studies described in the updated SSI Version 7.0 as well as archived information from previous versions of the SSI. The database was also developed to produce a report listing current project information in a format similar to previous SSI Reports. The project summaries of the 2003 SSI report were produced from the database. In addition, the Program database provides querying capabilities for watershed information listed in both the SSI and SCBWMI's Metadata Database.

The SCVURPPP Metadata Database guidance manual entitled *SCVURPPP Metadata Database Program User Documentation* is also available. The manual describes software and hardware requirements, installation procedures, data entry procedures and querying techniques for watershed information listed in both the SSI and SCBWMI's Metadata Database. The *SCVURPPP Metadata Database Program User Documentation* can be found on the Program's website (www.scvurppp.org).

4. Develop Strategies for Controlling Impacts of Land Use on Beneficial Uses

During FY 06-07, the Program collaborated with the SCBWMI Land Use Subgroup on the following activities:

- On December 6, 2006, the Program, in collaboration with the Land Use Subgroup (LUS), planned and held the workshop entitled "Where San Jose Meets the Bay: Don Edwards National Refuge Walking Tour". Information provided during the tour included: the interactions between urban/suburban activities and natural habitats; how salt marshes help restore water quality; effects of freshwater discharges on the Bay; and how to landscape with native plants. The workshop attracted 33 participants. Evaluation forms showed that the vast majority of participants gave the workshop high remarks (see evaluation summary within Appendix A-5).
- Prepared and submitted two proposals for sessions at the 2007 California Chapter of the American Planning Association (CCAPA) Conference scheduled for 9/30/07- 10/03/07 in San Jose. Both proposals were accepted. One session will focus on how "smart growth" development can help improve water quality, including promoting alternate modes of transportation. The other session will be a mobile workshop in which attendees will visit

three sites to view existing post-construction stormwater controls, including pervious paving and vegetated swales used in parking lots.

- In Fall 2006, Program staff requested that Santa Clara Valley Water District staff attend a future LUS meeting to present recommendations from the Water District's Stewardship Plans that address the connections between land use, transportation, and water quality. District staff attended the March 2007 LUS meeting and made this presentation. The LUS is will continue to coordinate with District staff regarding stewardship plan implementation.
- At the July 11, 2007 LUS meeting, Program staff provided an update of San Mateo County's Sustainable, Green Streets and Parking Lots Program. This program, initiated to directly address the connection between motor vehicle transportation and water quality, is funded by motor vehicle registration fees. It is designed to generate support for the widespread use of stormwater pollution prevention; and treatment and flow control BMPs that are well suited for use within streets and parking lots.

**Table 5-1
Status of FY 2006-2007 Watershed Management Measures Projects¹**

Title	Category/ Monitoring Priority (MP) ² / Permit Provision	Capsule Scope	Product(s) ³	Status Schedule
FY 06-07 Rapid Bioassessments	Permit Provision C.7 and C.10	Evaluate water and physical habitat quality in Santa Clara Basin Watersheds.	<i>Watershed Monitoring and Assessment Summary Report: 2002-2007^{4a, b}</i>	Complete- 9/15/07
Bay Area Macroinvertebrate Bioassessment Information Network (BAMBI)	MP #4	Collaborate with other BASMAA member agencies to develop regional bioassessment tools necessary to provide context to bioassessment data collected in Santa Clara Basin creeks.	BAMBI – annual meeting agenda and three PowerPoint presentations ^{4a}	Completed- 1/30/07

¹ Projects reviewed and approved for inclusion in Work Plan by Budget Ad Hoc Table Group.

² Monitoring Priorities (updated at Monitoring AHTG meeting November 8, 1999):

- 1) New projects needed to implement the results, and achieve the goals, of current projects.
- 2) New projects that implement continuous improvement items identified through the annual review process.
- 3) Projects that support the Santa Clara Basin Watershed Management Initiative in one of the following ways:
 - a) Investigate Beneficial Uses and Causes of Impairment (including field work)
 - b) Review and Compile Environmental Data and Make it Accessible
 - c) Develop Strategies for Controlling Impacts of Land Use on Beneficial Uses
 - d) Facilitate and Support WMI Subgroups (including coordination with other agencies)
- 4) Projects identified through participation in regional monitoring collaborative efforts, including the Regional Monitoring Program and BASMAA.

³ Refer to Appendix C-1 for additional details.

⁴ a) Provided within *FY 06-07 Annual Report*

b) Provided on Program's website (www.scvurppp.org)

**Table 5-1
Status of FY 2006-2007 Watershed Management Measures Projects¹**

Title	Category/ Monitoring Priority (MP) ² / Permit Provision	Capsule Scope	Product(s) ³	Status Schedule
Stream Studies Inventory	MP#3b	Promote inter-agency awareness of environmental investigations within riparian corridors and facilitate coordination of related data collection and management.	<i>Inventory of Santa Clara Basin Stream Studies (Version 7.0) Report^{4a,b}</i>	Complete- 9/15/06
Watershed Data Management	MP#3b	Develop a metadata database that is focused on description, documentation, and indexing of the data sets, sources, and reports	Updated Metadata Database	Ongoing
WMI Watershed Assessment and Monitoring Subgroup (WAMS)	MP#3d	Provide administrative support to WAMS.	Meeting summaries	Completed as needed
WMI Environmental Indicators Work Group (Work Group "I")	MP #3d	Provide comments on prototype environmental "score card" assessing the health of the Coyote Creek mainstem.	Comments on draft environmental "scorecard"	Completed 8/06
Support for Land Use Subgroup	WMI Subgroups MP# 1, 3c, 3d	Provide administrative support and leadership for the Land Use Subgroup. Maintain the subgroup mailing list; prepare and distribute agendas; chair meetings; edit and distribute meeting summaries; liaison to, and correspond with, the SCBWMI Core Group other subgroups as needed; update workplans; facilitate interaction between consultants and the subgroup; summarize, compile, and convey subgroup products.	Workshop agenda and evaluation summary – <i>"Where San Jose Meets the Bay: Don Edwards National Refuge Walking Tour"</i>	Completed 12/6/06