

**Santa Clara Valley**  
***Urban Runoff***  
**Pollution Prevention Program**

# **MULTI-YEAR RECEIVING WATERS MONITORING PLAN**

Prepared in Compliance with Permit Provisions  
C.7.a and b

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(Appendix B contains detailed information on the  
environmental monitoring plan)

March 1, 2002

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## MULTI-YEAR RECEIVING WATERS MONITORING PLAN

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### PURPOSE

The Multi-Year Receiving Waters Monitoring Plan (MY-RWMP) was prepared to fulfill the monitoring requirements of the NPDES permit contained in Provision C.7 and specifically Provision 7b of the SCVURPPP's Order adopted February 21, 2001 by the Regional Board. That provision reads:

**Multi-Year Receiving Waters Monitoring Plan.** In conjunction with the submissions required by Provision 9 the Dischargers shall submit by July 1, 2001, an interim draft of a Five-Year Receiving Waters Monitoring Plan, and, by March 1, 2002, a final Five-Year Receiving Waters Monitoring Plan acceptable to the Executive Officer, designed to comply with these Monitoring Program requirements. The Receiving Waters Monitoring Plan shall include provisions for monitoring South San Francisco Bay by participating in the San Francisco Estuary Regional Monitoring Program for Trace Substances or an acceptable alternative monitoring program. The Receiving Waters Monitoring Plan activities shall be coordinated with SCBWMI assessment activities.

MY-RWMP covers the entire spectrum of SCVURPPP monitoring activities, both programmatic and environmental. Readers specifically interested in the environmental monitoring activities (i.e., surface water monitoring activities) are referred to Appendix B. While MY-RWMP has been developed to meet the objectives of the NPDES permit, it also addresses the guidance contained in several RWQCB letters written to both the Program and members of the BASMAA monitoring committee.<sup>1</sup>

### Road Map

The Multi-Year Receiving Waters Monitoring Plan (MY-RWMP)<sup>2</sup> contains four main elements:

1. Comprehensive Timeline: The timeline illustrates all existing commitments and priorities established by the Program, including ongoing activities meant to fulfill Regional Board Order Provisions related to C9 "Water Quality-Based

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<sup>1</sup> RWQCB letter from Tom Mumley to BASMAA monitoring committee entitled "Urban Runoff Monitoring Needs/Recommendations" dated February 2, 2001.

RWQCB letter from Loretta Barsamian to Adam Oliveiri entitled "FY2002-2003 Syromwater Municipal NPDES Program Priorities" dated December 7, 2001.

The water quality monitoring comments in the RWQCB from Bruce Wolfe to Beau Goldie entitled "Pesticide-Related Components of 2000/01 Annual Report" postmarked December 28, 2001.

<sup>2</sup> The Program, consistent with the NPDES permit, initiated work on the Multi-Year Receiving Waters Monitoring Plan (MY-RWMP) in January 2001. The first draft was released for review by the Monitoring Adhoc Group on January 15, 2001. Based on the review and response to comments a draft was formally submitted to the RWQCB on March 1, 2001 as part of the Program's FY01-02 Work plan. Comments were solicited from the WAS during April and May of 2001 and two additional Adhoc meetings were held on March 6 and April 19. A "Interim Draft" (fourth draft) was produced and submitted to the RWQCB on July 1, 2001, consistent with the NPDES permit. Minor revisions were made to the March draft and a final draft was submitted to the RWQCB on September 15, 2001 with the Program's FY00-01 Annual Report. Since the September submittal, three joint WAS and Monitoring Adhoc meetings were held on November 19, December 18 and January 24 (the last two included an EPA moderator/facilitator) to seek input from various stakeholders. In addition, a separate Co-permittee Adhoc meeting was held on December 16, 2001.

Requirements for Specific Pollutants of Concern” and C10 “Watershed Management” of the NPDES permit.

2. Summary matrix of Programmatic Monitoring Indicators (PMIs): The PMIs are used to gauge how well Performance Standards are being met and control measures are being implemented.
3. Summary matrix of Environmental Monitoring Measures (EMMs): The EMMs 1) assist the RWQCB characterize receiving water quality in urban watersheds consistent with the priorities of the Watershed Management Initiative and the Program<sup>3</sup>, 2) identifies where and what type of status and trend type monitoring is appropriate, 3) recognizes the need for site-specific water quality investigations to address questions that might arise during the conduct of the routine monitoring efforts, and 4) allows for determining if control measures are having the intended effect.
4. Continuous Improvement: The continuous improvement element helps the SCVURPPP integrate urban runoff management and watershed management. It is based on the principles of adaptive management, thereby incorporating a systematic review of the monitoring results to improve future efforts and provides opportunities for stakeholder input into the continuous improvement process.

## BACKGROUND

The word monitoring is applied to a wide range of activities; therefore, it is important that a monitoring program begins by defining the types of monitoring that will be employed to achieve its objectives. Nonpoint source programs, including urban runoff management programs, generally employ several types of monitoring depending on the type of observation that is desired. The types of monitoring employed by the SCVURPPP fall into five categories:<sup>4</sup>

1. Baseline monitoring: monitoring used to characterize existing water quality conditions, and to establish a database for planning or future comparisons. Where baseline monitoring is repeated at well-spaced time intervals, it can be used to indicate long term trends.
2. Assessment monitoring: observations made to estimate a particular parameter.
3. Implementation monitoring: monitoring used to assess whether an activity or activities were carried out as planned.

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<sup>3</sup> The SCVURPPP's watershed assessment priorities are described in the Program's report entitled “Watershed Management and Urban Runoff Management Integration Report – Permit Provision C.10, June 29, 2001.”

<sup>4</sup> These definitions were largely paraphrased from “*Monitoring Guidelines to Evaluate Effects of Forestry Activities on Streams in the Pacific Northwest*” USEPA Region 10 1991 and EPA's *Monitoring Guidelines, 1994, EPA National Guidance*.

4. Effectiveness monitoring: monitoring used to evaluate whether the specific activities accomplished the desired objective, such as the usefulness of a particular BMP or set of BMPs.
5. Project monitoring: monitoring used to assess the impact of a particular activity or project. This approach most often uses a combination of implementation and effectiveness monitoring to indicate the overall outcome of the project.

Of these five types of monitoring, typically only the first two are directly linked to water quality. However, many studies have shown that implementation and effectiveness monitoring are the most cost-effective approaches to reduce nonpoint source pollution because these types of monitoring provide immediate feedback on whether the activity or program is achieving the intended results. Monitoring types 3-5 form the basis for a 'continuous improvement process' that is central to the implementation principles of the Urban Runoff Program.

### **Development of the SCVURPPP's Approach to Monitoring**

From its inception in 1990 through 1995, the Program's monitoring activities focused on establishing baseline information through sampling and analysis of runoff from various land uses and ambient waters. A summary of the products produced as part of the SCVURPPP's previous monitoring efforts is contained in the 1997 URMP. In addition to gathering baseline information, the Program's annual monitoring plans have also included assessments intended to enhance understanding of the sources and extent of urban runoff pollution, its effects, and methods for its control.

In August 1996<sup>5</sup> the Regional Water Quality Control Board (RWQCB) requested that the SCVURPPP redirect its monitoring resources and develop a new approach:

Specific monitoring activities that should be considered within the strategy include characterization of drainage areas (watershed monitoring) including land use characteristics (general, such as open, residential, commercial, or industrial areas, or specific sources) and consideration of physical and biological, as well as chemical indicators to assess the drainage areas. We strongly encourage you to use community-based (volunteer) monitoring as an inexpensive and effective means to conduct this type of monitoring. The strategy should also establish a mechanism or process for effective use of special or pilot studies by your program or those conducted by other programs.

The SCVURPPP's Monitoring Plan implements the goals and objectives that were set by the Program's Management Committee in 1996. These goals and objectives were incorporated into the SCVURPPP's 1997 Urban Runoff Management Plan (URMP). In particular, the monitoring program implements Goals 2 and 3 (see highlighted text in box).

Since 1997 the Program's emphasis has been on integrating urban runoff and watershed management. This emphasis continues to be a major condition of the urban runoff permit. The results of this integration effort include the Program's and individual

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<sup>5</sup> Loretta K. Barsamian, Executive Officer. August 30, 1996 letter to Frank Maitzki.

Co-permittee assistance on managing various subgroups of the WMI, preparing the abridged and unabridged Watershed Characteristics Report, the conduct of various projects related at review of development policies and the completion of the national Stormwater Environmental Indicators Demonstration Project. A more detailed discussion of these efforts is contained the Program's Annual Reports (i.e., see FY 97-98, 98-99, 99-00, and 00-01).

### **Annual Project Funding Process**

To achieve these goals, during its annual budgeting cycle, the Program identifies specific monitoring projects through the Program's continuous improvement process described in the 1997 Program URMP (Figure 1). As shown in the figure, projects are developed through:

- Evaluation of opportunities for improvement in Program (joint) activities. This evaluation is documented in the Program's annual performance review meeting and in the Program portion of the annual report.
- Co-permittee performance reviews. Specific items for improvement (by the Program or the Co-permittee) are identified during the annual review meetings and are documented in the summaries of these meetings.
- Participation in regional efforts (e.g. the BASMAA Regional Monitoring Strategy and the Regional Monitoring Program).
- Participation in the Santa Clara Basin Watershed Management Initiative (SCBWMI). As SCBWMI subgroups identify specific tasks related to creating the Watershed Management Plan, participating Program and Co-permittee staff consider whether the Program is the stakeholder that can most effectively implement these tasks. To determine which of these projects submitted by stakeholders from the SCBWMI receive funding, the Program uses a process described below under *Priorities for Assisting the Watershed Management Initiative*.

Regional Board staff and interested parties participate in the Program and Co-permittee performance review meetings and in the SCBWMI subgroups to provide input into the process for prioritizing and selecting projects.

**1997 Urban Runoff Management Plan  
Goals and Objectives**

**GOAL 1: Comply with Permit**

- Effectively prohibit non-stormwater discharges (unless exempt or managed according to approved conditions)
- Reduce, to the maximum extent practicable, pollutants in stormwater runoff
- Comply with permit submittal requirements

**GOAL 2: Determine Success**

- Periodically evaluate the attainment of beneficial uses in selected waterways
- Evaluate changes in public awareness and behavior
- Evaluate effectiveness of specific control measures at pollution reduction.

**GOAL 3: Adjust Activities to Meet Changes**

- Define what constitutes success (how much is enough?) as it relates to programmatic and technical MEP
- Utilize what we learn to plan the next steps

**GOAL 4: Achieve Acceptance of Urban Runoff Management Activities**

- Effectively facilitate public input into Program planning process
- Integrate urban runoff goals at various intra-agency levels
- Develop and maintain a proactive relationship with regulatory authorities
- Publicize the efforts of the Co-permittees (Program)

**GOAL 5: Integrate Urban Runoff Program Elements into other Programs**

- Promulgate an understanding of the role of the urban runoff program
- Encourage other agencies to become involved in urban runoff issues
- Encourage action by the appropriate agencies

**Priorities for Assisting the Watershed Management Initiative**

The Program's Monitoring Ad-hoc Task Group (AHTG), composed of Co-permittee representatives, works with Program staff to review proposed projects and allocate available funds. Regional Board staff and interested parties attend the AHTG meetings. Figure 2, "Linking SCVURPPP and SCBWMI Goals," shows the four general areas of SCVURPPP support for the SCBWMI.

**Summary of Program Monitoring Priorities**

The Program's Monitoring AHTG uses the following monitoring priorities to determine which projects are funded for a given year:

- 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.

Each of these priorities is intended to fulfill specific provisions of the Program's 2001 NPDES permit and the 1997 URMP and to provide a strong basis for both program improvement and the next round of permit requirements. A more detailed summary, generally covering FYs 00-01 through 02-03, of how the SCVURPPP has addressed priority number 3 is contained in Appendix A. For additional information on this particular item, please see the Program's monitoring element contained the annual Work Plans.

### **Accomplishments**

Complying with the Regional Board directive to redirect monitoring resources from a baseline monitoring approach, the Program has, since 1997, moved toward assessment of specific pollutants and conditions of designated beneficial uses. To improve the effectiveness of our special studies and those conducted by other programs, in 1996 and 1997, the SCVURPPP co-sponsored, and participated in, the Bay Area Stormwater Management Agencies Association's (BASMAA's) development of a BASMAA Regional Monitoring Strategy (BRMS). The SCVURPPP continues to coordinate its monitoring activities with other BASMAA member agencies.

In recent years, the Program has conducted substantial original research and investigations into the sources, fate, transport, and effects of urban runoff pollutants, the characteristics of Santa Clara Basin watersheds, the effects of urbanization on watersheds, and the effectiveness of various control measures. Beginning in 1993-1994, the SCVURPPP has funded efforts to assess the condition of beneficial uses of creeks within the Santa Clara Basin, including a pilot volunteer monitoring program for local creeks (Streamkeepers) and through the SCBWMI.

The SCVURPPP recently completed a two year research project entitled "The Stormwater Environmental Indicators Demonstration Project (SEIDP). The SEIDP is part of USEPA's Environmental Indicators/Measures of Success Project and is part of the third phase of EPA's project, which focuses on local demonstration projects and testing of the indicators. The Water Environment Research Foundation sponsored the SEIDP jointly with the Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP).

The project objectives were to:

- Evaluate the usefulness of the Center for Watershed Protection's (CWP) Stormwater Indicator Methodology under semi-arid conditions.
- Evaluate the applicability of environmental indicators under semi-arid conditions in two different situations: at a watershed level that includes a variety of chemical, physical and biological indicators and in an industrial watershed that emphasizes programmatic indicators.
- Select, test, and refine protocols for monitoring environmental indicators in semi-arid conditions.

- Develop guidance on selection and use of environmental indicators, and disseminate guidance to other stormwater programs in California, Oregon and the west to assist in validation of environmental indicators throughout the west.

Consistent with these objectives, the CWP's stormwater indicator methodology was applied at two distinct geographic scales: the 310-square-mile watershed of Coyote Creek (which includes the eastern portion of the City of San Jose) and a 28-acre industrial catchment along Walsh Avenue in the City of Santa Clara. The semi-arid climate is typical of California's coast from the San Francisco Bay area southward.

In Coyote Creek, the baseline was a 1979-1981 EPA-sponsored study that sought to identify the effects of urban runoff on water quality, sediment, fish, macroinvertebrates, attached algae, and rooted aquatic vegetation. In addition, the SCVURPPP monitored stormwater constituents and toxicity in the creek 1987-1996. In 1999, the SEIDP sampled fish and the physical habitat at 18 locations in Coyote Creek, sampled surficial sediment at six locations, and sampled benthic macroinvertebrates at nine locations. The SEIDP analyzed flooding, changes to stream morphology, and sources of imperviousness in the surrounding watershed. Georeferenced reports of illegal dumping and known industrial and construction sites were also generated.

The Program, as part of the Annual Reports, updates a summary of memoranda and reports published as a result of their research and investigative efforts. The most recent update is contained in Table 4-2 of the 1999-2000 Program Annual Report.

Regional Board staff has been thoroughly involved in these projects through participation in the Program's Monitoring Ad-hoc Task Group, through SCBWMI subgroups, and through special review groups such as the Stormwater Environmental Indicators Demonstration Project Review Committee and other technical advisory groups facilitated by Program staff.

The Program has contributed to the Regional Monitoring Program for Trace Substances (RMP) since 1993 and has contributed approximately \$140,000 a year to the RMP over the past four years. In addition, the three South Bay municipal wastewater treatment plants (i.e., City of Palo Alto, City of Sunnyvale, and the San Jose-Santa Clara facility) annually contribute between \$200,000 and \$250,000 a year to the RMP. Thus, local communities (which are urban runoff Co-permittees) contribute approximately \$340,000 to \$390,000 a year to a regional monitoring program (consistent with Permit Provision C.7b). The results of the RMP's research and investigations have been published by the San Francisco Estuary Institute.

## **MULTI-YEAR RECEIVING WATERS MONITORING PLAN**

As described previously, there are four key components to the Multi-Year Receiving Waters Monitoring Plan (MY-RWMP). Each of these components are discussed in the following sections. The MY-RWMP seeks to extend and continue implementation of the Program's monitoring priorities. The MY-RWMP also details how projects previously planned within these priorities, plus some new projects, will seek to fulfill the provisions of the reissued NPDES permit.

### **Comprehensive Monitoring Plan Timeline**

A comprehensive monitoring timeline is shown in the Table 1 and is organized by the Program's monitoring priorities (Column A). Table 1 includes all projects (i.e., programmatic and environmental monitoring) funded through the Program's monitoring budget. Column B shows references to specific provisions in either Order No. 95-180 and/or the new Order No. 01.024 (where applicable). Column C lists descriptive titles for each task; Column D references current projects (also listed in the FY99-00 & FY00-01 Program Annual Reports) that are implementing the tasks.

The preliminary summary has been grouped according to the Program's monitoring priorities that were previously discussed. These include the following categories:

- 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.

### **Programmatic Monitoring Indicators - Summary Matrix**

Based on the Program's experience in implementing the Performance Standards, monitoring projects and continuous improvement process, the Program believes that a key element of its strategy should focus on developing better programmatic indicators and on collecting and analyzing programmatic data. A summary matrix of the various ongoing and planned projects relative to how they address the four major components of the RWQCB's long-term monitoring goals is shown in Table 2. The purpose of this table is to give the reader a perspective on the various projects that the SCVURPPP has underway or planned. Additional detail on the expected schedule for conducting a particular project is contained in the comprehensive monitoring plan timeline, Table 1, previously discussed. Appendix A contains a brief summary and discussion of the projects underway to develop strategies for controlling impact of land use on beneficial uses (Program Monitoring Goal 3c).

In general, specific details on the project scope, expected or completed products and overall due dates can be found in several other reports produced by the Program and are not reproduced in this report. Please see the following areas noted below for additional information:

- Project Scopes & Schedules: see the annual monitoring plan contained in the Annual Program Workplan<sup>6</sup>
- Completed Products: see Table 4-2 contained in the monitoring section of the Program's Annual Report
- Status Reports: distributed to Adhoc Monitoring Group and Management Committee at least on a quarterly basis. In addition, the Program discusses the status of various projects on an as needed basis at the BASMAA monitoring subcommittee meetings, special workshops, and various WMI subgroup meetings, in particular the Land Use Subgroup. The results of those presentations and discussions are contained in meeting notes that are distributed to the Management Committee and members of the specific workgroup.

### **Environmental Monitoring Measures – Summary Matrix**

While continuing the programmatic approach to measuring compliance, the Program and Co-permittees are committed to monitoring and assessing their creeks and wetlands, and San Francisco Bay. A summary matrix of the various ongoing and planned projects relative to how they address the four major components of the RWQCB's long-term monitoring goals (i.e., status and trends monitoring, surveillance monitoring, management effectiveness monitoring, and monitoring to help set realistic standards) is shown in Table 3. The purpose of this table is to give the reader a perspective on the various projects that the SCVURPPP has underway or planned. Additional detail on the expected schedule for conducting a particular project is contained in the comprehensive monitoring plan timeline, Table 1, previously discussed.

In addition to the summary matrix shown in Table 3, a detailed set of tables and figures that identifies the SCVURPPP's proposed surface water monitoring program for the next eight years is contained in Appendix B. Appendix B is a standalone section that: 1) assists the RWQCB characterize receiving water quality in urban watersheds consistent with the priorities of the Watershed Management Initiative and the Program, 2) identifies where and what type of status and trend type monitoring is appropriate, 3) recognize the need for site-specific water quality investigations to address questions that might arise during the conduct of the routine monitoring efforts, and 4) allows for determining if control measures are having the intended effect.

Appendix B contains the following tables and figures:

- Table B-1 Existing Monitoring Data for Coyote Creek Watershed: Table B-1 contains a description of parameters, sampling locations and number of sites, along with the agency and specific project where the data have been collected within the Coyote Watershed. The information is based on a summary of the information contained in the "*Santa Clara Basin Stream Studies Inventory, July 24, 2001*" prepared by the Program to assist the WMI, as well as more recent data from ongoing Program efforts (The Program will be producing a quick update of the SSI during the fall of

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<sup>6</sup> Please note that for some projects a very detailed workplan is developed and reviewed and approved by the Adhoc Monitoring Work Group. For example, the SEIDP, Coyote Pilot Assessment, Policy project on tax incentives and compare and contrast all have detailed project scopes. These have been and will continue to be incorporated to the appropriate submittals to the RWQCB staff.

2002. That project is part of the WAS workplan and the Program's FY02-03 Annual Monitoring Plan).

- Figure B-1 Pilot Assessment and Monitoring Efforts (1997 to Present) Occurring in Watersheds of the Santa Clara Basin: Figure B-1 illustrates the spatial coverage of investigations as well as the type (i.e, benthic , macroinvertebrate, salmonid habitat, biological, sediment, and water quality) of investigations conducted over the past four years throughout the Santa Clara Basin.
- Figure B-2 Existing Chemical, Biological and Physical Data Collection Efforts in Coyote Creek Watershed: Figure B-2 illustrates, in greater detail the spatial coverage of data and type of data available specifically in the Coyote Watershed<sup>7</sup>.
- Table B-2 Preliminary SCVURPPP 8-Year Monitoring Plan for the Santa Clara Basin (excluding the Coyote Watershed): Table B-2 contains the following information: watershed location (prioritized based on WMI and SCVURPPP assessment priorities), data type (chemical, biological, physical, and trash), FYs (8 years starting with FY02-03 through FY09-10), rationale, and lead agency. The information on data type utilizes a tiered monitoring approach discussed by the RWQCB staff in its RMAS memo (February 8, 2001 Draft Monitoring Design in Regional Board-lead Pilot Watersheds, Spring 2001) that includes the following monitoring categories: screening level, detailed investigation, and status and trends.
- Table B-3 provides a description of data parameters and analytical methods used in the SCVURPPP FY 02-03 and Multi-Year Waters Monitoring Plan.

The investigation of beneficial uses and causes of impairment will be greatly facilitated by implementation of the Regional Board's Regional Monitoring and Assessment Strategy (RMAS). The Program is committed to continuing its efforts to facilitate technical and stakeholder workgroups that will assist Regional Board staff to implement the RMAS.

With appropriate policy and guidance from the Regional Board, it should be possible to develop practical, implementable indicators (including physical and biological indicators) and protocols to assess beneficial uses in creeks, wetlands, and the Bay. These indicators and protocols are a necessary step toward establishing a sound regulatory basis for locally based watershed management.

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<sup>7</sup> The high priority assigned to the Coyote watershed is based on the fact that, relative other watersheds in the Santa Clara Basin (as well as others), the watershed has the least amount of developed land (and thus the least amount of imperviousness), has the least amount of development within riparian corridors, and has one of the highest areas for projected future development. In addition, a significant amount of available work is ongoing or recently completed which allows the Program to build upon. The high priority given to the Coyote Watershed is consistent with the WMI's assessment priorities described in Work Group D products entitled "*Combined Technical Memoranda #29, #30, #13 – Management Issues to be Considered in Watershed Selection; Process and Objective Criteria for Incorporating Management Issues into the Selection of Watersheds, and Watershed Suite Selection and Reevaluation* , dated April 18, 2000." In addition, the high priority assigned to the Coyote Watershed is further described in the SCVURPPP report entitled "*Watershed Management and Urban Runoff Management Integration Report, C.10, June 29, 2001.*"

## **Continuous Improvement – Effectively Integrating Urban Runoff and Watershed Management**

The requirement to investigate, consider, and implement watershed management measures first appeared in the Program's 1995 NPDES permit and is also a requirement of the Program's current NPDES permit. As part of its application for the current permit, the Program developed a "Watersheds 2000 Vision" (December 1999) that outlines the principles and approaches that the Program and its Co-permittees will use to support better management of the Santa Clara Basin through the implementation of urban runoff control measures. The vision statement also defines the relationship between and the roles of the Program and the SCBWMI in this context.

The Program's approach for supporting watershed management and the SCBWMI is based on the following principles:

- The goal of the Program and its Co-permittees is to maintain water quality and protect the beneficial uses of the waterbodies in the Santa Clara Basin through the implementation of control measures to the maximum extent practicable.
- Successful watershed management must be a community-wide, stakeholder-driven effort that includes regulatory agencies, the business community, environmental advocates, and local government.
- The Co-permittees recognize it can be difficult to separate many urban runoff "issues" from the general impacts of urbanization resulting from the cumulative effects of land development.
- The Co-permittees understand that municipal agency activities have the potential to impact water quality and beneficial uses; conversely such activities can create opportunities to improve water quality and enhance aquatic resources.

Given those principles, the Co-permittees envision the roles of the Program and that of the SCBWMI as follows:

- The Program's activities pursuant to the NPDES permit assist Co-permittees and other local agencies to incorporate appropriate watershed management recommendations into their decision-making and specific watershed protection approaches into their day-to-day operations.
- The SCBWMI, as a stakeholder process, provides the tools to identify community goals and issues, and facilitates the development of common ground between stakeholders to recommend to policy-makers the actions needed to better manage watershed resources.

The Program seeks to create an avenue by which the SCBWMI's broad stakeholder goals and objectives can be incorporated into the daily operations of the Co-permittees. The Co-permittees will strive to apply their resources and powers to preserve and enhance the watershed. To do this most effectively, the Program and Co-permittees

need to translate SCBWMI stakeholder recommendations into specific actions that are reasonable, practical, and that can be incorporated into their missions and services. In addition, the Program will work with Regional Board staff to apply a regulatory strategy that allows Co-permittees to find ways to coordinate with other agencies within a specific watershed — to protect and enhance beneficial uses.

**Continuous Improvement Process:** An important feature of a mature Phase I municipal stormwater management program like the Santa Clara Valley Program is a process for continuous improvement. As shown in Figure 1 from the Program's 1997 URMP, continuous improvement is implemented through two feedback "loops." The loop on the left emphasizes programmatic measures to gage the performance of the Co-permittees and the overall Program (and includes participation in regional efforts such as the San Francisco Bay Regional Monitoring Program for Trace Substances). The loop on the right emphasizes watershed assessment and management conducted jointly with other stakeholders in the SCBWMI<sup>8</sup>.

This two-pronged approach facilitates the Regional Board's responsibility for fairly measuring regulatory compliance while encouraging a watershed management approach. The continuous improvement process has been utilized by the Program over the past five years to successfully integrate programmatic monitoring indicators, which provide the best basis for measuring permit compliance, with watershed management measures (including environmental monitoring), which provides the best context for considering the effects of stormwater runoff on the environment and measures to improve the health of the watershed.

**Stakeholder Involvement & Input:** A significant factor in the success of the continuous improvement program is the active involvement and input from the various watershed stakeholders. Over the past 5 years, this involvement and input has principally come through the Program's and Co-permittees significant involvement in the Santa Clara Basin Watershed Management Initiative. For example, the Program's involvement involved a major role preparing both the abridged and unabridged versions of the Watershed Characteristics Report, the lead role in conducting the assessment of Coyote Watershed, a continuing leadership role in the Landuse Subgroup as well as the Bay Monitoring and Modeling and Regulatory Subgroups, and it's continued support of the Core Group efforts. As described below, a number of the Co-permittees have and continue to provide leadership and resources to the success of the WMI.

- The SCVWD's role managing the report preparation team, acting as co-chair of the watershed subgroup and providing significant staff leadership and resources to conduct the assessments in the Upper Penitencia, Guadalupe and San Francisquito watersheds.
- The City of San Jose staff chairing the Core Group, providing significant staff and technical resources to assist all subgroups including Co-chairing the BMM and WAS, and providing significant resources to conduct the assessments in the Upper Penitencia, Guadalupe and San Francisquito watersheds.

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<sup>8</sup> The continuous improvement process concept was developed as part of the Program's 1997 Urban Runoff Management Plan to more effectively integrate urban runoff and watershed management.

- The City of Sunnyvale staff acting as the administrative chair of the Core Group, the Co-chair of the WAS, and providing significant technical resources in support of the BMM and WAS workplans.
- The City of Palo Alto staff acting as the finance chair for the Core Group and providing significant resources in support of the regulatory subgroup.

As the urban runoff program and WMI move forward towards completing ongoing assessments, initiating new assessments, identifying impediments to maintaining and improving water quality, and identifying actions to improve water quality the “continuous improvement” process and input from stakeholders will become even more important to shape the actions and priorities for the future. As illustrated in Figure 1, the most advantageous time to provide effective input to the Program and Co-permittees is through the review of the Annual Report. The Annual Report is submitted to the RWQCB on September 15 each year. Budget and Annual Workplan discussions for the next fiscal year are initiated in early November of each year. Thus, the most effective opportunity to provide input into the Program’s budget and Workplan cycle is through timely review and comment on the Annual Report. To be useful, the review and comment needs to occur during the latter half of September and October of each year with comments available by the first of November.

While review of the Annual Report is the most effective means to influence future efforts, the Program and Co-permittees continued involvement in the WMI will also generate new ideas and avenues to improve the management of urban runoff and the effective and efficient integration<sup>9</sup> of urban runoff management into the overall management of the Santa Clara basin watersheds.

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<sup>9</sup> See the Program’s report entitled “Watershed Management and Urban Runoff Management Integration Report-Permit Provision C.10, June 29, 2001” for a further discussion.

## **APPENDIX A**

### **SUMMARY OF CATEGORY #3 ENVIRONMENTAL MONITORING MEASURES**

**APPENDIX A**

**SUMMARY OF**

**CATEGORY #3 ENVIRONMENTAL MONITORING MEASURES**

There are four key subcategories of projects in Category #3 projects that are directed at "supporting the SCBWMI." In particular, the specific field assessment and monitoring activities that the SCVURPPP is conducting individually and in conjunction with the SCBWMI are described under Subcategory 3(a) "Investigate Beneficial Uses and Causes of Impairment."

**Subcategory 3(a): Investigate Beneficial Uses and Causes of Impairment**

**SCBWMI Support:** The Program and Co-permittees have assisted the SCBWMI since it was initiated by the Regional Board and USEPA in 1996. The Program has consistently coordinated its watershed management activities (which were mandated in the 1995 permit) with the SCBWMI.

The SCBWMI stakeholders, including the Regional Board and the Program, have agreed on goals and objectives and on a phased process for developing a watershed management plan. The first of these phases was to characterize the overall status of watersheds within the Santa Clara Basin; this phase was essentially completed with publication, during 2000, of a Watershed Characteristics Report. As is discussed in detail in the Program's 1999-2000 Annual Report, the report was prepared almost entirely by Program staff, Program subcontractors, or contractors retained directly by Co-permittees.

Program and Co-permittee staff and contractors have also helped the SCBWMI to develop and adopt a "Framework for Conducting Watershed Assessments" which is currently being employed to conduct assessments in three representative watersheds: the watersheds of San Francisquito Creek, of the Guadalupe River, and of Upper Penitencia Creek.

**Regional Monitoring and Assessment Strategy Assistance:** During 1999 Regional Board staff, in coordination with the BASMAA Monitoring Committee, developed a Regional Monitoring and Assessment Strategy (RMAS) (Version 1.0, October 1, 1999). The purpose of the RMAS is to improve the technical content of the Regional Board's policies and regulatory actions. The specific regulatory focus of the RMAS relates to the Regional Board's obligation to complete biennial water quality assessments under the Clean Water Act's 305(b) and 303(d) requirements. The RMAS endorses several approaches to monitoring and assessment, including incorporation of bioassessment data and physical measurements in Regional Board decision making (supported by the 1997 USEPA 305(b) guidelines), coordination of consistent monitoring and assessment efforts and protocols both regionally and nationally, and enhancement of waterbody classification to help improve sampling design. The RMAS is being carried out in a phased approach, beginning with "pilot-scale implementation in selected watersheds", and establishing a rotating basin approach that will eventually result in "comprehensive assessment of surface and ground waters in the San Francisco Bay Region."

To assist Regional Board staff with the development of the RMAS, the Program

- organized and facilitated a technical panel, comprised of experts in macroinvertebrate and fish sampling, analysis of assemblages, and use of multimetric indices to assess water bodies; assessments of physical habitat to support fish and other aquatic life;
- applied fluvial geomorphology; use of metrics and statistical analysis;
- discussed the management of geographically referenced physical, chemical and biological data and information;
- discussed the use of scientific data and information in applying water-quality regulations; and
- facilitated discussions with stakeholders as part of meetings of the BASMAA Monitoring Committee.

The technical panel reached consensus to recommend initial use of a functional approach to assessing urban streams. By linking stream hydrogeomorphic functions to habitat functions and to beneficial uses the Regional Board will be better able to place ecological information into the regulatory context. The approach is summarized in the Coyote Pilot Assessment Workplan (previously submitted to the RWQCB)

The functional/pragmatic approach provides a common technical and regulatory perspective for three Regional Board Initiatives that were being developed during 2000:

1. The RMAS.
2. Sediment TMDLs and Regional Watershed Assessment.
3. Stream Protection Policy.

The Program will continue to assist Regional Board staff to improve the technical content of its 305(b) water quality assessments and 303(d) listings, with a focus on developing and refining the methodology for assessing urban streams. The Program is also willing to pull the expert panel together to further assist the Regional Board staff.

To test this approach, and to contribute to the SCBWMI's assessment of Santa Clara Basin watersheds, the Program is also implementing an Integrated Pilot Assessment in the Coyote Creek Watershed. The pilot assessment will facilitate continuous improvement of the SCBWMI's watershed assessment framework, integrate that methodology with that being used by the RMAS and other Regional Board initiatives, develop a list of appropriate initial management actions to preserve and enhance the Coyote watershed, and identify appropriate monitoring locations and provide baseline information for a long-term monitoring program for continued watershed assessment. Additional monitoring within the Coyote Watershed is specifically recognized within the proposed 8 year monitoring cycle (see Appendix B). The proposed additional efforts will be reviewed as part of Task 7 & 8 the Coyote Pilot Assessment Work Plan (see March 1, 2001 Work Plan, Attachment 4-3) which call for developing a long-term monitoring strategy by September 2002.

While expansion of the assessment and monitoring effort beyond the current pilot investigations in the Coyote Watershed are specifically recognized in the MY-RWMP, The intent is to constructively build the future years' monitoring and assessment efforts on the past years' work and lessons learned.

**Pollutant-Specific Provisions C9:** The recent emphasis on enforcement of long-standing Federal requirements that the states develop and implement TMDLs has led the Regional Board to request, and then require, assistance with estimating pollutant loads and with identifying control measures.

As described in the 1990 stormwater regulations, the intent of USEPA's mandate that stormwater pollution prevention programs incorporate a monitoring element was to help determine the effectiveness of these programs. Various studies, including the SEIDP, have demonstrated that pollutant loadings may not be the best indicator of the effectiveness of municipal stormwater programs. The Program's current Performance Standards provide for the control of urban runoff pollutants to the maximum extent practicable, and the Program's Continuous Improvement process provides for timely and orderly updates of the Performance Standards as new technology and information becomes available.

The Program has scoped and budgeted monitoring projects to comply with the new Permit's provisions that require the Program to assist Regional Board staff to prepare TMDLs. Many of these projects continue and expand on current efforts to assist the Regional Board.

#### **Provisions C9a and b. Copper and Nickel Control Measures**

*The Metals Control Measures Plan*, was first created in FY00-01 (SC27.05) to assist implementation of baseline activities contained in the Lower South San Francisco Bay Copper and Nickel Action Plans, to track and report activities, and to continue to work with the SCBWMI Bay Monitoring and Modeling (BMM) and Regulatory Subgroups regarding BMM Work Plan Updates. Descriptions of copper control program activities and nickel control program activities are included in the Copper and Nickel Action Plans approved by the SCBWMI and transmitted to the RWQCB as part of the Copper and Nickel TMDL Project. In addition, those baseline activities that are specifically related to the stormwater program are listed in Appendix B of the recently adopted NPDES permit. The Program's activities to support baseline activities was carried into FY 01-02 (see FY001-02 Workplan monitoring section project descriptions #9, 10 and 11) and is continued into the FY02-03 Workplan.

#### **Provisions C9c and e. Mercury and PCB Control Measures**

*The Mercury Rising (FY00-01, Project SC27.06)*, was created to assist Regional Board staff with preparation of TMDLs and Implementation Plans to address potential effects of mercury and PCBs on beneficial uses of San Francisco Bay. The focus of the first phase of this project has been to respond to a May 2000 Regional Board letter request for information by leading a joint project, with other

Bay Area stormwater programs, to study mercury and PCBs in storm drain sediments.

The joint stormwater agencies project, which the Program contributes to through Project SC27.06, assesses the occurrence and distribution of PCBs, as well as that of mercury, in Bay Area storm drain sediments. The results of the first year of this project have been published. Based on the results of the technical review and discussions with the RWQCB staff and other stormwater programs through the BASMAA Monitoring Committee, the SCVURPPP's FY 01-02 projects scope is being defined (FY01-02 Workplan Project #12 & 14).

Program staff is currently working with the RWQCB staff and other storm water programs to complete the second year (FY01-02) of the project and developing the third year workplan (FY02-03). The three year investigation is being conducted consistent with Provisions 9ei,ii and iii requirements and guidance from the RWQCB staff. The scope for the third year investigations will be submitted to the RWQCB, consistent with the year two workplan, by July 1, 2002.

Provision 9c requires submission of a Mercury Plan by March 1, 2002. This document has been developed and is contained in Volume II of the FY 02-03 Work Plan.

Provision 9ei&ii requires submission of a workplan to characterize the representative distribution of dioxin-like compounds and provide information to allow calculation of loadings by March 1, 2002. The workplan needs to be implemented by October 1, 2002. The workplan is contained in Volume II of the FY02-03 Workplan.

Provision 9eiv require submission of a plan and implementation schedule by March 1, 2002 that addresses actions to eliminate or reduce discharges of PCBs from urban runoff conveyance systems from controllable sources (if any). The plan is contained in Volume II of the FY02-02 Work Plan.

#### **Provisions C9d. Pesticide Control Measures**

*Regional Pesticide Strategy Coordination and Implementation*, provides for the Program to continue involvement with the BASMAA Pesticide Work Group and Urban Pesticide Committee to coordinate, evaluate, and report on storm water management plan actions outlined in the BASMAA Pesticide Strategy and in the Program's Pesticide Work Plan.

Provision C9d required the Program to submit, by July 1, 2001, a "pesticide toxicity control plan (Pesticide Plan) that addresses their own use of pesticides including diazinon, and, other lower priority pesticides no longer in use such as chlordane, dieldrin and DDT and the use of such pesticides by other sources within their jurisdictions. The Dischargers may address this requirement by building upon their prior submissions to the Regional Board. They may also coordinate with BASMAA, the Urban Pesticide Committee, and other agencies and organizations." It is the SCVURPPP's intent to collaboratively work with the RWQCB, it's staff, and other stormwater programs to develop enhancements to and continually improve the Program's Pesticide Management Plan.

## **Provision C 9f. Control Program for Sediment**

Requirements in the new Order mandate a different approach to assessing the effects of urbanization and other land uses on the hydrogeomorphic and habitat functions of streams. In particular, Provision C9fi of the Order requires submittal of a plan and time schedule, by September 2001, to conduct an assessment of San Francisquito Creek that provides for:

1. Quantitative characterization of sediment and water inputs to the creek.
2. Relative roles of sediment associated with natural and anthropogenic land use discharges.
3. Sediment conveyance from headwaters to the Bay.
4. Development of a rapid sediment budget.”

The SCVWD (onbehalf or the SCVURPPP) and MC STOPP submitted the plan and time schedule as part of the FY00-01 Annual Report this past September 15, 2001.

Provision C9fii requires “an assessment of management practices that are currently being implemented to reduce excess sediment impairment in urban creeks, and implement any additional management practices to prevent or reduce excess sediment impairment in urban San Francisquito Creeks. Such management practices may include but are not limited to: management and/or removal of large woody debris and live vegetation from channels; streambank stabilization projects; road construction, operation, maintenance, and repairs to prevent road-related erosion; management of construction related sediment; and management of post-construction sediment from areas of new development or redevelopment.” A plan and time schedule for implementation are required by March 1, 2002. The Santa Clara Valley Water District has taken the lead on these two provisions.

Provision C9fiii requires the Program to submit, by March 1, 2002, a report that identifies other creeks that may be impaired by excessive sediment production from erosion due to anthropogenic activities. This submittal is contained in Volume II of the FY02-03 Work Plan.

Provision C9fiii also requires submittal, by September 1, 2002, of a plan and schedule “to conduct a watershed analysis and management practice assessment in other creeks which may be impaired by excessive sediment production from erosion due to anthropogenic activities.”

**Watershed Management Provision C.10:** Provision C10 requires submittal to the Regional Board by July 1, 2001, a report concerning the integration of watershed management activities into the Management Plan. The report shall, at a minimum:

- a) Identify the watersheds that are relevant to each Discharger;
- b) Identify key characteristics related to urban runoff in each watershed and program elements related to such characteristics; and
- c) Provide a priority listing of watersheds to be assessed and a schedule for conducting such assessments in conjunction with the SCBWMI.

As previously described, the Program has consistently coordinated its watershed management activities (which were mandated in the 1995 permit) with the SCBWMI. The Program, as a stakeholder in the SCBWMI, has agreed with the Regional Board and numerous other Santa Clara Valley stakeholders on goals and objectives and on a phased process for developing a watershed management plan. That approach is contained in the SCBWMI "Watersheds Characteristics Report, May 2000<sup>1</sup>."

The above approach addresses the broader aspects of watershed management goals and activities and provides baseline information on the identification of Basin watersheds and characteristics. How these goals and activities are reflected and further integrated into the ongoing daily implementation of the stormwater performance standards by the Co-permittees should be further clarified. Consistent with the permit, the Program and the Co-permittees during FY 01-02 prepared a report on the integration of watershed activities into the Program URMP. (see FY 01-02 Project #6.) The report is entitled "Watershed Management and Urban Runoff Management Integration Report, Provision C.10, June 29, 2001." The recommendations from that report regarding the priorities for future assessment efforts has been incorporated into the proposed surface monitoring efforts described in Appendix B.

During FY01-02 the Program's support of Monitoring Priority 3a, Investigate Beneficial Uses and Causes of Impairment, included completion of a project for the SCBWMI Wetland Advisory Group's Baylands Assessment (FY00-01 Project SC27.13). Program staff I compiled additional baylands metadata for incorporation into the Santa Clara Basin Watershed Management Initiative (SCBWMI) Metadata Database (MDDB) and submitted the final report to the WAG on February 5, 2002.

### **Subcategory 3(b): Compile and Maintain Environmental Data and Make it Accessible.**

To implement this priority, the Program will continue ongoing projects, including development and improvement of data libraries and project report libraries and their incorporation into the Program website. The SCVURPPP website has been completely updated and can be found at [www.SCVURPPP.org](http://www.SCVURPPP.org). The Program's waterwatch website is located at [www.waterwatch.org](http://www.waterwatch.org).

### **Subcategory 3(c): Develop Strategies for Controlling Impacts of Land Use on Beneficial Uses**

To implement this priority, the Program supports the SCBWMI Land Use Subgroup (LUS). The Program's participation in the LUS is intended to fulfil a commitment in the 1997 URMP to "translate SCBWMI goals and objectives into model local-jurisdiction policies and procedures." The LUS includes stakeholders representing business interests, developers, environmental advocates, and Regional Board staff, as well as SCVURPPP Co-permittees. As documented in the LUS "Consensus Points" and in Chapter 4 of the SCBWMI Watershed Characteristics Report ("Land Use in the Basin"), the LUS has reviewed and discussed at length the potential effectiveness of various

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<sup>1</sup> As is discussed in detail in the Program's 1999-2000 Annual Report, the Watershed Characteristics Report was prepared almost entirely by Co-permittee and Program staff, Program subcontractors, or contractors retained directly by Co-permittees.

approaches to controlling urban runoff pollutants and other effects of urbanization on streams. A specific approach to integrating municipal land use planning and watershed management is described in Section 4.1 of the Watershed Characteristics Report (unabridged). Continuation of the Program's support for the LUS is shown in the MY\_RWMP.

In addition to administrative support and leadership for the LUS, the Program has also created additional projects to support the LUS' development of policies and watershed management measures. As shown below, two projects are underway which are intimately connected to the new development issues. These projects include:

*Economic and Tax Incentives in Watershed Management*, is intended to identify ways that Federal, state and local economic policies, including taxation, affect land use patterns and to explore ways that the Santa Clara Basin Watershed Management Initiative (SCBWMI) might be able to promote economic and tax policies that encourage more environmentally beneficial development decisions.

*Compare and Contrast Development Policies*, is intended to develop model municipal planning principles that would assist municipalities in developing effective policies, ordinances, or procedures to provide for long-term effective watershed protection and/or enhancement. In addition, the intent is to compare municipalities' existing policies, ordinances, or procedures against these model municipal planning principles to indicate areas where improvements can be made. The work provides for a re-examination of the previous work and additional research to be conducted in cooperation with Santa Clara Basin local and to build consensus within the WMI on the methods used in the comparison.

The Program encourages the RWQCB staff, as part of developing the revised permit language for new development, to integrate the results of the LUS' work to date, to continue RWQCB staff participation in the LUS, and to work with the Program and LUS to implement consensus recommendations reached within the LUS.

#### **Category #4 – Regional Collaborative Efforts**

As is mandated in the SCVURPPP's NPDES Permit, the Program pays over \$140,000 annually to SFEI for expenditures on the Regional Monitoring Program for Trace Substances (RMP). In recent years the RMP has expanded its scope beyond periodic water-quality sampling into a broad range of special studies which are periodically reviewed by a steering committee and various technical advisory committees.

The Program, strictly from a volunteer perspective, has been working with the Regional Board staff and Executive Officer along with BASMAA and BACWA to develop a Memorandum of Understanding (MOU) to memorialize the understandings of the various parties regarding the development of Water Quality Attainment Strategies (WQASP) including Total Maximum Daily Loads (TMDLs) for the San Francisco Bay-Delta and its tributaries. The intent of the MOU is to outline the various parties desire to work collaboratively on the development and implementation of water quality attainment strategies including TMDLs. In order to facilitate these goals, the various parties are looking a mechanisms to develop work plans, schedules for implementing the work plans, funding sources and monitoring programs. The Program believes that this a key document that can be used to cost-effectively address water quality problems. The

Program is looking for this MOU to also provide some regulatory stability and certainty regarding the identification of resource needs over the next 5 years.

The Program has provided funds during FY01-02 from its contingency budget to assist with Year 0 of the WQASP. While the Program supports the concept of the WQASP, several questions remain to be addressed as part of the developing the WQASP project management plan. These questions include:

1. Various memos show estimated budgets varying from 7.5 million to 10.5 million. What are the WQASP plans for better defining and refining the estimates?
2. As the WQASP gets a better handle on the budget, questions regarding the overall timing of the program also should be discussed. What are the WQASP plans to review the reasonableness of the original proposed schedules given the availability of resources, technical practicalities, and regulatory realities?
3. The assumption has been that the POTW and Stormwater agencies will provide most of the resources. However, many of the POTWs and Stormwater agencies are one and the same and the proposed resources requirements are not insignificant. Thus, the costs to conduct the WQASP needs to be spread to more than the public. What are the WQASP plans to bring in other resources?
4. The RWQCB is a key player in the MOU and, as such, it was our understanding would also contribute resources to the budget. What are the RWQCB's plans for providing financial resources to the WQASP?
5. Stormwater Programs have been participating in funding various TMDL associated investigations over the past several years. Specifically, a significant amount of resources have already been expended on PCBs and mercury investigations throughout the San Francisco Bay Area. More efforts are also currently planned and will be shortly underway. This is not to mention the North Bay and South Bay copper and nickel efforts. How do agencies get credit for the work that has been completed, ongoing and will continue to go on outside of the WQASP but coordinated with the overall effort?
6. Public agencies have been providing resources to regional monitoring activities (Regional Monitoring Program) for a number of years and with WQASP are being asked to fund another regional activity. What are the WQASP plans to clearly define the linkages and overlaps between the RMP and WQASP programs and how these programs address all of the RWQCB's regional monitoring needs?

The Program has discussed these question with the Executive Board of BASMAA, has requested BASMAA to transmit them to the WQASP Executive Management Board, and has transmitted them directly to the EMB.

**APPENDIX B**

**ENVIRONMENTAL MONITORING MEASURES**

## APPENDIX B

### ENVIRONMENTAL MONITORING MEASURES

The Multi-Year Receiving Waters Monitoring Plan (MY-RWMP)<sup>1</sup> contains four main elements:

1. Comprehensive Timeline: The timeline illustrates all existing commitments and priorities established by the Program, including ongoing activities meant to fulfill Regional Board Order Provisions related to C9 “Water Quality-Based Requirements for Specific Pollutants of Concern” and C10 “Watershed Management” of the NPDES permit.
2. Summary matrix of Programmatic Monitoring Indicators (PMIs): The PMIs are used to gauge how well Performance Standards are being met and control measures are being implemented.
3. Summary matrix of Environmental Monitoring Measures (EMMs): The EMMs 1) assist the RWQCB characterize receiving water quality in urban watersheds consistent with the priorities of the Watershed Management Initiative and the Program<sup>2</sup>, 2) identifies where and what type of status and trend type monitoring is appropriate, 3) recognizes the need for site-specific water quality investigations to address questions that might arise during the conduct of the routine monitoring efforts, and 4) allows for determining if control measures are having the intended effect.
4. Continuous Improvement: The continuous improvement element helps the SCVURPPP integrate urban runoff management and watershed management. It is based on the principles of adaptive management, thereby incorporating a systematic review of the monitoring results to improve future efforts and provides opportunities for stakeholder input into the continuous improvement process.

#### Environmental Monitoring Measures – Summary Matrix

While continuing the programmatic approach to measuring compliance, the Program and Co-permittees are committed to monitoring and assessing their creeks and wetlands,

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<sup>1</sup> The Program, consistent with the NPDES permit, initiated work on the Multi-Year Receiving Waters Monitoring Plan (MY-RWMP) in January 2001. The first draft was released for review by the Monitoring Adhoc Group on January 15, 2001. Based on the review and response to comments a draft was formally submitted to the RWQCB on March 1, 2001 as part of the Program’s FY01-02 Work plan. Comments were solicited from the WAS during April and May of 2001 and two additional Adhoc meetings were held on March 6 and April 19. A “Interim Draft” (fourth draft) was produced and submitted to the RWQCB on July 1, 2001, consistent with the NPDES permit. Minor revisions were made to the March draft and a final draft was submitted to the RWQCB on September 15, 2001 with the Program’s FY00-01 Annual Report. Since the September submittal, three joint WAS and Monitoring Adhoc meetings were held on November 19, December 18 and January 24 (the last two included an EPA moderator/facilitator) to seek input from various stakeholders. In addition, a separate Co-permittee Adhoc meeting was held on December 16, 2001.

<sup>2</sup> The SCVURPPP’s watershed assessment priorities are described in the Program’s report entitled “Watershed Management and Urban Runoff Management Integration Report – Permit Provision C.10, June 29, 2001.”

and San Francisco Bay. A summary matrix of the various ongoing and planned projects relative to how they address the four major components of the RWQCB's long-term monitoring goals (i.e., status and trends monitoring, surveillance monitoring, management effectiveness monitoring, and monitoring to help set realistic standards) is shown in Table 3. The purpose of this table is to give the reader a perspective on the various projects that the SCVURPPP has underway or planned. Additional detail on the expected schedule for conducting a particular project is contained in the comprehensive monitoring plan timeline, Table 1, previously discussed.

In addition to the summary matrix shown in Table 3 of the main report, a detailed set of tables and figures that identifies the SCVURPPP's proposed surface water monitoring program for the next eight years is contained in this appendix (Appendix B). Appendix B is a standalone section that: 1) assists the RWQCB characterize receiving water quality in urban watersheds consistent with the priorities of the Watershed Management Initiative and the Program, 2) identifies where and what type of status and trend type monitoring is appropriate, 3) recognizes the need for site-specific water quality investigations to address questions that might arise during the conduct of the routine monitoring efforts, and 4) allows for determining if control measures are having the intended effect.

Included in this appendix (Appendix B) are the following tables and figures:

- Table B-1 Existing Monitoring Data for Coyote Creek Watershed: Table B-1 contains a description of parameters, sampling locations and number of sites, along with the agency and specific project where the data have been collected within the Coyote Watershed. The information is based on a summary of the information contained in the *"Santa Clara Basin Stream Studies Inventory, July 24, 2001"* prepared by the Program to assist the WMI, as well as more recent data from ongoing Program efforts (The Program will be producing a quick update of the SSI during the fall of 2002. That project is part of the WAS workplan and the Program's FY02-03 Annual Monitoring Plan).
- Figure B-1 Pilot Assessment and Monitoring Efforts (1997 to Present) Occurring in Watersheds of the Santa Clara Basin: Figure B-1 illustrates the spatial coverage of investigations as well as the type (i.e, benthic , macroinvertebrate, salmonid habitat, biological, sediment, and water quality) of investigations conducted over the past four years throughout the Santa Clara Basin.
- Figure B-2 Existing Chemical, Biological and Physical Data Collection Efforts in Coyote Creek Watershed: Figure B-2 illustrates, in greater detail the spatial coverage of data and type of data available specifically in the Coyote Watershed<sup>3</sup>.

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<sup>3</sup> The high priority assigned to the Coyote watershed is based on the fact that, relative other watersheds in the Santa Clara Basin (as well as others), the watershed has the least amount of developed land (and thus the least amount of imperviousness), has the least amount of development within riparian corridors, and has one of the highest areas for projected future development. In addition, a significant amount of available work is ongoing or recently completed which allows the Program to build upon. The high priority given to the Coyote Watershed is consistent with the WMI's assessment priorities described in Work Group D products entitled *"Combined Technical Memoranda #29, #30, #13 – Management Issues to be Considered in*

- Table B-2 Preliminary SCVURPPP 8-Year Monitoring Plan for the Santa Clara Basin (excluding the Coyote Watershed): Table B-2 contains the following information: watershed location (prioritized based on WMI and SCVURPPP assessment priorities), data type (chemical, biological, physical, and trash), FYs (8 years starting with FY02-03 through FY09-10), rationale, and lead agency. The information on data type utilizes a tiered monitoring approach discussed by the RWQCB staff in its RMAS memo (February 8, 2001 Draft Monitoring Design in Regional Board-lead Pilot Watersheds, Spring 2001) that includes the following monitoring categories: screening level, detailed investigation, and status and trends<sup>4</sup>.
- Table B-3 provides a description of data parameters and analytical methods used in the SCVURPPP FY 02-03 and Multi-Year Receiving Waters Monitoring Plan.

The investigation of beneficial uses and causes of impairment will be greatly facilitated by implementation of the Regional Board's Regional Monitoring and Assessment Strategy (RMAS). The Program is committed to continuing its efforts to facilitate technical and stakeholder workgroups that will assist Regional Board staff to implement the RMAS.

With appropriate policy and guidance from the Regional Board, it should be possible to develop practical, implementable indicators (including physical and biological indicators) and protocols to assess beneficial uses in creeks, wetlands, and the Bay. These indicators and protocols are a necessary step toward establishing a sound regulatory basis for locally based watershed management.

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*Watershed Selection; Process and Objective Criteria for Incorporating Management Issues into the Selection of Watersheds, and Watershed Suite Selection and Reevaluation , dated April 18, 2000.*" In addition, the high priority assigned to the Coyote Watershed is further described in the SCVURPPP" report entitled "*Watershed Management and Urban Runoff Management Integration Report, C.10, June 29, 2001.*"

<sup>4</sup> Comments and guidance contained in the RWQCB's letter regarding Pesticide-Related components of the 2002/01 Annual Report indicate that water quality monitoring must include: 1) routine screening of representative creeks for aquatic toxicity (wet and dry periods), 2) monitoring for diazinon levels (wet and dry), and 3) monitoring for other pesticides with a substantial market share. MY-RWMP includes screening level toxicity testing in various locations based on the results of past work. MY-RWMP also allows for monitoring other pesticides consistent with permit Provision C.9i. Annual monitoring programs are developed based on previous years results. It is the SCVURPPP's intent to incorporate, as appropriate, monitoring based on the results of the Pesticide Plan use surveys.

**Table B-1. Existing monitoring parameters, location, number of sites, sampling dates, associated projects and agencies for Coyote Creek Watershed.**

**Tier One - screening level monitoring**

Data type	Parameters	# Sites/Subwatershed			Sampling Date	Project	Lead Agency
		Below Anderson Dam	Upper Penitencia Creek	Above Anderson Dam			
<b>Chemical</b>							
Field probe	Water temp, pH, conductivity, DO, turbidity	15		3	May - Sept 1999	SEIDP	SCVURPPP
Continuous monitoring	Water temp, pH, conductivity, DO	4		1	June - Sept 1999	SEIDP	SCVURPPP
Field probe	Water temp, pH, conductivity, DO, turbidity, alkalinity	9	1		May - Nov 2000	Streamflow Augmentation	San Jose
Continuous monitoring	Water temp, pH, conductivity, DO	3			May - Nov 2000	Streamflow Augmentation	San Jose
Continuous monitoring	Water temperature	6	1		May - Sept 2000	Streamflow Augmentation	San Jose
Continuous monitoring	Water temperature	42	5	1	1996-2001	FAHCE, others	SCVWD
<b>Biological</b>							
Rapid bioassessment	Benthic Macroinvertebrates	7		2	May - June 1999	SEIDP	SCVURPPP
Rapid bioassessment	Fish	15		3	May - Sept 1999	SEIDP	SCVURPPP
Bioassessment	Benthic Macroinvertebrates	9	7	2	May-97	Distribution and Abundance of Lotic Macroinvertebrates	USGS/ SCVURPPP
Bioassessment	Benthic Macroinvertebrates	15			Sep-98	Streamflow Augmentation	San Jose
Bioassessment	Fish	15			Oct-98	Streamflow Augmentation	San Jose

Data type	Parameters	# Sites/Subwatershed			Sampling Date	Project	Lead Agency
		Below Anderson Dam	Upper Penitencia Creek	Above Anderson Dam			
Bioassessment	Fish				1858 - 1999	Characterization Western Hamilton Stream Fisheries	The Nature Conservancy
Bioassessment	Microsatellite DNA		x	x	1997	Steelhead Genetic Study	SJSU
<b>Physical</b>							
Physical habitat	Salmonid Habitat Survey	15		3	Jul-99	SEIDP	SCVURPPP
Physical habitat	Salmonid Habitat Survey	4			Nov-98	Streamflow Augmentation	San Jose
Physical habitat	Salmonid Habitat Survey	x	x		1999	FAHCE	SCVWD
Physical habitat	Fish barriers	x	x		1999	FAHCE	SCVWD
Stream morphology	Rosgen classification	x	x		1999	FAHCE	SCVWD
Stream morphology	Stream classification	x	x	x	2002	Coyote Pilot Assessment	SCVURPPP
Stream morphology	Channel modification	x	x	x	1999	Waterways Management Model	SCVWD
Land use	Watershed Imperviousness	x	x	x	2000	SEIDP	SCVURPPP
Riparian	Map of vegetation communities	x	x		1998	CCRS	SCVURPPP
Vegetation							
Sediment	Volume of sediment removal	x	x		2001	Stream Maintenance Project	SCVURPPP
<b>Other</b>							
Photos - Physical Habitat	Channel location of fish sampling sites	15		3	May - Sept 1999	SEIDP	SCVURPPP
Trash	Illicit Discharge Inspection Records	x	x		Ongoing	Illicit Discharge Control Program	SCVURPPP
Flow	Stream gage measurement	x	x	x	Ongoing	Flow monitoring	SCVWD
<b>Tier 2 - Detailed-level monitoring</b>							
<b>Chemical</b>							
Field probe	Metals	9	1		May - Nov 2000	Streamflow Augmentation	San Jose

Data type	Parameters	# Sites/Subwatershed			Sampling Date	Project	Lead Agency
		Below Anderson Dam	Upper Penitencia Creek	Above Anderson Dam			
Field probe	Organophosphate Pesticides	2			Jul-00	Streamflow Augmentation	San Jose
Sediment sampling	Arsenic, cadmium, chromium, copper, lead, mercury	7		2	Jun-99	SEIDP	SCVURPPP
Sediment sampling	PCB, mercury	13		1	2000-2001	PCB/mercury study	SCVURPPP
Sediment sampling	Metals, Organics	9			Ongoing	Sediment Characterization - Stream Maintenance Program	SCVWD
<b>Biological</b>							
Field probe	Nutrients, pathogens	9	1		May - Nov 2000	Streamflow Augmentation	San Jose
Chronic toxicity bioassays	<i>Ceriodaphnia</i>	3			Jun-00	Streamflow Augmentation	San Jose
<b>Physical</b>							
Stream morphology	Channel cross sections, longitudinal profiles, bank erosion assessment		x		Mar-00	Alum Rock Park Riparian Management Plan	San Jose

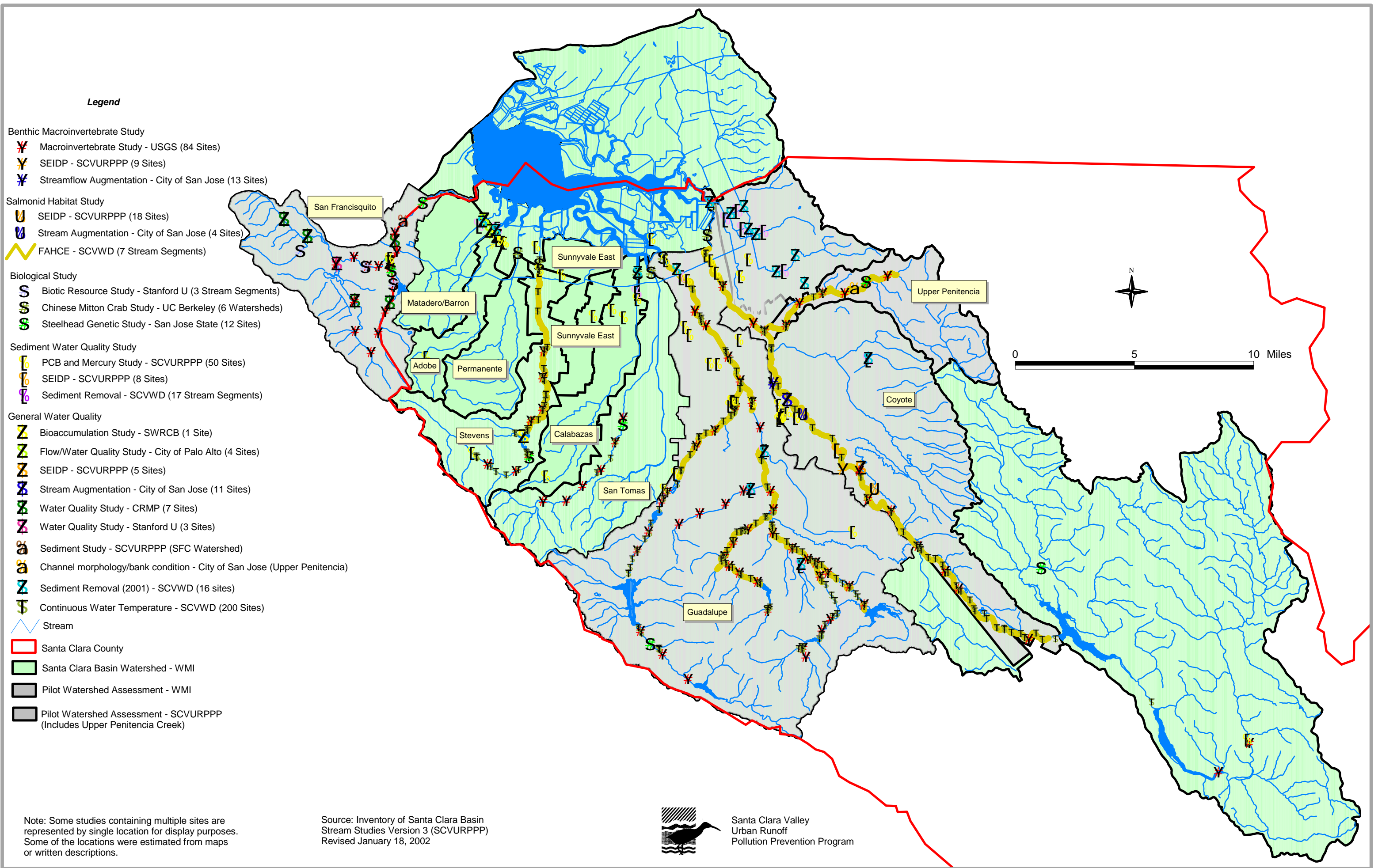


Figure B-1. Pilot Assessments and Monitoring Efforts (1997 to Present) Occurring in Watersheds of the Santa Clara Basin

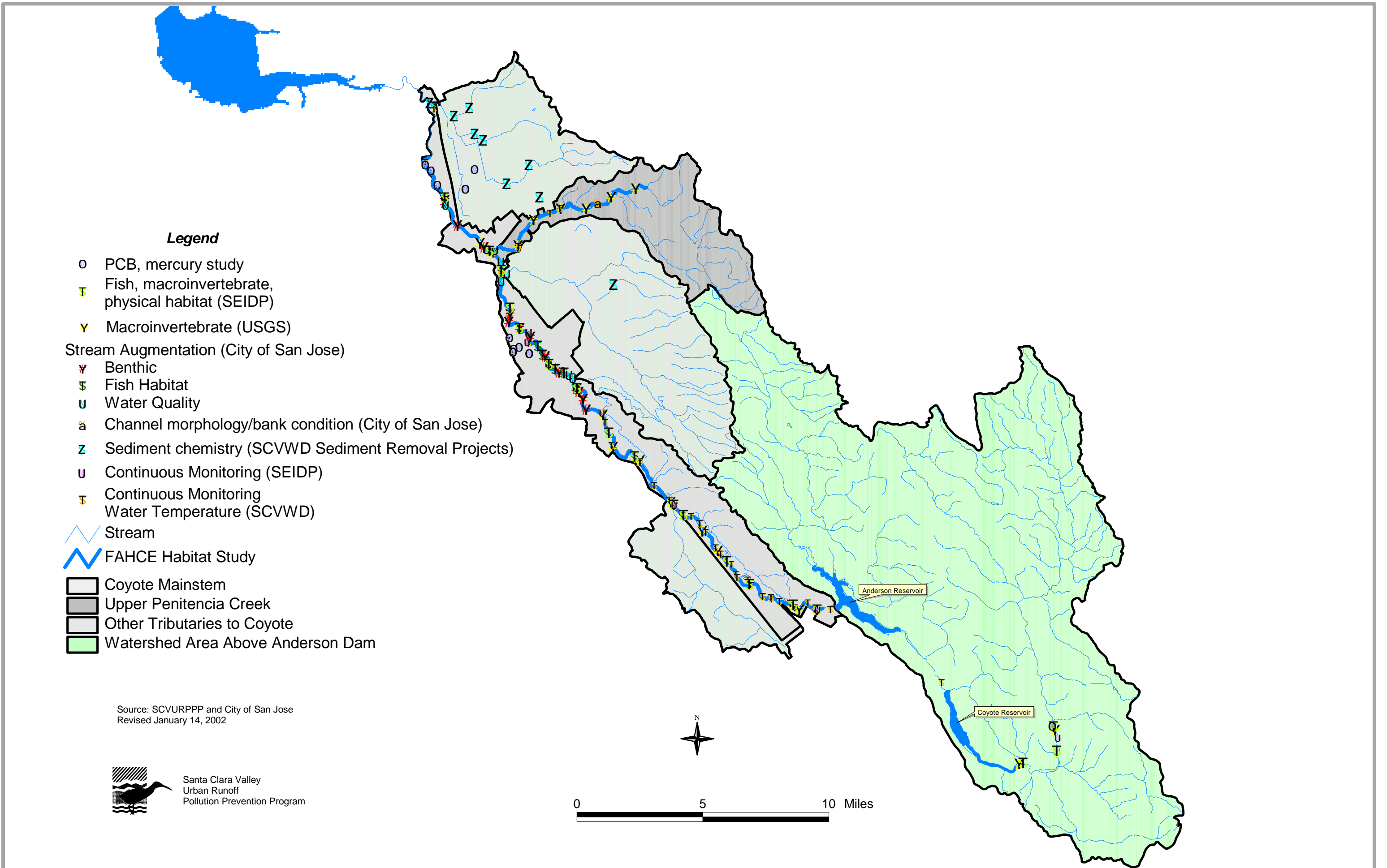


Figure B-2. Existing Chemical, Biological and Physical Data Collection Efforts in Coyote Creek Watershed.

**Table B-2 (Revised 8/5/02). SCVURPPP 8-year monitoring plan for Santa Clara Basin Watersheds<sup>1</sup>.**

Watershed Area	Data Type <sup>2</sup>	FY 02-03	FY 03-04	FY 04-05	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10	Rationale	Lead Agency
<b>Coyote Creek</b> <b>(Only tribs sampled in FY 02-03)</b>	<b>Chemical</b>										
	Contaminants - Water <sup>3</sup>	S(3)				T(5)				See FY 02-03 Monitoring Plan	SCVURPPP
	Contaminants - Sediment <sup>4</sup>	S(1)				T(1)				See FY 02-03 Monitoring Plan	SCVURPPP
	General Water Quality <sup>5</sup>	S(5)				T(8)				See FY 02-03 Monitoring Plan	SCVURPPP
	<b>Biological</b>										
	Toxicity - Water Quality <sup>6</sup>	S(1)				T(4)				See FY 02-03 Monitoring Plan	SCVURPPP
	Conventional Water Chemistry <sup>7</sup>	S(4)				T(8)				See FY 02-03 Monitoring Plan	SCVURPPP
	Pathogens (Indicator Organisms) <sup>8</sup>	S(4)				T(8)				See FY 02-03 Monitoring Plan	SCVURPPP
	Bioassessment – Macroinvertebrates <sup>9</sup>	S(4)				T(12)				See FY 02-03 Monitoring Plan	SCVURPPP
	Bioassessment – Fish <sup>10</sup>					T(6)				See FY 02-03 Monitoring Plan	SCVURPPP
	<b>Physical</b>										
	Physical Habitat <sup>11</sup>	S(4)				T(12)				See FY 02-03 Monitoring Plan	SCVURPPP
	Sediment Characterization <sup>12</sup>	S(4)		I	I	T(12)				See FY 02-03 Monitoring Plan	SCVURPPP
	Channel Dynamics and Hydrology									See FY 02-03 Monitoring Plan	SCVURPPP
Riparian Vegetation									See FY 02-03 Monitoring Plan	SCVURPPP	
Trash <sup>13</sup>	S(4)				T(4)				See FY 02-03 Monitoring Plan	SCVURPPP	
<b>Lower Penitencia Creek</b>	<b>Chemical</b>										
	Contaminants - Water Quality	S(2)				T(2)				See FY 02-03 Monitoring Plan	SCVURPPP
	Contaminants - Sediment	S(1)				T(1)				See FY 02-03 Monitoring Plan	SCVURPPP
	General Water Quality	S(5)				T(5)				See FY 02-03 Monitoring Plan	SCVURPPP
	<b>Biological</b>										
	Toxicity - Water Quality	S(2)				T(2)				See FY 02-03 Monitoring Plan	SCVURPPP
	Conventional Water Chemistry	S(5)				T(5)				See FY 02-03 Monitoring Plan	SCVURPPP
	Pathogens (Indicator Organisms)	S(5)				T(5)				See FY 02-03 Monitoring Plan	SCVURPPP
	Bioassessment - Macroinvertebrates	S(5)				T(5)				See FY 02-03 Monitoring Plan	SCVURPPP
	Bioassessment - Fish									See FY 02-03 Monitoring Plan	SCVURPPP
<b>Physical</b>											

<b>Watershed Area</b>	<b>Data Type<sup>2</sup></b>	<b>FY 02-03</b>	<b>FY 03-04</b>	<b>FY 04-05</b>	<b>FY 05-06</b>	<b>FY 06-07</b>	<b>FY 07-08</b>	<b>FY 08-09</b>	<b>FY 09-10</b>	<b>Rationale</b>	<b>Lead Agency</b>	
	Physical Habitat	S(5)				T(5)				See FY 02-03 Monitoring Plan	SCVURPPP	
	Sediment Characterization	S(5)				T(5)				See FY 02-03 Monitoring Plan	SCVURPPP	
	Channel Dynamics and Hydrology									See FY 02-03 Monitoring Plan	SCVURPPP	
	Riparian Vegetation									See FY 02-03 Monitoring Plan	SCVURPPP	
	Trash	S(5)				T(5)				See FY 02-03 Monitoring Plan	SCVURPPP	
<b>Stevens Creek</b>	<b><i>Chemical</i></b>											
	Contaminants - Water Quality				T(2)					T(2)	Baseline screening level data collected by RWQCB in 2002; SCVURPPP will repeat monitoring in future to determine status and trends.	SCVURPPP
	Contaminants - Sediment				T(1)					T(1)	Baseline screening level data collected by RWQCB in 2002; SCVURPPP will repeat monitoring in future to determine status and trends.	SCVURPPP
	General Water Quality				T(3)					T(3)	Baseline screening level data collected by RWQCB in 2002; SCVURPPP will repeat monitoring in future to determine status and trends.	SCVURPPP
	<b><i>Biological</i></b>											
	Toxicity - Water Quality				T(2)						T(2)	Baseline screening level data collected by RWQCB in 2002; SCVURPPP will repeat monitoring in future to determine status and trends.
Conventional Water Chemistry				T(3)						T(3)	Baseline screening level data collected by RWQCB in 2002; SCVURPPP will repeat monitoring in future to determine status and trends.	SCVURPPP

Watershed Area	Data Type <sup>2</sup>	FY 02-03	FY 03-04	FY 04-05	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10	Rationale	Lead Agency
	Pathogens (Indicator Organisms)				T(3)				T(3)	Baseline screening level data collected by RWQCB in 2002; SCVURPPP will repeat monitoring in future to determine status and trends.	SCVURPPP
	Bioassessment - Macroinvertebrates				T(8)				T(8)	Baseline data collected by USGS in 1997 and RWQCB in 2002; SCVURPPP will repeat monitoring in future to determine status and trends.	SCVURPPP
	Bioassessment - Fish				T(4)				T(4)	Coordinate with SCVWD to obtain permits and/or develop approach to monitor status and trends of steelhead populations.	SCVWD/ SCVURPPP
<b><i>Physical</i></b>											
	Physical Habitat				T(8)				T(8)	Salmonid habitat survey in 1999 by FAHCE; Visual habitat assessment by RWQCB in 2002; SCVURPPP will repeat monitoring in future to determine status and trends.	SCVURPPP
	Sediment Characterization		I		T(8)				T(8)	Identified as high priority for potential impairment from sediment in SCVURPPP sediment report. Conduct studies using methods developed in work associated with sediment workplan.	SCVURPPP
	Channel Dynamics and Hydrology									Baseline information describing geomorphic and hydrologic characteristics of stream channels in the Santa Clara Basin will be compiled to assist in the development of the	SCVURPPP

Watershed Area	Data Type <sup>2</sup>	FY 02-03	FY 03-04	FY 04-05	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10	Rationale	Lead Agency	
										Hydrogeomorphic Management Plan, as required in the C.3 Provision. The specific creeks in which to compile baseline data have not been selected at this time.		
	Riparian Vegetation									No data collection is currently planned	SCVURPPP	
	Trash				T(3)				T(3)	Baseline screening level data collected by RWQCB in 2002; SCVURPPP will repeat monitoring in future to determine status and trends.	SCVURPPP	
<b>Permanente Creek</b>	<b><i>Chemical</i></b>											
	Contaminants - Water Quality				T(2)					T(2)	Baseline screening level data collected by RWQCB in 2002; SCVURPPP will repeat monitoring in future to determine status and trends.	SCVURPPP
	Contaminants - Sediment				T(1)					T(1)	Baseline screening level data collected by RWQCB in 2002; SCVURPPP will repeat monitoring in future to determine status and trends.	SCVURPPP
	General Water Quality				T(3)					T(3)	Baseline screening level data collected by RWQCB in 2002; SCVURPPP will repeat monitoring in future to determine status and trends.	SCVURPPP
	<b><i>Biological</i></b>											
Toxicity - Water Quality				T(2)						T(2)	Baseline screening level data collected by RWQCB in 2002; SCVURPPP will repeat monitoring in future to determine status and trends.	SCVURPPP

<b>Watershed Area</b>	<b>Data Type<sup>2</sup></b>	<b>FY 02-03</b>	<b>FY 03-04</b>	<b>FY 04-05</b>	<b>FY 05-06</b>	<b>FY 06-07</b>	<b>FY 07-08</b>	<b>FY 08-09</b>	<b>FY 09-10</b>	<b>Rationale</b>	<b>Lead Agency</b>
	Conventional Water Chemistry				T(2)				T(2)	Baseline screening level data collected by RWQCB in 2002; SCVURPPP will repeat monitoring in future to determine status and trends.	SCVURPPP
	Pathogens (Indicator Organisms)				T(3)				T(3)	Baseline screening level data collected by RWQCB in 2002; SCVURPPP will repeat monitoring in future to determine status and trends.	SCVURPPP
	Bioassessment - Macroinvertebrates				T(7)				T(7)	Baseline data collected by RWQCB in 2002; SCVURPPP will repeat monitoring in future to determine status and trends.	SCVURPPP
	Bioassessment - Fish				T(4)				T(4)	Coordinate with SCVWD to monitor status and trends of resident rainbow trout populations.	SCVWD/ SCVURPPP
<b><i>Physical</i></b>											
	Physical Habitat				T(7)				T(7)	Baseline screening level data collected by RWQCB in 2002; repeat monitoring in future to determine status and trends. Conduct salmonid habitat survey in reaches that support trout.	SCVURPPP
	Sediment Characterization				T(7)				T(7)	Baseline screening level data collected by RWQCB in 2002; SCVURPPP will repeat monitoring in future to determine status and trends.	RWQCB/ SCVURPPP

Watershed Area	Data Type <sup>2</sup>	FY 02-03	FY 03-04	FY 04-05	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10	Rationale	Lead Agency
	Channel Dynamics and Hydrology									Baseline information describing geomorphic and hydrologic characteristics of stream channels in the Santa Clara Basin will be compiled to assist in the development of the Hydrogeomorphic Management Plan, as required in the C.3 Provision. The specific creeks in which to compile baseline data have not been selected at this time.	SCVURPPP
	Riparian Vegetation									No data collection is currently planned	SCVURPPP
	Trash				T(3)				T(3)	Baseline screening level data collected by RWQCB in 2002; SCVURPPP will repeat monitoring in future to determine status and trends.	SCVURPPP
<b>San Thomas Aquino</b>	<b><i>Chemical</i></b>										
	Contaminants - Water Quality		S(3)				T(3)			Conduct screening level monitoring	SCVURPPP
	Contaminants - Sediment		S(1)				T(1)			Conduct screening level monitoring	SCVURPPP
	General Water Quality		S(7)				T(7)			Conduct screening level monitoring	SCVURPPP
	<b><i>Biological</i></b>										
	Toxicity - Water Quality		S(3)				T(3)			Conduct screening level monitoring	SCVURPPP
	Conventional Water Chemistry		S(7)				T(7)			Conduct screening level monitoring	SCVURPPP
Pathogens (Indicator Organisms)		S(7)				T(7)			Conduct screening level monitoring	SCVURPPP	

Watershed Area	Data Type <sup>2</sup>	FY 02-03	FY 03-04	FY 04-05	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10	Rationale	Lead Agency	
	Bioassessment - Macroinvertebrates		S(7)				T(7)			Baseline data from 1997 USGS study in Saratoga; conduct rapid bioassessment synoptically with chemical and physical parameters.	SCVURPPP	
	Bioassessment - Fish		S(4)				T(4)			Coordinate with SCVWD to monitor status and trends of resident rainbow trout populations.	SCVURPPP	
	<i>Physical</i>											
	Physical Habitat		S(7)				T(7)			Salmonid habitat survey data was identified as a data gap for Saratoga Cr in SCVURPPP sediment report; conduct salmonid habitat survey.	SCVURPPP	
	Sediment Characterization		S(7)			I	T(7)			Conduct evaluation of sediment related impacts in Saratoga Cr in conjunction with SCVURPPP sediment assessment workplan.	SCVURPPP	
	Channel Dynamics and Hydrology									Baseline information describing geomorphic and hydrologic characteristics of stream channels in the Santa Clara Basin will be compiled to assist in the development of the Hydrogeomorphic Management Plan, as required in the C.3 Provision. The specific creeks in which to compile baseline data have not been selected at this time.	SCVURPPP	
	Riparian Vegetation									No data collection is currently planned	SCVURPPP	
	Trash		S(4)					T(4)		Conduct screening level monitoring	SCVURPPP	
<b>Matadero/ Barron</b>	<i>Chemical</i>											
	Contaminants - Water Quality			S(3)				T(3)		Conduct screening level monitoring	SCVURPPP	

Watershed Area	Data Type <sup>2</sup>	FY 02-03	FY 03-04	FY 04-05	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10	Rationale	Lead Agency	
Creeks	Contaminants - Sediment			S(2)				T(2)		Conduct screening level monitoring	SCVURPPP	
	General Water Quality			S(4)				T(4)		Conduct screening level monitoring	SCVURPPP	
	<b><i>Biological</i></b>											
	Toxicity - Water Quality			S(3)				T(3)		Conduct screening level monitoring	SCVURPPP	
	Conventional Water Chemistry			S(4)				T(4)		Conduct screening level monitoring	SCVURPPP	
	Pathogens (Indicator Organisms)			S(4)				T(4)		Conduct screening level monitoring	SCVURPPP	
	Bioassessment - Macroinvertebrates			S(6)				T(6)		Conduct screening level monitoring	SCVURPPP	
	Bioassessment - Fish									No data collection is currently planned	SCVURPPP	
	<b><i>Physical</i></b>											
	Physical Habitat			S(6)				T(6)		Conduct screening level monitoring	SCVURPPP	
	Sediment Characterization			S(6)				T(6)		Conduct screening level monitoring	SCVURPPP	
	Channel Dynamics and Hydrology									Baseline information describing geomorphic and hydrologic characteristics of stream channels in the Santa Clara Basin will be compiled to assist in the development of the Hydrogeomorphic Management Plan, as required in the C.3 Provision. The specific creeks in which to compile baseline data have not been selected at this time.	SCVURPPP	
	Riparian Vegetation									No data collection is currently planned	SCVURPPP	
Trash			S(6)				T(6)		Conduct screening level monitoring	SCVURPPP		

Watershed Area	Data Type <sup>2</sup>	FY 02-03	FY 03-04	FY 04-05	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10	Rationale	Lead Agency
Adobe Creek	<b><i>Chemical</i></b>										
	Contaminants - Water Quality		S(2)				T(2)			Conduct screening level monitoring	SCVURPPP
	Contaminants - Sediment		S(1)				T(1)			Conduct screening level monitoring	SCVURPPP
	General Water Quality		S(3)				T(3)			Conduct screening level monitoring	SCVURPPP
	<b><i>Biological</i></b>										
	Toxicity - Water Quality		S(2)				T(2)			Conduct screening level monitoring	SCVURPPP
	Conventional Water Chemistry		S(3)				T(3)			Conduct screening level monitoring	SCVURPPP
	Pathogens (Indicator Organisms)		S(3)				T(3)			Conduct screening level monitoring	SCVURPPP
	Bioassessment - Macroinvertebrates		S(4)				T(4)			Conduct screening level monitoring	SCVURPPP
	Bioassessment - Fish									No data collection is currently planned	SCVURPPP
	<b><i>Physical</i></b>										
	Physical Habitat		S(4)				T(4)			Conduct screening level monitoring	SCVURPPP
	Sediment Characterization		S(4)				T(4)			Conduct screening level monitoring	SCVURPPP
Channel Dynamics and Hydrology									Baseline information describing geomorphic and hydrologic characteristics of stream channels in the Santa Clara Basin will be compiled to assist in the development of the Hydrogeomorphic Management Plan, as required in the C.3 Provision. The specific creeks in which to compile baseline data have not been selected at this time.	SCVURPPP	

Watershed Area	Data Type <sup>2</sup>	FY 02-03	FY 03-04	FY 04-05	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10	Rationale	Lead Agency
	Riparian Vegetation									No data collection is currently planned	SCVURPPP
	Trash		S(4)				T(4)			Conduct screening level monitoring	SCVURPPP
<b>Calabazas Creek</b>	<b><i>Chemical</i></b>										
	Contaminants – Water Quality			S(2)				T(2)		Conduct screening level monitoring	SCVURPPP
	Contaminants - Sediment			S(1)				T(1)		Conduct screening level monitoring	SCVURPPP
	General Water Quality			S(4)				T(4)		Conduct screening level monitoring	SCVURPPP
	<b><i>Biological</i></b>										
	Toxicity - Water Quality			S(2)				T(2)		Conduct screening level monitoring	SCVURPPP
	Conventional Water Chemistry			S(4)				T(4)		Conduct screening level monitoring	SCVURPPP
	Pathogens (Indicator Organisms)			S(4)				T(4)		Conduct screening level monitoring	SCVURPPP
	Bioassessment - Macroinvertebrates			S(4)				T(4)		Conduct screening level monitoring	SCVURPPP
	Bioassessment - Fish									No data collection is currently planned	SCVURPPP
	<b><i>Physical</i></b>										
	Physical Habitat			S(4)				T(4)		Conduct screening level monitoring	SCVURPPP
	Sediment Characterization			S(4)				T(4)		Conduct screening level monitoring	SCVURPPP
Channel Dynamics and Hydrology										Baseline information describing geomorphic and hydrologic characteristics of stream channels in the Santa Clara Basin will be compiled to assist in the development of the Hydrogeomorphic Management Plan, as required in the C.3	SCVURPPP

Watershed Area	Data Type <sup>2</sup>	FY 02-03	FY 03-04	FY 04-05	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10	Rationale	Lead Agency
										Provision. The specific creeks in which to compile baseline data have not been selected at this time.	
	Riparian Vegetation									No data collection is currently planned	SCVURPPP
	Trash			S(4)				T(4)		Conduct screening level monitoring	SCVURPPP
<b>Sunnyvale Channel</b> <b>(East/West)</b>	<b><i>Chemical</i></b>										
	Contaminants - Water Quality			S(2)				T(2)		Conduct screening level monitoring	SCVURPPP
	Contaminants - Sediment			S(2)				T(2)		Conduct screening level monitoring	SCVURPPP
	General Water Quality			S(3)				T(3)		Conduct screening level monitoring	SCVURPPP
	<b><i>Biological</i></b>										
	Toxicity - Water Quality			S(2)				T(2)		Conduct screening level monitoring	SCVURPPP
	Conventional Water Chemistry			S(3)				T(3)		Conduct screening level monitoring	SCVURPPP
	Pathogens (Indicator Organisms)			S(3)				T(3)		Conduct screening level monitoring	SCVURPPP
	Bioassessment - Macroinvertebrates			S(3)				T(3)		Conduct screening level monitoring	SCVURPPP
	Bioassessment - Fish									No data collection is currently planned	SCVURPPP
	<b><i>Physical</i></b>										
	Physical Habitat			S(3)				T(3)		Conduct screening level monitoring	SCVURPPP
Sediment Characterization			S(3)				T(3)		Conduct screening level monitoring	SCVURPPP	

Watershed Area	Data Type <sup>2</sup>	FY 02-03	FY 03-04	FY 04-05	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10	Rationale	Lead Agency
	Channel Dynamics and Hydrology									Baseline information describing geomorphic and hydrologic characteristics of stream channels in the Santa Clara Basin will be compiled to assist in the development of the Hydrogeomorphic Management Plan, as required in the C.3 Provision. The specific creeks in which to compile baseline data have not been selected at this time.	SCVURPPP
	Riparian Vegetation									No data collection is currently planned	SCVURPPP
	Trash			S(3)				T(3)		Conduct screening level monitoring	SCVURPPP

**Monitoring Activities in watersheds not currently considered in plan.**

<b>San Francisquito Creek</b>										Detailed watershed assessment being conducted by stakeholder workgroup administered by the San Francisquito Creek Joint Powers Authority (JPA)	
<b>Guadalupe River</b>	<i>Chemical</i>										
	Contaminants - Water Quality	S 16	S 16	S 16	S 16	S 16	S 16	S 16	S 16	Four reaches. Monitoring is shown as quarterly; actual frequency will be in accordance with RWQCB requirements. Total Hg, Methylmercury, TSS.	SCVWD
	Contaminants - Sediment	S(4)	S(4)	S(4)	S(4)	S(4)	S(4)	S(4)	S(4)	Methylmercury concentrations in riverbed and suspended sediments.	SCVWD
	General Water Quality	S(9)	S(9)	S(9)	S(9)	S(9)	S(9)	S(9)	S(9)	Monitoring used to calibrate model to simulate stream temperature. Key variable for fish survival.	SCVWD

Watershed Area	Data Type <sup>2</sup>	FY 02-03	FY 03-04	FY 04-05	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10	Rationale	Lead Agency
	<b>Biological</b>										
	Toxicity - Water Quality										
	Conventional Water Chemistry										
	Pathogens (Indicator Organisms)										
	Bioassessment - Macroinvertebrates										
	Bioassessment - Fish	S 17	S 17	S 17	S 17	S 17	S 17	S 17	S 17	Adult migration & spawning; juvenile rearing and/or migration in 17 or more locations.	SCVWD
	<b>Physical</b>										
	Physical Habitat										
	Sediment Characterization										
	Channel Dynamics and Hydrology	S 14	S 14	S 14	S 14	S 14	S 14	S 14	S 14	Channel bottom stability in 14 transects	SCVWD
	Riparian Vegetation	S 23	S 23	S 23	S 23	S 23	S 23	S 23	S 23	Survival, health & vigor, non-native species cover, and/or tree basal area (18 plots)	SCVWD
	Trash										

1 Parameter types are listed with category of monitoring design, which include: (S) screening level, (I) detailed investigation, and (T) status and trends. The number in parentheses represents the number of sampling locations for that sampling period. Sampling locations are described in separate table and figure attached to Plan.

2 Description of analyses conducted for each data type is described in the footnotes below. In some cases, partial analyses may be implemented for data types when existing data satisfies screening level target. Standard analytical methods are indicated in separate table attached to Plan; methods are intended to be congruent with SWAMP/RMAS methodology. Adjustments will be made, if necessary, when SWAMP QAPP becomes available in September 2002.

3 Water Chemistry: Total and dissolved metals (Al, Cr, Mn, Ni, Cu, Zn, Ag, Cd, Pb, As, Se) and organophosphate pesticides; sampling conducted for three seasonal time periods.

4 Sediment chemistry: Metals (Al, Cr, Mn, Ni, Cu, Zn, Ag, Cd, Pb, As), PCB, mercury, PAHs and organochlorine pesticides; sampling conducted in the dry season only. Sediment samples taken only at integrator sites.

5 General water quality: Temperature, dissolved oxygen, pH and specific conductance (multiparameter probe readings and/or continuous measurements); sampling conducted for three seasonal time periods.

6 Toxicity testing of water on three species: (1) Ceriodaphnia: 7 day survival and reproduction; (2) pimephales 7-day; and (3) selenastrum test; toxicity conducted at wet and dry season. Frequency of toxicity was reduced (RMAS/SWAMP conducts 3 samples/year at each site) to cut costs and to increase the number of sites.

7 Conventional water chemistry: Major anions: ortho-phosphate, nitrate, nitrite, chloride, sulfate; total phosphate, boron, TKN, TDS, SSC, ammonia, chlorophyll-a, alkalinity, hardness, TOC and DOC; sampling conducted for three seasonal time periods.

8 Indicator organisms: total and fecal coliform and *enterococcus*; sampling conducted for three seasonal time periods.

Watershed Area	Data Type <sup>2</sup>	FY 02-03	FY 03-04	FY 04-05	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10	Rationale	Lead Agency
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9 Bioassessment: following CSBP methodology and conducted in the spring season.

10 Rapid bioassessment of fish communities will be done using methods established in the SEIDP or by other standardized methods utilized by the SCVWD or other Co-permittee agencies.

11 Habitat survey physical habitat assessment using CSBP methodology.

12 Sediment characterization includes collecting sediment grain size (full analysis) at sites sediment samples are collected. Suspended sediment concentrations (SSC) are collected with conventional water chemistry samples. Bedload sediment is estimated using pebble counts during bioassessment and habitat survey.

13 Trash assessment will be conducted at selected locations identified as hot spots in SCVURPPP report SCVURPPP will test and implement RWQCB assessment survey form and methods. Trash assessments will also occur at sites concurrent with bioassessment and visual habitat surveys to identify levels of trash at non-hot spot locations.

**Table B-3. Analytical methods used in SCVURPPP FY 02-03 and Multiyear Monitoring Plan.**

Description of data parameters	Analytical Methods
Pesticides (water) - Organophosphate suite	EPA 8141A
Pesticides (sediment) - Organochlorine suite	EPA 8081A
PCB congeners	EPA 8082
PAH congeners	EPA 8270
ICPMS metals suite (sediment) (Includes Al, Cr, Mn, Ni, Cu, Zn, Ag, Cd, Pb, As--all costs)	EPA 6020
ICPMS metals suite (water)--unfiltered "total" (Includes Al, Cr, Mn, Ni, Cu, Zn, Ag, Cd, Pb, As, Se--all costs)	EPA 200.8
ICPMS metals suite (water)--filtered "dissolved" (Includes Al, Cr, Mn, Ni, Cu, Zn, Ag, Cd, Pb, As, Se--al costs)	EPA 200.8
Mercury (sediment)	EPA 245.7/1631M
Major anions nutrient scan: ortho-phosphate, nitrate, nitrite, chloride, sulfate	EPA 365.2, EPA 300
Total Phosphate	EPA 365.2
Boron	EPA 200.8
TKN	EPA 351.3
TDS	EPA 160.1
Suspended Sediment Concentration (SSC)	ASTM D3977-97
Ammonia	EPA 350.3
Chlorophyll-a	SM 10200H/EPA 445.0
Alkalinity	EPA 310.1
Hardness	EPA 130.2
TOC	EPA 415.1
DOC	EPA 415.1
Sediment grain size - full analysis (phi scale)	Plumb/PSEP
Total coliform	SM 9221B
Fecal coliform	SM 9221B
enterococcus	SM 9230B
<i>Ceriodaphnia</i> 7-day Survival & Reproduction	EPA 1002.0 (WET)
<i>Pimephales (fathead minnow)</i> 7 - day	EPA 1000.0 (WET)
<i>Selenastrum (algae)</i> test	EPA 1003.0 (WET)

(WET) Whole Effluent Toxicity: Guidelines Establishing Test Procedures for the Analysis of Pollutants (October 16, 1995)

**TABLE 1  
Interim Draft  
5-year Monitoring Plan**

A Program Monitoring Priorities	B Permit Provision	C Task	D In progress 00-01 (New FY01-02)	3/1/01	7/1/01	9/1/01	3/1/02	7/1/02	9/1/02	3/1/03	7/1/03	9/1/03	3/1/04	9/1/04	3/1/05	9/1/05
Category #2 - Continuous Improvement																
	<b>C(6)a.i.</b>	Continuous Improvement of ICID	Completed	→	d	Description of Procedures for Enhanced ICID Reporting										
		Continuous Improvement of ICID	SC34.02			Development and Testing of Program-wide ICID Reporting System					→	Implementatio n of Program- wide ICID Reporting System				→
	<b>C(5)a.1.</b>	Continuous Improvement of IND	Completed	→		Description of Procedures for Enhanced IND Reporting										
		Continuous Improvement of IND	SC34.01			Development and Testing of Program-wide Inspection Reporting & Tracking System						→	Implementatio n of Program- wide Inspection Reporting & Tracking System			→

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	C2	Pilot Liter "HotSpots"	Project SC27.01				→		Draft June Final Sept. Technical Report							
	C2	Storm Drain Inlet Retrofit Design Development	Project SC27.02				→		Technical Report							
	C2	Trash Work Plan	FY02-03							WorkPlan						→
Category #3- Support SCBWMI																
3a - Investigate BUs and Causes of Impairment																
	C10	Support for SCBWMI Watershed Assessment Subgroup Workplan	FY02-03 (WAS task 7.7, Task 7.6, Task 11.2, and Task 11.3)													→
	C9/10	Policy and Guidance for 305(b) Assessments and 303(d) Listings	Project SC22.59				→		Contributions to 305(b) Report							→
	C9/10	Integrated Assessment of Coyote Creek	SC27.11 -				→		Interim Status Report							
									Final Report							

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	C(9)fi.	San Francisquito Creek Watershed Analysis	To be prepared by SCVWD	→		Plan and Schedule										
	C(9)fi.	San Francisquito Creek Management Practices	To be prepared by SCVWD				→	Plan and Schedule								
	C7/9	San Francisquito Creek Baseline Streamflow	Completed													
	C(9)fi.iii	Identify other creeks potentially impaired by sediment	FY01-02				→	Report								
	C(9)fi.iii.	Other Creeks - Watershed Analysis and Management Practice Assessment	FY02-03						→	Plan and Schedule						
	C(9)fi.iii.	Analysis of Other Creeks								Analysis of Other Creeks		→	Tentative			

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	<b>C(10)I,ii,iii</b>	Integration of Watershed Management into URMP	Completed	→	Report with priority listing & schedule for assessments											
	<b>C(10)iii</b>	Summary Assessments of Each Watershed				Not Defined										→
	<b>C7/10</b>	Targeted Assessment and Monitoring of Water-Quality and Biological Indicators in Coyote Creek							Findings from Assessment							→
	<b>C7/10</b>	Support for Baylands Assessment	Completed			Draft		Final (Feb. 02)								
	<b>C10</b>	Review Assessments Strategies/Approaches								Define Project Scope and Funding						
3b - Review and Compile Environmental Data and Make it Accessible	<b>C2-10</b>	Compile, Maintain and Share Watershed Data	SC34.13													→

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3c - Develop Strategies for Controlling Impacts of Land Use on Beneficial Uses	C7/10	Support SCBWMI Land Use Subgroup	Project SC34.14													
	C7/10	Opportunities for Land Use Policies to Protect Beneficial Uses	Project SC20.06						→							
	C7/10	Economic and Tax Incentives in Watershed Management	Project SC22.65						→							

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Category # 4- Regional Collaborative Efforts																	
	C(7)b	Participation in Regional Monitoring Program	Projects SC27.10 - Assist RMP Redesign														→
	C(7)	Annual Contribution to RMP	Program Budget Line Item														→
Pollutant-Specific Provisions																	
	C(9)a	Control Program for Copper	Metals Control (SC34.04)			Annual Report on Baseline Activities			Annual Report on Baseline Activities								→
	C(9)b	Control Program for Nickel	(SC34.05)			Annual Report on Baseline Activities			Annual Report on Baseline Activities								→
	C(9)c	Mercury Control Program	Completed					→	Mercury Plan								
	C(9)diii	Regional Pesticide Strategy Coordination & Implementation	SC34.07	→	Updated Plan				Updated Plan								

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				Submit draft Year One Report	Submit Final First Year Report		Submit draft Year One Report	Submit Final First Year Report								
	C(9)ei&ii	Characterize PCBs	SC34.08(parti cipation in Joint SW Agencies Project)First Year Completed													
	C(9)eiii	Identify PCB Control Measures; Schedule Implementation	Completed		Plan (Due June 1, 2001)											
	C(9)eiii	Begin PCB Control Impl.	SC34.09				Plan									
	C(9)eiv	Implement PCB Actions					Plan		(Begin Impl. July 1, 2002)							
	C(9)eiii	Identify Dioxin Control Measures; Schedule Implementation	SC34.09				Plan									
	C(9)eiii	Begin Dioxin-like PCBs Control Impl.							Begin (Oct. 1, 2002)							
	C(9)eiv	Implement Dioxin- like PCBs Actions								Plan	(Begin Implemen tation )					

**Table 2**  
**Summary of Ongoing and Planned SCVURPPP Programmatic Monitoring Activities**

<b>SCVURPPP Monitoring Categories</b>	<b>Status and Trends<sup>1</sup></b>	<b>Surveillance (targeted – source ID)</b>	<b>Evaluate Management Effectiveness</b>	<b>Realistic Standards</b>	<b>Status (Expected FY)</b>
<b>Assessment</b>					
Assess the Assessments	No	No	Planned	No	Planned 02-03
<b>Implementation</b>					
Copper/Nickel Baseline Actions <sup>2</sup>	Yes	Yes	Yes	Yes	Ongoing <sup>3</sup>
Pesticide Strategy	Yes	Yes	Yes	Yes	Ongoing
LUS – subgroup support	No	No	Yes	Yes	Ongoing
LUS	No	No	Yes	Yes	Ongoing
<ul style="list-style-type: none"> <li>• Economic and Tax Incentives</li> <li>• Compare and Contrast develop. policies</li> </ul>					Draft FY01-02 Final FY01-02 Draft FY01-02 Final 02-03

<sup>1</sup> Notes: Status and Trend monitoring involves 1) collection and analysis of existing and/or new data (chemical, physical, biological) to characterize baseline conditions, and 2) periodic collection of new data for comparison against baseline conditions and analysis of trends.

Surveillance monitoring involves targeted monitoring of known or suspected sources of pollutants of concern.

Management Effectiveness monitoring involves designing specific receiving water and/or programmatic monitoring programs to evaluate BMPs and/or the implementation and effectiveness of overall stormwater program activities.

Realistic Standards monitoring involves specifically designing monitoring and data analysis programs to establish reasonable standards (narrative and/or numeric).

<sup>2</sup> Multi-year implementation program for Copper and Nickel Action Plan.

<sup>3</sup> Review of the results of the Baseline Actions is conducted via the BMM subgroup twice per year. The results of the first review were completed and submitted to the RWQCB on November 9, 2001 (see separate submittal).

<b>SCVURPPP Monitoring Categories</b>	<b>Status and Trends<sup>1</sup></b>	<b>Surveillance (targeted – source ID)</b>	<b>Evaluate Management Effectiveness</b>	<b>Realistic Standards</b>	<b>Status (Expected FY)</b>
<ul style="list-style-type: none"> <li>Stormwaters role in congestion management</li> </ul>					Draft FY01-02 Final FY01-02
<b>Effectiveness</b>					
Storm drain inlet retrofit assessment	No	No	Planned	Planned	Planned 01-02
Industrial Outreach (FWP to IND 2)	Planned	Planned	Planned	Planned	Planned 02-03

<b>SCVURPPP Monitoring Categories</b>	<b>Status and Trends<sup>1</sup></b>	<b>Surveillance (targeted – source ID)</b>	<b>Evaluate Management Effectiveness</b>	<b>Realistic Standards</b>	<b>Status (Expected FY)</b>
Pilot Investigation re. Trash “hot spots”	Planned	Planned	Planned	Planned	Ongoing FY 01-02 Workplan 02-03
<b>Project</b>					
Stream Inventory	No	No	Yes	No	Two updates Completed Quick Update Planned FY02-03 Complete Update Planned F03-04
Baylands Inventory	No	No	Yes	No	Draft Completed Final to be completed FY001-02
Program Data Management & ICID/IND enhanced reporting	No	Yes	Yes	Yes	Ongoing
Draft Multi-Year Plan	Planned	Planned	Planned	Planned	Various Drafts Completed FY00-01 and Interim Draft Completed July1, 2001 Final Completed March 1, 2002

**Table 3  
Summary of Ongoing and Planned SCVURPPP Receiving Water Monitoring & Watershed Assessment Activities**

<b>SCVURPPP Monitoring Categories</b>	<b>Description</b>	<b>Status and Trends Monitoring<sup>1</sup></b>	<b>Surveillance Monitoring (targeted – source ID)</b>	<b>Management Effectiveness Monitoring</b>	<b>Realistic Standards Monitoring</b>	<b>Activity Status</b>
<b>Baseline</b>						
PCB <sup>2</sup>	Three year project. Characterization of deposited sediments in urban storm drains for industrial, residential, commercial , open and mixed land uses. First year sampling included 21 sites for SCVURPPP. Year two includes 20 sampling sites and a “hot spot” case study for four different drainages (i.e., Leo Ave., Burke St., Auzerais and Sunol St., and West Holm St., this includes 9 separate stations).	Yes	Yes	Yes	Yes	Ongoing
Hg <sup>3</sup>	First year study included sampling at 21 sites for total and mythel mercury. Second year includes sampling at the sites noted above for Total only.	Yes	Yes	Yes	Yes	Ongoing
Copper/Nickel <sup>4</sup>	Monthly monitoring of ten receiving water stations located in the Lower South San Francisco Bay.	Yes	No	Yes	Yes	Ongoing
Chlorinated Pesticides <sup>5</sup>	Preliminary sampling at 20 sites as part of year two of the PCB/Hg investigation.	Yes	Yes	Yes	Yes	Ongoing

<sup>1</sup> Notes: Status and Trend monitoring involves 1) collection and analysis of existing and/or new data (chemical, physical, biological) to characterize baseline conditions, and 2) periodic collection of new data for comparison against baseline conditions and analysis of trends (the tier 1 and 2 concepts contained in the RMAS are considered as part of this type of monitoring). Surveillance monitoring involves targeted monitoring of known or suspected sources of pollutants of concern (includes the collection of information to allow the RWEQCB to develop preliminary loading estimates within the technical constraints of conducting such estimates). Management Effectiveness monitoring involves designing specific receiving water and/or programmatic monitoring programs to evaluate BMPs and/or the implementation and effectiveness of overall stormwater program activities. Realistic Standards monitoring involves specifically designing monitoring and data analysis programs to establish reasonable standards (narrative and/or numeric).

<sup>2</sup> Joint Bay area stormwater program managed by the SCVURPPP to assist RWQCB with TMDL effort. Third year effort to consider sediment as a drainage basin monitoring tool.

<sup>3</sup> Joint Bay area stormwater program managed by the SCVURPPP to assist RWQCB with TMDL effort.

<sup>4</sup> Multi-year Joint POTW and stormwater monitoring effort in Lower South San Francisco Bay managed by the City of San Jose

<sup>5</sup> Initiated some preliminary chlorinated pesticide monitoring as part of the Joint Bay Area stormwater PCB and Hg program. Results will be use to define second year of effort.

**Table 3, continued**  
**Summary of Ongoing and Planned SCVURPPP Receiving Water Monitoring & Watershed Assessment Activities**

<b>SCVURPPP Monitoring Categories</b>	<b>Description</b>	<b>Status and Trends Monitoring<sup>1</sup></b>	<b>Surveillance Monitoring (targeted – source ID)</b>	<b>Management Effectiveness Monitoring</b>	<b>Realistic Standards Monitoring</b>	<b>Activity Status</b>
Sediment – San Francisquito	Work plan developed by the SCVWD in conjunction with the San Mateo STOPPP to conduct a watershed analysis that provides for: 1) quantitative characterization of sediment and water inputs to the creek, 2) relative roles of sediment associated with natural and anthropogenic land use discharges, 3) sediment conveyance from headwaters to the Bay, and development of a rapid sediment budget.	Planned	Planned	Planned	Planned	Planned 02-03
Sediment - other	Project aimed at 1) identifying urban streams that may be impaired by excessive sediment production from erosion due to anthropogenic activities, and 2) developing a plan and time schedule to conduct watershed analysis and management practices.	Planned	Planned	Planned	Planned	Planned 02-03
Regional Monitoring Program	<p>The RMP is a regional collaborative monitoring effort. The Regional Monitoring Program for Trace Substances (RMP) monitors contaminant concentrations in water, sediments, and fish and shellfish tissue in San Francisco Bay and Delta, together known as the San Francisco Estuary. The RMP is designed to obtain data describing the concentration of toxic trace elements and organic contaminants. Ultimately, the goal of the RMP is to provide information on how contaminant concentrations in the Estuary are responding to pollution prevention and reduction measures and thus if the financial resources devoted to these efforts are improving water quality.</p> <p>Funding is provided by the three South Bay POTWs (who are Co-permittees to urban runoff program) and the SCVURPPP on behalf of all 15 Co-permittees.</p>	Yes	No	Yes	Yes	Ongoing

**Table 3, continued**  
**Summary of Ongoing and Planned SCVURPPP Receiving Water Monitoring & Watershed Assessment Activities**

<b>SCVURPPP Monitoring Categories</b>	<b>Description</b>	<b>Status and Trends Monitoring<sup>1</sup></b>	<b>Surveillance Monitoring (targeted – source ID)</b>	<b>Management Effectiveness Monitoring</b>	<b>Realistic Standards Monitoring</b>	<b>Activity Status</b>
Water Quality Attainment Strategies Program (WQASP) <sup>6</sup>	The San Francisco Bay Area Water Quality Attainment Strategies Program is a joint Bay Area Clean Water Agencies (BACWA), Bay Area Stormwater Management Agencies Association (BASMAA), and SFRWQCB program established under an MOU to guide and assist the development of TMDLs and other water quality attainment strategies for the SF BAY-Delta and its tributaries. The three South Bay POTWs, as members of BACWA) and the SCVURPPP as a member of BASMAA will be providing resources to this effort over the next five plus years.	Planned	Planned	Planned	Planned	Planned 02-03 (Year 0 funded requested in FY01-02 not originally in budget-will address with contingency)
Follow-up monitoring to fill high priority assessment data gaps (Screening-Level Receiving Water Monitoring)	Annually develop and conduct a screening level assessment of the physical, chemical (water and/or sediment), and biological parameters at stations for a selected reach of an urban stream. For each of the next five Fiscal years, starting in FY 02-03, a screening level assessment will be conducted. Urban stream reaches will be selected to 1) assist fill high priority data gaps identified as part of the WMI watershed assessments and SCVURPPP Coyote Assessment, and 2) collect preliminary water quality data on prioritized list of watersheds listed in the Integration Report.	Planned	Planned	Planned	Planned	Planned 02-03

<sup>6</sup> While the SCVURPPP supports the overall goals of the WQASP efforts it has requested that BASMAA forward to the Executive Management Board the following questions: The SCVURPPP understands that an overall plan is under preparation as part of FY year zero (FY 01-02) and that it is the intent to address the above questions as part of the plan. The SCVURPPP has separately requested that the EMB give careful consideration to these questions. The SCVURPPP's review of the plan and the responses to these questions will be a key consideration for future funding requests.

**Table 3, continued**  
**Summary of Ongoing and Planned SCVURPPP Receiving Water Monitoring & Watershed Assessment Activities**

<b>SCVURPPP Monitoring Categories</b>	<b>Description</b>	<b>Status and Trends Monitoring<sup>1</sup></b>	<b>Surveillance Monitoring (targeted – source ID)</b>	<b>Management Effectiveness Monitoring</b>	<b>Realistic Standards Monitoring</b>	<b>Activity Status</b>
Long-term Monitoring in Coyote Watershed	Implement the long-term monitoring plan developed as part of the Pilot Coyote Integrated Assessment. Integrate the monitoring plan with the City of San Jose monitoring program.	Planned	Planned	No	Planned	Planned 03-4
Coyote Creek Water Quality Monitoring <sup>7</sup>	<p>The City of San Jose has, for the past two years, collected baseline water quality data in Coyote Creek. On a monthly basis between May and November, water quality monitoring is conducted at 8 stations in Coyote Creek and two stations in tributaries (i.e, Upper Penitencia and San Miguelita Creeks). Fifty-five water quality parameters (includes temperature, nutrients, pathogens, metals, anions, and general water quality parameters) are measured from garb samples during each sampling event, but not at each station. (The sampling stations are located between the Montague Expressway to just south of the Capitol Expressway.)</p> <p>The CSJ has included additional investigations for low DO as shown in Appendix B and have committed to annual monitoring for screening and/or investigation type studies in the future based on the results of each years monitoring.</p>	Yes	No	Yes	No	Ongoing
<b>Assessment</b>						
WMI – Assessments (San Francisquito Creek, Guadalupe River, Upper Penitencia)	Three ongoing watershed assessments by the WMI following the WMI's "Framework for Conducting Watershed Assessments." The assessments are based on available data.	Planned	No	Planned	Planned	Ongoing

<sup>7</sup> Coyote creek water quality monitoring is part of stream flow augmentation project funded by the City of San Jose and managed by the City's Stormwater Program.

**Table 3, continued**  
**Summary of Ongoing and Planned SCVURPPP Receiving Water Monitoring & Watershed Assessment Activities**

<b>SCVURPPP Monitoring Categories</b>	<b>Description</b>	<b>Status and Trends Monitoring<sup>1</sup></b>	<b>Surveillance Monitoring (targeted – source ID)</b>	<b>Management Effectiveness Monitoring</b>	<b>Realistic Standards Monitoring</b>	<b>Activity Status</b>
Coyote Creek Pilot Assessment	Develop and test, on a pilot scale, an integrated watershed assessment approach. The assessment is based on the linkage of stream hydrogeomorphic functions (movement of water and sediment) to habitat functions and how the functions support aquatic life beneficial uses. The project includes conducting: a stream classification , assessment of physical conditions affecting biological resources, evaluating potential near-term management actions, prioritizing critical reaches, and developing a long-term monitoring program (see above for implementation of receiving water monitoring).	Planned	No	Planned	Planned	Ongoing