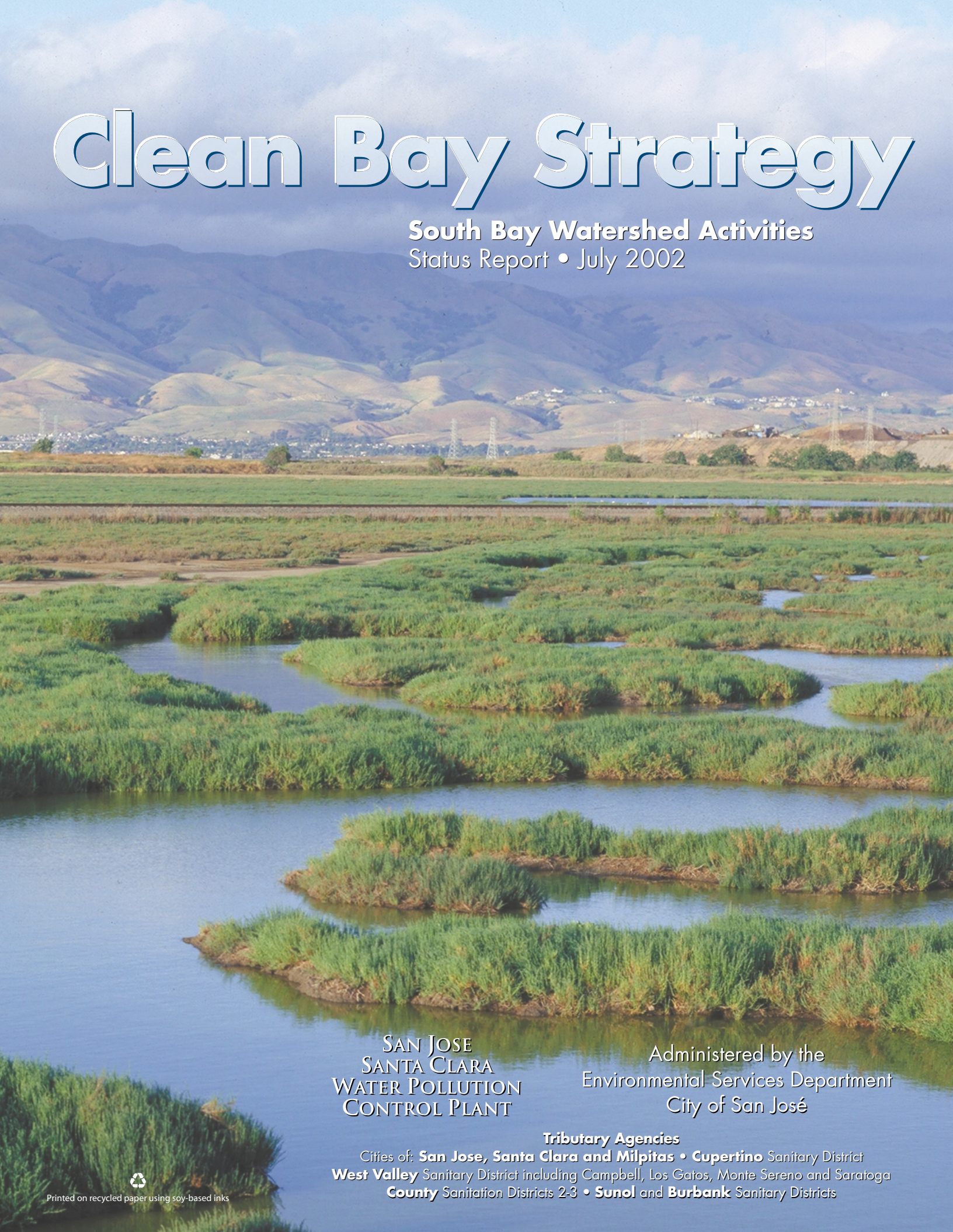
Clean Bay Strategy

South Bay Watershed Activities

Status Report • July 2002



San Jose
Santa Clara
Water Pollution
Control Plant

Administered by the
Environmental Services Department
City of San José

Tributary Agencies
Cities of: **San Jose, Santa Clara and Milpitas** • **Cupertino** Sanitary District
West Valley Sanitary District including Campbell, Los Gatos, Monte Sereno and Saratoga
County Sanitation Districts 2-3 • **Sunol** and **Burbank** Sanitary Districts

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EXECUTIVE SUMMARY

The City of San José (City) administers and implements the requirements of the National Pollutant Discharge Elimination System (NPDES) permit for the San Jose/Santa Clara Water Pollution Control Plant (Plant) on behalf of San José, Santa Clara and the Tributary Agencies.

This report documents permit activities and related watershed efforts during the period January 1, 2002 to June 30, 2002. This report includes a comprehensive description of all programs and activities. The Clean Bay Strategy timeline is included in Appendix A.

NPDES Permit Renewal

The Plant's current permit expires in June 2003. A permit application is due to the California Regional Water Quality Control Board, San Francisco Bay Region (Regional Board) in December 2002. The City is currently preparing for the upcoming permit renewal and began participating in the newly formed regional Permit Workgroup, working under advisement of the Santa Clara Basin Watershed Management Initiative. The Permit Workgroup will work on developing the language for the permits for the three Publicly Owned Treatment Works (POTWs) discharging to the San Francisco Bay, South of the Dumbarton Bridge (South Bay). As part of these efforts, a policy-focused strategy was developed to reflect the City's permit priorities and to direct long-term planning and implementation efforts.

Since 1994, the City has managed a pollution prevention program using the Clean Bay Strategy (CBS) which defined the policies and principles of watershed management from the City's perspective. The current permit strategy builds upon and expands the successful CBS approach, while preserving the basic goals and principles of a holistic, cost-effective, adaptive approach to watershed management. Future permitting goals and objectives reflect a greater emphasis on region-wide issues and solutions. The general goals for the 2003 NPDES permit are to obtain a permit that:

- Supports a comprehensive, cost-effective watershed management approach that protects the environment and maintains environmental leadership;
- Is supported by stakeholders;
- Leads to a single integrated environmental strategy for all water quality programs administered by the City;
- Is streamlined and contains appropriate compliance requirements and;
- Coordinates efforts with the other two POTWs discharging to the South Bay.

Flow Reduction

The Plant is expected to be below the 120 million gallons per day (mgd) Average Dry Weather Effluent Flow (ADWEF) trigger during the first three months of the 2002 dry weather season based on current effluent flows. Water recycling and water conservation programs continue to successfully reduce effluent discharge. The South Bay Water Recycling (SBWR) Program is currently implementing Phase 2 expansion projects that should increase demand for recycled water by 5 mgd.

In January 2002, the San José City Council and the Santa Clara Valley Water District Board of Directors approved an agreement to work jointly on both a short-term recycled water project and a long-term recycled water partnership. The collaborative effort is intended to develop an institutional framework for long-term ownership, operation and maintenance and future expansion of SBWR.

South Bay Marsh Habitat studies show two key trends:

- New tidal marsh formation, including significant amounts of salt marsh, apparently due to sediment accretion and subsequent vegetation colonization; and
- Comparable salt marsh conversion to other habitat types in the Reference Area and the Main Study Area.

Generally there has been little net change in the total salt marsh area and in the proportion of salt marsh in the study area.

Pollutant Reduction

The Plant has met all of its discharge limits for the reporting period.

Research and Special Studies

During the reporting period, the Regional Board adopted amendments to the Basin Plan that establish site-specific objectives for copper and nickel in the South Bay. These amendments resulted from the copper and nickel Total Maximum Daily Load process that concluded with a finding that copper and nickel are unlikely to impair the South Bay.

Since January 2002, the City has continued to implement its bioassessment program to assess plankton community composition and conventional water chemistry in the South Bay. This program will continue throughout 2002.

Regional Cooperative Efforts

The City continued its active involvement in several regional cooperative efforts. Highlights include:

- City staff is supporting development of the Santa Clara Basin Watershed Management Initiative (WMI) Action Plan, due to be completed by December 2002. This Action Plan will begin the Implementation Phase of the WMI.
- The City is extending its successful Watershed Grants Program to continue to involve stakeholders in watershed management activities.

Outreach

The City is a partner in the successful Watershed Watch campaign launched in 2001 by the Santa Clara Valley Urban Runoff Pollution Prevention Program and the WMI. City staff chair several regional outreach efforts, including the WMI Outreach Subgroup and the Bay Area Pollution Prevention Group.

Next Steps

The City will continue to support and participate in the regional stakeholder effort to develop a Watershed Action Plan and to reissue the Plant's permit. Programmatic efforts will emphasize evaluating the past permit period and redirection as needed in preparation for the new permit.

This permit development process is intended to support a "big picture" approach to environmental management, moving toward the integration of water quality permit requirements in the watershed and improved allocation of limited resources. The City believes that the WMI stakeholder process will again be successful and lead to regulatory certainty for the City and regulated community, be supported by stakeholders, and improve the overall knowledge and quality of environmental conditions in the South Bay.

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ABBREVIATIONS

Action Plan	*Revised South Bay Action Plan*
ADWEF	Average Dry Weather Effluent Flow
BACWA	Bay Area Clean Water Agency
BAPPG	Bay Area Pollution Prevention Group
BASMAA	Bay Area Stormwater Management Agencies Association
Bay	San Francisco Bay
BMM	Watershed Management Initiative Bay Monitoring and Modeling Subgroup
BMP	Best Management Practice
CAP	Copper Action Plan
CBS	Clean Bay Strategy
CII	Commercial, Industrial, and Institutional
City	City of San José
City Program	San José's Urban Runoff Program
CPP	Community Partnership Program
ESD	Environmental Services Department
FAS	Flow Audit Study
FFS	Fee For Service
FY	Fiscal Year
Guidelines	*Guidelines for Managing Water in Cooling Systems*
GWI	Groundwater Infiltration
H-Axis	Horizontal Axis
IU	Industrial User
MFD	Multi-Family Dwelling
NAP	Nickel Action Plan
NPDES	National Pollutant Discharge Elimination System
PBCE	Department of Plumbing, Building, and Code Enforcement
PG&E	Pacific Gas and Electric Company
Plant	San Jose/Santa Clara Water Pollution Control Plant
POTW	Publicly Owned Treatment Works
Regional Board	California Regional Water Quality Control Board, San Francisco Bay Region
RMP	Regional Monitoring Program
SBWR	South Bay Water Recycling
SFD	Single-Family Dwelling
SmMFD	Small Multi-Family Dwelling
SMR	Self-Monitoring Report
SOP	Standard Operating Procedure
South Bay	San Francisco Bay, South of Dumbarton Bridge
SSO	Site Specific Objectives
TAC	Technical Advisory Committee
TMDL	Total Maximum Daily Load
TPAC	Treatment Plant Advisory Committee

Tributary Agencies	Cities and Agencies Tributary to the Plant: San José; Santa Clara; Milpitas; Cupertino Sanitary District; West Valley Sanitary District – Campbell, Los Gatos, Monte Sereno, and Saratoga; County Sanitation Districts 2 and 3, and Sunol and Burbank Sanitary Districts
ULFT	Ultra-Low Flush Toilet
Urban Runoff Program	Santa Clara Valley Urban Runoff Pollution Prevention Program
URMP	Urban Runoff Management Plan
U.S. EPA	United States Environmental Protection Agency
Water District	Santa Clara Valley Water District
WE&O	Watershed Education and Outreach
WET	Water Efficient Technologies
WMI	Santa Clara Basin Watershed Management Initiative

UNITS OF MEASURE

ccf	hundred cubic feet
gpd	gallons per day
LF	lineal feet
mgd	million gallons per day
ppb	parts per billion
ppd	pounds per day (lbs/day)
ppt	parts per trillion

I FLOW REDUCTION AND WETLANDS MITIGATION

In response to marsh conversion and the need to protect endangered species' habitat, the City of San José (City) proposed the *San José Action Plan* in 1991.[1] The San Francisco Bay Regional Water Quality Control Board (Regional Board) approved, and the City adopted, the *San José Action Plan* with a goal to reduce dry weather flows from the San Jose/Santa Clara Water Pollution Control Plant (Plant) to below 120 million gallons per day (mgd). The three main components of that plan were marsh mitigation, water conservation, and water recycling.

The City proposed a *Revised South Bay Action Plan (Action Plan)* in June 1997. That plan was approved and incorporated into the Plant's 1998 National Pollutant Discharge Elimination System (NPDES) permit.[2] The 1997 *Action Plan* called for expanding South Bay Water Recycling (SBWR), promoting industrial water recycling and reuse, expanding indoor water conservation, furthering inflow/infiltration reduction, and developing environmental enhancement projects.

An evaluation of all the flow reduction programs was completed and proposed modifications will be included as part of the December 2002 NPDES permit application. This will be described in the January 2003 *CBS Report*.

Table 1 shows the discharge from the Plant for the first half of 2002. The requirement for the Plant to discharge less than 120 mgd will be met in the first three months of the dry weather season based on current effluent flows. This marks the fourth consecutive year of compliance with the flow trigger. Reductions in the last year have resulted from the slow economy.

Table 1: Year 2002 Plant Flows

MONTH	FLOW, mgd		
	INFLUENT	DIVERTED*	EFFLUENT
January	123.0	3.9	119.1
February	119.3	3.8	115.5
March	120.4	5.5	114.9
April	118.5	8.4	110.1
May	118.2	9.9	108.3
June	114.0	13.0	101.0
Average	**118.9**	**7.4**	**111.5**

* Includes Recycled Water to SBWR distribution system, temporary on-site storage, and Plant irrigation

[1] In accordance with Board Order 91-152
[2] Board Order 98-052

I-A SOUTH BAY WATER RECYCLING

South Bay Water Recycling (SBWR) develops infrastructure and promotes the use of recycled water for landscape irrigation and industrial uses in San José, Santa Clara, and Milpitas. The goal of the program is to protect endangered species habitat at the southern end of San Francisco Bay, and to provide a reliable, drought-proof supply of recycled water for the benefit of the community.

Findings and Accomplishments

Over the past six months, 15 additional landscape irrigation sites have been connected, including streetscapes, business facilities, housing developments, a fire station, and a church. These sites, located along the southern portion of the SBWR system, range in water demand from 1 acre-foot per year (for each streetscape) to as high as 10 acre-feet per year (for Evergreen Valley Church). The addition of these 15 sites brings the total number of SBWR customers to 365.

SBWR has also been forging ahead to deliver recycled water to new markets and neighborhoods. Implementation of the $82.5 million expansion plan is on track following approval in June 2001 by the San José City Council and the San Jose/Santa Clara Treatment Plant Advisory Committee (TPAC). Expansion plans include improvements that will increase reliability of the system in the event of temporary failures in the pipeline or other facilities as well as additional storage and other projects in San José, Santa Clara and Milpitas. The expansion should increase demand for recycled water by an additional 5 mgd. The SBWR service area is shown in Figure 1.

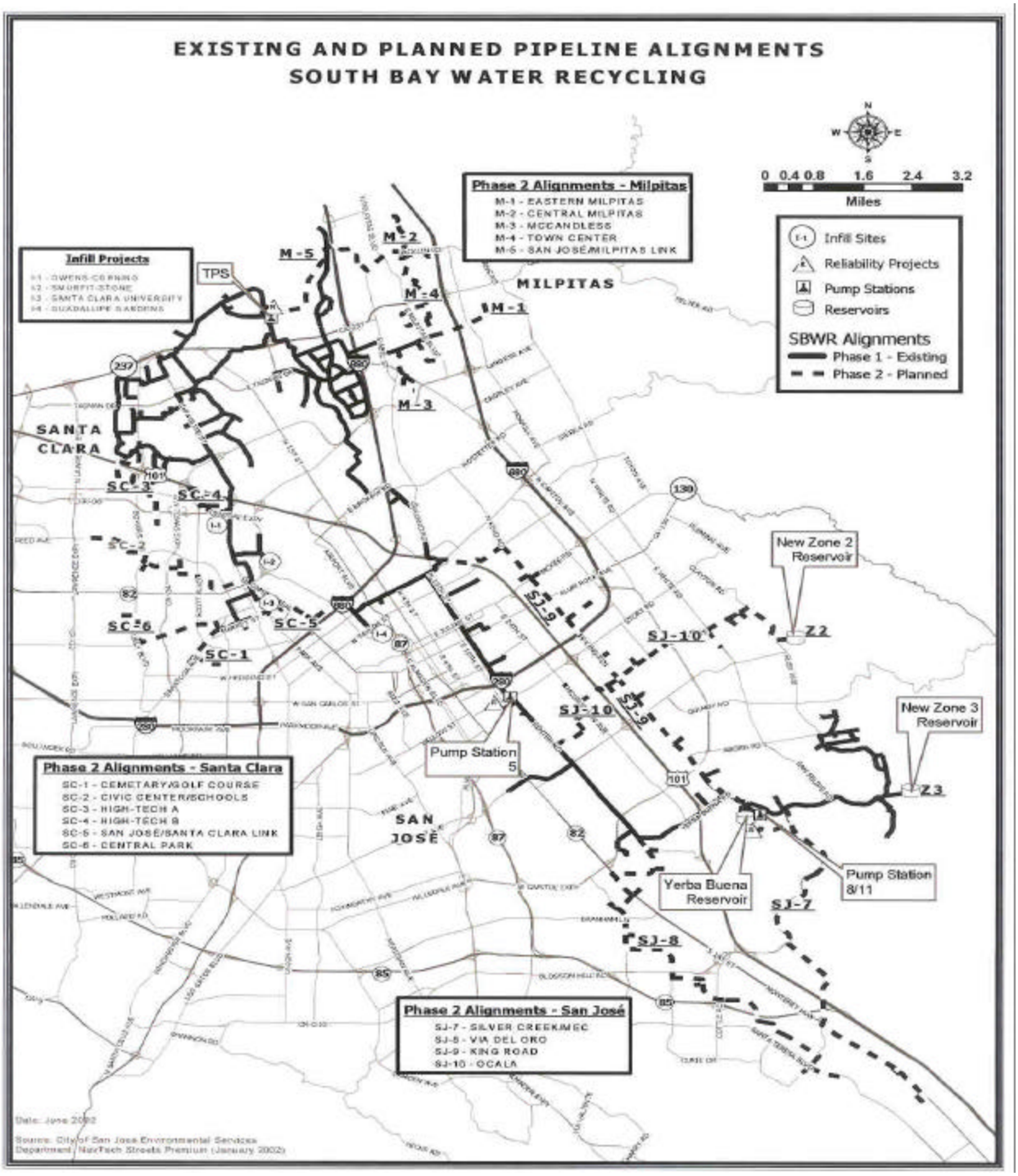
The largest project in the expansion program is the Silver Creek pipeline to the Metcalf Energy Center (MEC) in South San José. The City's Department of Public Works is overseeing design and construction of the 10-mile, 30" pipeline, which has an estimated construction cost of $26 million. The project is being built with funds from the Plant, Calpine, the Santa Clara Valley Water District (Water District) and a $4.6 million grant from the State Water Resources Control Board. The engineers have recently completed the 90% drawings on the project, which is scheduled to begin construction in February 2003 with completion of construction in early 2004. In addition to partnering on this construction program, the Water District plans to take future deliveries of water from this pipeline to serve other customers in Coyote Valley.

A three-mile pipeline extension was recently completed in Santa Clara to deliver water for irrigation to elementary schools, two cemeteries and Santa Clara University. Other future major customers to be connected in Santa Clara include Rivermark properties (landscape irrigation), Smurfit Stone Corporation (industrial process water), and Nortel Networks (dual plumbing).

Three new pipelines in Milpitas will greatly expand the areas where recycled water is available. The first project, in the Hillview-South Milpitas Boulevard area, is nearly complete and will bring recycled water to the Town Center Business Park, including the new Milpitas City Hall. The second pipeline, which is about 50% complete, will serve the area from Hillview Drive northeast to Jacklin Road. This segment will connect the first Milpitas City parks and four schools (Milpitas High

School, Russell Middle School, Pomeroy and Weller Elementary Schools) to the recycled water system. Construction for the third project began in June 2002 and will serve business parks in the McCandless area.

Figure 1: SBWR Service Area



SBWR Collaborative Effort with the Water District

In January 2002, the San José City Council and the Water District Board of Directors approved an agreement to work jointly on both a short-term recycled water project and long-term recycled water partnership. This collaborative effort to develop an institutional framework for long-term ownership, operation, maintenance, and future expansion of SBWR has three primary goals:

1. To most effectively meet the long-term water supply and wastewater discharge needs of the community;
2. To ensure that the construction, maintenance and operation of the Silver Creek pipeline and associated facilities are performed in a manner that protects future water supply and wastewater discharge needs for Santa Clara County while preserving water quality and protecting the underground aquifer; and
3. To develop a long-term plan, regarding funding and administrative responsibilities, for the operations and maintenance of SBWR.

A Technical Advisory Committee (TAC), consisting of representatives from the City and the Water District, water retailers, wastewater dischargers, local business, environmental groups, and farming and landscaping industries, has been established to make recommendations for fulfilling the goals of the collaboration. An Executive Committee, consisting of the City's Director of Environmental Services Department and the Water District's Chief Operating Officer, is responsible for final staff review and preparation of recommendations to be brought before the City Council and the Water District Board for approval.

To date, five monthly TAC meetings have been held. The key issues identified fall into three areas:

1. water quality, treatment, and groundwater management;
2. cost, ownership, and operations and maintenance; and
3. water uses and distribution.

Meetings will continue through the end of the year, with recommendations scheduled to be taken to a joint meeting of the City Council and the Water District Board in January 2003.

Industrial Recycling Customers

SBWR staff has been working with three industrial facilities to discuss the use of recycled water in their processes. Meetings have been held with chemical treatment companies to discuss the treatment necessary for the implementation of recycled water use in both cooling towers and manufacturing processes. Staff also participated in focus groups with industrial customers to better understand their needs and concerns regarding recycled water. During the next six months, designs will be completed for two facilities, with connection anticipated by December 2002.

Advanced Water Treatment Study

SBWR is continuing to plan for a six-month study on two advanced water treatment technologies for salt removal from recycled water. A detailed budget for the study

was prepared and submitted for review. A memo to implement the project was completed in April and is expected to be submitted for approval to the City Council in August. The City anticipates receiving U.S. Bureau of Reclamation funds to cover part of the cost of the study.

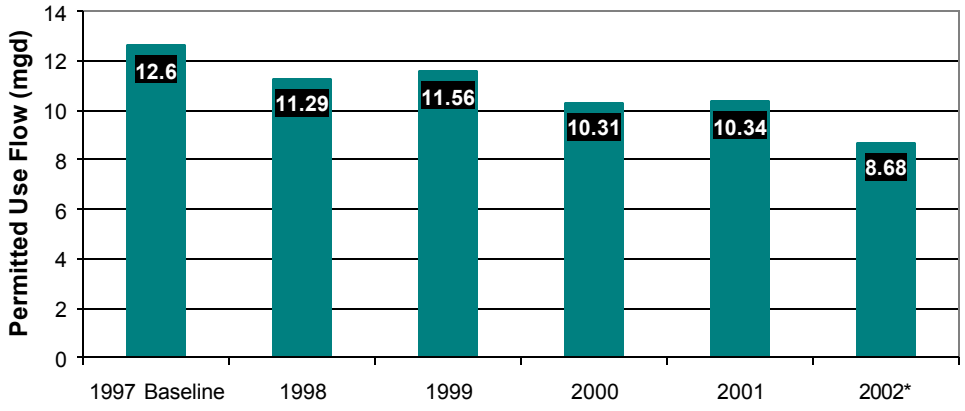
I-B INDUSTRIAL RECYCLE AND REUSE

The objective of Industrial Recycle and Reuse efforts is to ensure that Industrial Users (IUs) in the Plant's service area are reducing the use of potable water, recycling their own wastewater, and/or using recycled water from SBWR in their facilities to the maximum extent practicable.

I-B1 INDUSTRIAL DISCHARGERS

The City continued to work with industrial dischargers to reduce flows to the Plant by offering financial incentives through the Water Efficient Technologies program. Other flow reduction efforts are described below. Figure 2 illustrates the trend in industrial flows based on the average discharge year by year for the last 6 years. The year 2002 number includes the last 6 months of 2001. A number of large dischargers have slowed production or closed during the past year.

Figure 2: Industrial Flows



*Flow for year 2002 represents June 2001 through June 2002

I-B2 FLOW AUDIT STUDY

An annual survey of the Flow Audit Study (FAS) participants that completed their initial FAS in 1999 was performed in June 2002. In fiscal year 2001/2002, two of their projects were completed, with an estimated water savings of 4,000 gallons per day (gpd). Since the July 2000 Flow Audit Study Summary Report, a total of 13 projects have been completed with an estimated water savings of 172,000 gpd. Discussions with companies indicate

a general decrease in efforts to implement identified projects and other flow reduction efforts. Many of the shorter payback and easy to implement projects were completed last year. Other reasons given for the decrease in activity include the sluggish economy leading to a lack of capital for process changes.

In addition, the second round of studies is underway. Ten companies were required to submit FAS reports by the end of February 2002. Eight FAS have been submitted and reviewed. A total of 13 projects were scheduled for implementation as a result of the second round of the FAS, with a total projected flow reduction of 98,000 gpd. Enforcement actions have been taken to compel submittal of the last two FAS reports.

I-B3 INDUSTRIAL WASTEWATER REUSE GUIDELINES

The City has worked for more than three years to develop guidelines for new and existing facilities seeking to reuse their industrial wastewater. The need for such guidelines sprang from concerns from the Building Division of San José's Planning, Building, and Code Enforcement Department (PBCE) regarding the legality and appropriate regulation of reusing industrial waters onsite. Companies have committed to projects they were later unable to complete, because they were denied plumbing permits for the reuse of industrial waters. During the course of conducting research for reuse guidelines, no surrounding jurisdiction or comparably sized cities were found to place such prohibitions on industrial reuse.

Projects involving the reuse of industrial water continue in the Plant's service area, excluding San José. A semiconductor manufacturer in Santa Clara recently completed a project to reuse water from the acid waste neutralization system to their cooling towers, saving more than 16,000 gpd.

San José's guidelines are intended to standardize water reuse requirements, assist City Departments in evaluating reuse projects, and help maintain a level of consistency during the various permitting processes. Executive staff from the two departments involved in the development of the guidelines has met recently, and there is a new commitment to resolving this issue. There is no revised timeline for development of the reuse guidelines.

I-B4 COOLING TOWER GUIDELINES

The City has completed publication of *Guidelines for Managing Water in Cooling Systems (Guidelines)*. The document was reviewed by a wide array of outside entities, including other water agencies, water treatment companies, cooling system contractors, and current SBWR customers.

The *Guidelines* were crafted to promote water efficient practices and process changes in the operation of cooling systems. The core audiences for this publication are industrial and commercial cooling system owners; heating, ventilation, and air-conditioning system operators; and maintenance personnel. The *Guidelines* include information on the basics of cooling

systems operations, how water is used, and using treatment systems to control water quality within a cooling system. The guide examines opportunities for water efficiency in cooling systems, including using less water, reusing water onsite, and replacing potable feedwater with SBWR recycled water.

The final publication is available at www.slowtheflow.com/cooling. It will be distributed to cooling system operators and service providers, and it will be featured at a water efficiency workshop in fall of 2002.

I-C INDOOR WATER CONSERVATION

Indoor water conservation reduces the amount of water use in residential, commercial, and institutional settings and thus, the volume of wastewater ultimately flowing to the Plant and the South Bay. The *Action Plan* had an indoor water conservation goal of 5-8 mgd from fiscal year (FY) 1997/1998 through 2001/2002, with an annual flow reduction goal of not less than 1 mgd. Between January and July of 2002, the City achieved 345,379 gpd in flow savings. During the course of the *Action Plan*, City programs and Water District programs supported by the City have reduced flows by over 5.7 mgd. See Table 2 for a summary of results from July 2001 through June 2002.

Indoor water conservation efforts have focused primarily on the residential sector where approximately 70% of the Plant's flows originate. Toilet use represents the largest indoor use of water. Therefore, the residential programs have emphasized retrofitting to Ultra-Low Flush Toilets (ULFTs), which is considered the most effective indoor residential water conservation measure currently available.

Since 1996, the City has maintained a cost sharing agreement with the Water District through which the agencies financially support each other's water conservation programs and collaborate on related outreach. The agreement has included ULFT retrofit programs, equipment rebates for businesses, horizontal-axis clothes washer rebates, and sub-metering for mobile home parks.

Individual program incentives during the *Action Plan* were dependent upon the community sectors targeted. Programs have included rebates, full service installation, fee-for-service installation, and ULFT distribution events with and without installation incentives. In the business sector, efforts included toilet retrofits through rebates, vouchers, and full service installation, as well as the Water Efficient Technologies (WET) program, which promotes non-ULFT reductions.

As discussed in the January 2001 *Clean Bay Strategy Report*, the flow savings figures (e.g. savings of 30 gpd per ULFT per single family dwelling) reported here are based on the flow savings estimates the City originally used to determine its indoor water conservation goals in the *Action Plan*. The City plans to change to new flow savings estimates (e.g. savings of 18.9 gpd per ULFT per single family dwelling) during the next NPDES permit cycle. Derived from a model developed by the California Urban Water Conservation Council, these new numbers are used by the Water District and will make the City's flow savings estimates more comparable to those used by other water conservation programs statewide.

I-C1 ULFT PROGRAMS

The City has implemented the following ULFT retrofit programs during FY 2001/2002.

I-C1.1 COMMUNITY PARTNERSHIP PROGRAM (CPP)

Extended from fiscal year 2000/2001, this program was carried over through September 30, 2001. CPP targeted "hard-to-reach" communities such as low-income, disabled, and elderly homeowners who may be unlikely to retrofit their toilets on their own. During the extension, 1,465 ULFTs were installed. The program provided free ULFTs with installation, associated hardware, recycling of replaced toilets, and one-year follow-up service for both parts and labor to qualified single-family residents within the Plant service area. The Water District took over administration of this program in FY 2001/2002, offering it countywide. The costs of retrofits within the Plant service area were shared through the cost sharing agreement.

I-C1.2 SMALL MULTI-FAMILY DWELLING PROGRAM (SmMFD)

This program was also extended from FY 2000/2001. Through September of 2001, a total of 1,636 ULFTs were installed under this program. For a fee of $15, the SmMFD program offered free ULFTs with installation, associated hardware, recycling of replaced toilets, and one-year follow-up service for both parts and labor to complexes of 2 to 20 units in size.

I-C1.3 SINGLE-FAMILY DWELLING FEE-FOR-SERVICE PROGRAM (FFS)

The FFS program provided free ULFTs with installation, associated hardware, recycling of replaced toilets, and one-year follow-up service for both parts and labor. Single-family homeowners ineligible for the CPP program could utilize the same services through the FFS program for a fee of $50 per toilet. Also extended from FY 2000/2001, this program installed 891 ULFTs from July through September of 2001 when the program ended.

I-C1.4 SINGLE-FAMILY DWELLING ULFT DISTRIBUTION PROGRAM (SFD DISTRIBUTION)

Through distribution events held approximately every four weeks, the SFD Distribution program distributed new ULFTs and associated hardware to single-family homes free of charge. Participants returned their replaced toilets to the pick-up site two weeks after the distribution event for free recycling. Each ULFT is backed by a one-year manufacturer's warranty on parts and participants have the option to install the toilets themselves or hire a private installer. Under this program, 5,319 ULFTs were distributed during FY 2001/2002.

I-C1.5 SMALL MULTI-FAMILY DWELLING ULFT DISTRIBUTION PROGRAM (SmMFD DISTRIBUTION)

Despite offering free ULFTs, a cash incentive, and free delivery, the SmMFD Distribution program offered this year has proven to be unattractive to the SmMFD audience. Designed to accommodate multi-family residences of 2 to 20 units, this program offered free ULFTs, associated hardware, a one-year manufacturer's warranty on parts, and recycling of the replaced toilet. In addition, a $40 per toilet cash incentive (to offset installation costs) and optional free delivery of the toilets to the installation site was offered. Participants had great flexibility in this program, as it was ongoing rather than event-based like the SFD Distribution program. To reduce free-ridership, participants needed to wait a mandatory seven-day period from application to delivery date. Beginning in late October 2001 and offered through May 2002, the program distributed 350 new ULFTs.

I-C1.6 COMMERCIAL, INDUSTRIAL, AND INSTITUTIONAL ULFT PROGRAM (CII)

The Commercial, Industrial, and Institutional (CII) ULFT program consists of two elements: the Public Facilities Program and the CII Voucher Program.

Public Facilities Retrofit Program

The Public Facilities Retrofit Program, formerly titled "City Facilities Program," retrofits selected municipal facilities with ULFTs. The City has nearly completed the retrofit of its municipal facilities. The remaining non-retrofitted toilets in San José and tributary cities are being replaced during the current phase of the program. Of the seven other tributary cities, Monte Sereno reports having completed all retrofits on their own while the cities of Saratoga, Cupertino, Milpitas and the town of Los Gatos have completed all retrofits utilizing this program. Campbell, Santa Clara, and San José are in the process of completing retrofits under this program. In this reporting period a total of 145 toilets have been retrofitted

CII Voucher Program

The CII Voucher Program offers vouchers of $100 to $200 per toilet to businesses as an incentive to defray the cost of retrofitting to ULFTs. During this fiscal year, 89 ULFTs were retrofitted.

I-C1.7 WATER DISTRICT ULFT PROGRAMS

Through the cost sharing agreement discussed earlier, the City collaborates with the Water District on the following ULFT Programs:

Community Partnership Program (CPP)

Modeled after the City's CPP, the Water District is implementing CPP countywide. During this fiscal year, the District's CPP has installed 3,573 ULFTs in the Plant service area.

Multi-Family Dwelling ULFT Retrofit Program (MFD)

Similar to the City's SmMFD full-service program, the Water District's Multi-Family Dwelling (MFD) ULFT retrofit program offers the same full service installation, associated hardware, recycling of replaced toilets and one-year follow-up service for both parts and labor, but to larger complexes of 21 or more units. The cost to the participant is $15 per toilet. Beginning June 2002, this program's market was expanded to include all MFDs (2 or more units). In FY 2001/2002, 1,084 ULFTs were installed under this program.

Commercial, Industrial, Institutional ULFT Program

The Water District's CII program targets businesses such as restaurants, gas stations, and other high occupant/restroom ratios with a full service installation program. These high-usage CII sectors are not the same ones targeted by the City's CII program. The District has installed 460 ULFTs this fiscal year.

ULFT Distribution Program (Distribution)

The Water District continued its Distribution program through October 2001. The program focused primarily on single-family dwellings, but was available to multi-family dwellings as well. Residents were able to pick up free ULFTs for self-installation and return old toilets for recycling. From July to October 2001, the Water District distributed 5,581 ULFTs to residents of the Plant's service area.

I-C2 WATER EFFICIENT TECHNOLOGIES

Water Efficient Technologies (WET) is a financial incentive program that provides rebates to companies that reduce sanitary sewer discharge by implementing equipment or process changes. The program was established in 1991 and offers one-time rebates based upon the amount of flow saved. The rebate is calculated at a rate of $4 per every hundred cubic feet per year of wastewater reduced, up to 50% of documented project costs with a maximum of $50,000 per project. Depending upon a company's hours of operation, the rebates typically range from $1.50 to $2.00 for every gpd saved. Since the inception of the program over 1.38 mgd of wastewater has been reduced and nearly $1,000,000 in rebates have been awarded.

In FY 2001/2002, three projects were completed with a total flow reduction of 34,527 gpd. Rebates awarded this past fiscal year total $67,362. Promoting WET has been difficult in the past year as many industrial users have scaled back operations and several companies have closed. In addition, capital for equipment changes and process improvements is limited at most companies. As a result, several companies have put flow reduction projects on hold until business conditions improve.

There are several projects currently underway and companies are still planning on implementing flow reduction projects as soon as business

improves. The plan for FY 2002-2003 is to continue to actively market the WET program, put on workshops and develop water conservation guidelines to promote water efficiency. More details on the WET outreach efforts are described in section V-A2 of this report.

I-C3 OTHER WATER CONSERVATION PROGRAMS

I-C3.1 HORIZONTAL AXIS WASHER REBATE PROGRAM

Since 1998, the City has co-funded the Water District's Horizontal-Axis (H-Axis) Washer Rebate Program. Intermittently combined with Pacific Gas & Electric's (PG&E) H-Axis Washer Rebate Program, it offers customers a rebate for the purchase of water saving, high efficiency, *Energy Star*® rated residential clothes washers. The City contributes $50 towards the rebate total of $175 per H-Axis washer. 4,261 rebates were awarded during this fiscal year.

I-C3.2 COMMERCIAL WASHER REBATE PROGRAM

The Water District administers a Commercial Washer Rebate Program to provide rebates of $125 to $450 to commercial laundromats, nursing facilities, and multi-family residential buildings with common-area laundry rooms for the purchase and installation of water saving, commercial grade H-Axis washing machines. The City helps fund this rebate by reimbursing the Water District $125 per replaced washer for commercial installations and $75 per washer for multi-family common area laundry installations. Rebate amounts are determined by type of use and projected water savings. In addition, PG&E and the City of Santa Clara reimburse the Water District $100 for customers in their service areas. In this fiscal year, 278 rebates were awarded.

I-C3.3 WATER-WISE HOUSE CALLS

In conjunction with local water retailers, the Water District performs residential water surveys called "Water-Wise House Calls" for single- and multi-family homes as part of their residential conservation program. Measurement of flow rates, leak detection, and distribution of low flow devices are conducted as well as the replacement of leaking toilet flappers. The 2001/2002 program began in August 2001 and has increased its marketing efforts over previous years. The City contributes $30 for each survey. 1,167 surveys have been completed in FY 2001/2002.

I-C3.4 SUBMETERING PROGRAM

The Water District's Submetering Program for mobile homes offers rebates to mobile home customers for the installation of meters that allow end users of water to be billed directly for the volume of water they use, potentially reducing water consumption by up to 25%. The City contributes to this

program by reimbursing the Water District $28 per meter. 294 submeters were installed during FY 2001/2002.

Table 2: Water Conservation Programs and Flow Reduction FY 2001/2002

Program	# Units or Applications			Flow Reduction (gpd)		
	July through December 2001	January through June 2002	Fiscal Year 2001/2002 Total	July through December 2001	January through June 2002	Fiscal Year 2001/2002 Total
ULFT Programs						
CPP	1,465	-	1,465	43,950	-	43,950
Small MFD	1,636	-	1,636	114,520	-	114,520
Fee-for-Service	891	-	891	26,730	-	26,730
SFD Distribution	2,503	2,816	5,319	75,090	84,480	159,570
SmMFD Distrib.	20	330	350	1,400	23,100	24,500
Public Facilities (City Facilities)	-	145	145	-	6,960	6,960
CII Vouchers	19	70	89	912	3,360	4,272
Water District MFD	485	599	1,084	26,675	32,945	59,620
Water District CPP	-	3,573	3,573	-	107,190	107,190
Water District CII	126	334	460	6,048	16,032	22,080
Water District Distribution	5581		5581	175,670		175,670
Non-ULFT Programs						
WET	0	3	3	0	34,528	34,528
H-Axis Washer Rebates	2,116	2,145	4,261	30,894	31,317	62,211
Commercial Washer Rebates	181	97	278	9,902	5,467	15,369
Indoor Water Conservation Total						
2001/2002 Total				**511,791**	**345,379**	**857,170**

Next Steps

The City will utilize fiscal year 2002/2003 to explore new indoor water conservation opportunities, pilot new program ideas, and continue to implement its ULFT retrofit programs to residents and businesses of the Tributary cities. Programs include the following:

- Providing water-efficient spray nozzles for restaurants,

- Testing potential improvements in the cost-effectiveness and/or participation in the SFD ULFT Distribution program by bringing more elements of that program "in-house,"
- Cost-sharing on a residential water softener replacement rebate program,
- Exploring water conservation ordinances in support of the City's water conservation goals,
- Targeting dental offices, hospitals, and other specialized markets for water efficient equipment retrofits: and,
- Providing a "full-service" ULFT installation program to the remaining unretrofitted multi-family dwellings (this program will also include a distribution element, for those who have installation capabilities of their own).

After fiscal year 2002-2003, it is anticipated that WEP will continue the cost-sharing partnership with the Water District. The City will continue ULFT programs and the pursuit of more specialized indoor water conservation opportunities. The commercial sector will become a more cost-effective target as increased penetration of ULFT retrofits results in decreasing participation in residential ULFT programs.

Given increasing saturation of the ULFT markets, it is anticipated that additional incentives may need to be offered to potential participants in order to encourage them to participate. New water-conserving technologies may be introduced, which may encourage people to participate as well.

I-D GROUNDWATER INFILTRATION REDUCTION

To reduce extraneous flows into the sanitary sewer system and ultimately through the Plant and into the South Bay, the City continues to locate and quantify sources of dry weather groundwater infiltration (GWI) into tributary area sewers and develop a system for rehabilitating the sewer system to reduce GWI.

Currently there are two active GWI correction projects.

Reconstruction Of Manhole On Santa Teresa Boulevard At Bailey Avenue

This project provides the replacement of an existing leaky junction box that was identified to contribute 1 to 2 MGD of GWI. This junction box reconstruction which is part of a sewer tunnel project, was delayed but re-activated in June 2002. Estimated completion date will be in late 2002.

Redmond Avenue Parallel Sewer Rehabilitation

This project involves cured-in-place liners of 3,500 lineal feet (LF) of 15-inch, 2,400 LF of 24-inch and 1,150 LF of 27-inch trunks, rehabilitation of 25 manholes and a number of laterals within the right of way. These trunk sewers, located between Camden Avenue and Cloverhill Drive, were identified to contribute up to 2 MGD of GWI. The project is scheduled to start in August 2002 with an estimated completion date in summer 2003.

The GWI reduction program has financed and committed a total of approximately $3.5 million in three construction projects (one finished project, one near completion, and one fast track project) and approximately $553,000 in reimbursements for infiltration studies conducted by the City and its tributary agencies. The anticipated result of these investments to date is an estimated 4.5 mgd reduction in GWI.

I-E MARSH MITIGATION

The City's contribution towards the purchase of the Baumberg Tract, the Moseley Tract, and Bair Island has made it possible for the City to fulfill its marsh mitigation requirement.

I-E1 BAUMBERG TRACT

A final update for this element was included in the July 1999 *CBS Report.*

I-E2 MARSH MITIGATION PROJECT - MOSELEY TRACT

Due to difficulties addressing joint use issues with Caltrans, the City is currently assessing salt marsh mitigation alternatives for the Moseley Tract.

I-E3 BAIR ISLAND

A final update for this element was included in the July 1999 *CBS Report.*

II POLLUTANT REDUCTION

To reduce pollutants to the South Bay, the City uses a multi-faceted, continuous improvement approach involving infrastructure optimization, pretreatment programs, partnerships with industry, and special studies. The goal is to ensure that programs are efficient, cost-effective, and based on sound science.

II-A SJ/SC WATER POLLUTION CONTROL PLANT

II-A1 OPERATIONS AND MAINTENANCE MANUAL

A final update was included in the July 2000 *CBS Report.*

II-A2 HEADWORKS LOADING ANALYSIS WORKPLAN

A final update was included in the July 2000 *CBS Report.*

II-A3 SELECTED ORGANICS SOURCE INVESTIGATION

A final update was included in the July 2000 *CBS Report.*

II-A4 TRUNKLINE AND UPSTREAM MONITORING

From 1995 through 2001, the City maintained a Trunkline and Upstream Monitoring Program. The intent of the program was to focus on tracing pollutants upstream from the Plant. The specific goals were to:

- Identify the sources of pollutants entering the Plant to specific trunklines (or cities) or origin
- Attempt to identify whether pollutants enter the Plant in a consistent manner or in slug loads
- Trace the pollutants by continually moving upstream to their sources.

Five sampling sites were used to characterize the flows into the Plant. Each site was sampled using 24-hour composites, which were analyzed for total copper, dissolved copper, total nickel, and dissolved nickel.

During the program, a pilot study was developed to run parallel to the Trunkline Program. The pilot used 3 trunklines to represent flows from Milpitas, San José, and Santa Clara. 8-hour composites were taken twice daily for four days using an 8-bottle sampler. The two daily samples were taken to characterize day and night loadings. In contrast to the two constituents analyzed for the original Trunkline Program, the pilot analyzed 18 elements.

The Trunkline program was implemented for more than five years and has addressed its original goals. With the data, pollutant loading trends for copper

and nickel can be observed, both in correlation to the overall influent to the Plant and for individual trunklines. The program illustrated the pattern in which pollutants flow to the Plant. Spikes in the data reveal that there are slug loads of pollutants coming to the Plant, but they are not frequent or extreme enough to significantly affect the average trends. Program data was used to identify trunklines where pollutant loading trended upward. Upstream monitoring was then used to further isolate pollutant sources. For the most part, however, the Trunkline program played only a small part in identifying non-compliant dischargers. A site-specific surveillance program is necessary to identify such dischargers, and there are effective strategies outside the Trunkline program for identifying surveillance candidates.

The pilot study was implemented over the course of more than six months. The analysis revealed that several elements were below detection limit (antimony, arsenic, beryllium, cadmium, chromium, cobalt, lead, molybdenum, selenium, silver, thallium, and vanadium). Others were found to have a consistently higher concentration during the day - namely copper, zinc, and barium. This could indicate a common discharge source or type that is more prevalent during the day.

Based on the program findings and the completion of the program goals, the Trunkline program has been concluded. A more detailed overview of the program and its findings is included in Appendix B. Data from the program stands as a five- year baseline for copper and nickel loading. The pilot results provide a pollutant profile for a wider array of constituents. Either could be used in conjunction with a short term monitoring study to identify increases in loading from a particular area; such analysis would be driven by concerns about a specific constituent. The Surveillance program continues as a means of identifying non-compliant dischargers. Data from the Trunkline program will be among the criteria to prioritize the workplan for surveillance efforts.

II-A5 PLANT STUDIES

A final update was included in the January 2000 *CBS Report.*

II-B THE PRETREATMENT PROGRAM

The City's Pretreatment Program regulates industrial dischargers and other critical users and encourages pollutant and flow reduction. The program is reviewing and rewriting its procedures to assist in increasing efficiency and consistency.

II-B1 INDUSTRIAL WASTEWATER DISCHARGE MUNICIPAL CODE

There were no changes to the municipal code for industrial wastewater discharge during this reporting period. The industrial wastewater discharge municipal code will be reviewed in its entirety during the next year. This review will include fees charged for industrial wastewater discharge permits.

II-B2 DEVELOPMENT APPLICATION REVIEW

The Development Application Review Group meets weekly to review proposed developments within the City. The group provides written comments to the PBCE, the department responsible for administering the review and approval of development in the City. This review is frequently ESD's first opportunity to inform developers of discharge and service requirements that should be addressed in the design phase. Some of the design considerations include wastewater discharge reduction, pollutant minimization, onsite reuse and use of recycled water. This is also an opportunity to inform the developer of other non-required conservation measures such as electronic faucets and water efficient laundries and washing machines.

For this reporting period (January 1 to June 30, 2002), ESD reviewed and commented on development applications as shown in Table 3.

Table 3: Development Application Review Activity Summary

Number of development applications reviewed for the following subjects:	
Recycled Water	28
Water Efficiency	46
Source Control	35
Number of Environmental Impact Reports reviewed	4

In the first part of 2002, the development review group began to have meetings with PBCE to discuss the implementation of the Green Building Policy, which goes into effect on July 1, 2002. The Policy will initially apply only to City-owned new development projects. San José City Council has declared Green Building a priority, and the policy is expected to eventually apply to all new developments.

The City's transition to a web-based development review process and tracking system was not completed this fiscal year. After the City-wide system is in place, ESD plans to start working on a tracking implementation system to follow-up on comments sent to developers.

II-B3 INDUSTRIAL DISCHARGER RESEARCH STUDIES

Final report included in July 2000 *CBS Report*.

II-B4 INDUSTRIAL POLLUTANT LOADING STATUS

Tables 5 through 8 show the permitted industrial flows, copper loading, and nickel loading to the Plant for the past five years. Figures 3 through 6 also illustrate the past five-year trends in industrial flow, copper loading, and nickel loading to the Plant.

Findings and Accomplishments

Permitted industrial flow, copper and nickel loading continue to be well below the 1997 baseline levels shown in Table 4.

Table 4: 1997 Baseline Levels

Permitted Industrial Flow (mgd)	Total Copper (lbs/day)	Total Nickel (lbs/day)
12.60	8.79	6.36

Manufacturing in our area has been impacted by a slowed economy. Several significant industrial dischargers, both in terms of flow and copper loading have either closed or are in the process of closing their facilities.

The Mass Audit Study Protocol and Reasonable Control Measures Plan have been updated and the latest versions are available on the ESD website under "Publications."

Next Steps

Staff will be reviewing and analyzing pollution prevention efforts used in the past 10 years and will develop the pollution prevention strategy for the next 5-year NPDES permit cycle based on current pollutants of concern. A summary of the pollution prevention programs will be included in the January 2003 report.

The City will continue to monitor copper and nickel pollutant loading from IUs to maintain levels below the 1997 baseline throughout the duration of our current NPDES permit. For details of flow reduction measures, refer to Section I-B of this report.

Table 5: Process Flow from Different Classes of Permitted Dischargers

Discharger	Flow, mgd				
	1998	1999	2000	2001	2002
Group 1	2.29	2.53	2.57	2.15	1.51
Group 2	8.97	8.99	7.69	8.08	7.08
Group 3	0.03	0.04	0.05	0.15	0.09
Total	**11.29**	**11.56**	**10.31**	**10.38**	**8.68**

2002 Flows are based on a rolling 12 months, June 2001-June 2002. All other flows are calendar years.

Figure 3: Permitted Dischargers Flow

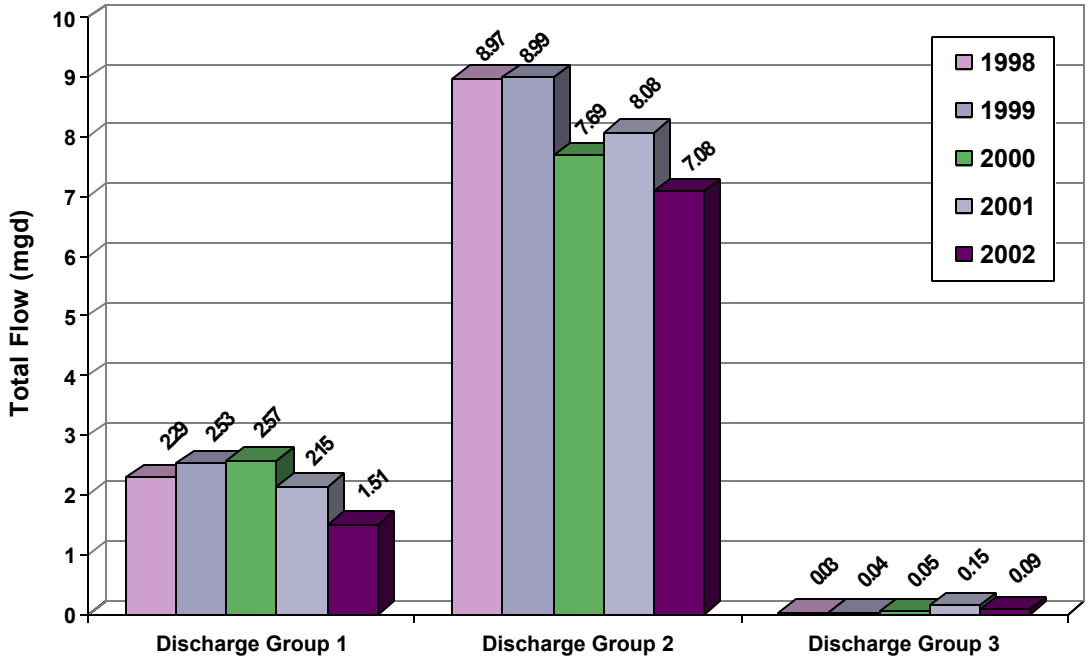


Table 6: Copper Loading from Different Classes of Permitted Dischargers

Discharger	Copper, lbs/day				
	1998	1999	2000	2001	2002
Group 1	4.27	6.48	5.14	2.95	1.85
Group 2	3.51	2.10	2.42	2.51	2.15
Group 3	0.02	0.03	0.02	0.11	0.09
Total	**7.80**	**8.61**	**7.58**	**5.57**	**4.09**

2002 data is based on a rolling 12 months, June 2001-June 2002. All other data is based on calendar year.

Figure 4: Daily Total Industrial Copper Loading

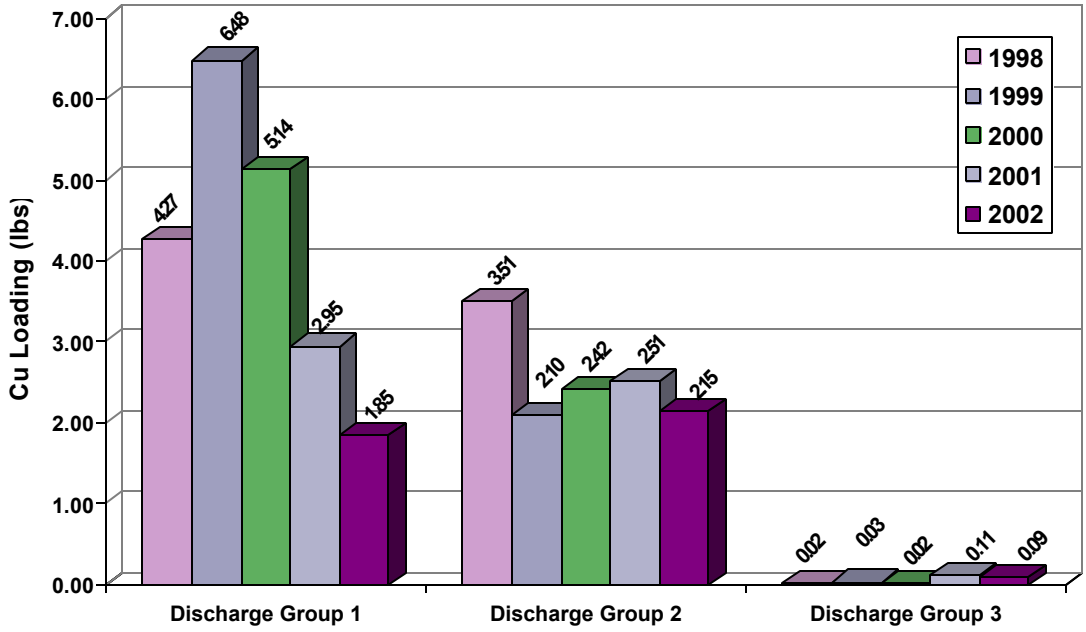


Table 7: Nickel Loading from Different Classes of Permitted Dischargers

Discharger	Nickel, lbs/day				
	1998	**1999**	**2000**	**2001**	**2002**
Group 1	1.47	1.63	1.36	1.07	0.57
Group 2	3.48	3.20	2.98	2.54	2.49
Group 3	0.01	0.02	0.01	0.05	0.02
Total	**4.96**	**4.85**	**4.35**	**3.66**	**3.08**

2002 data is based on a rolling 12 months, June 2001-June 2002. All other data is based on calendar year.

Figure 5: Daily Total Industrial Nickel Loading

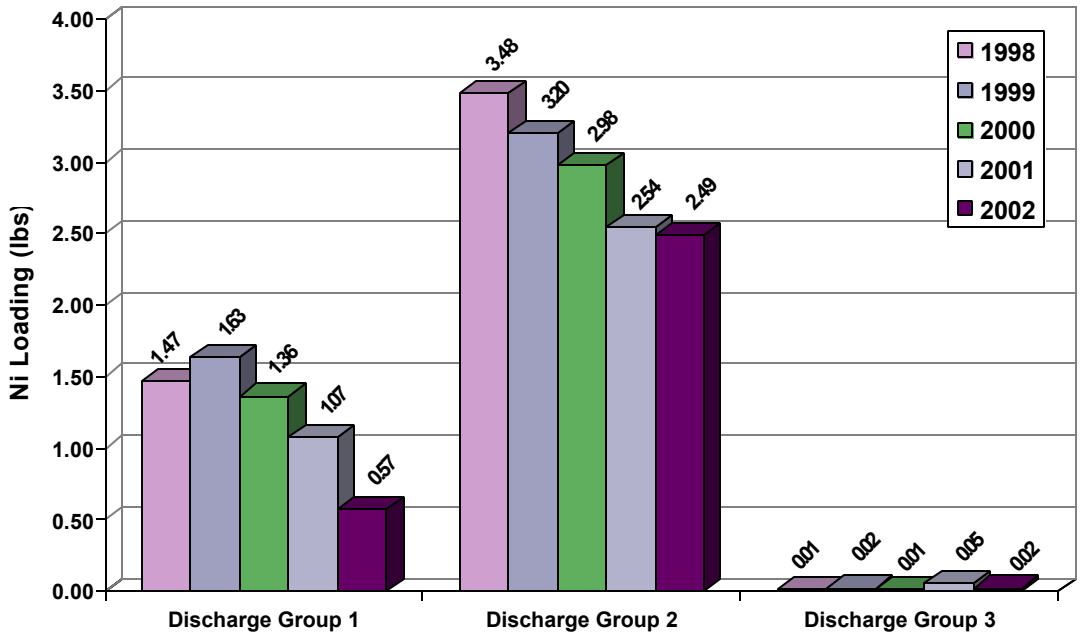
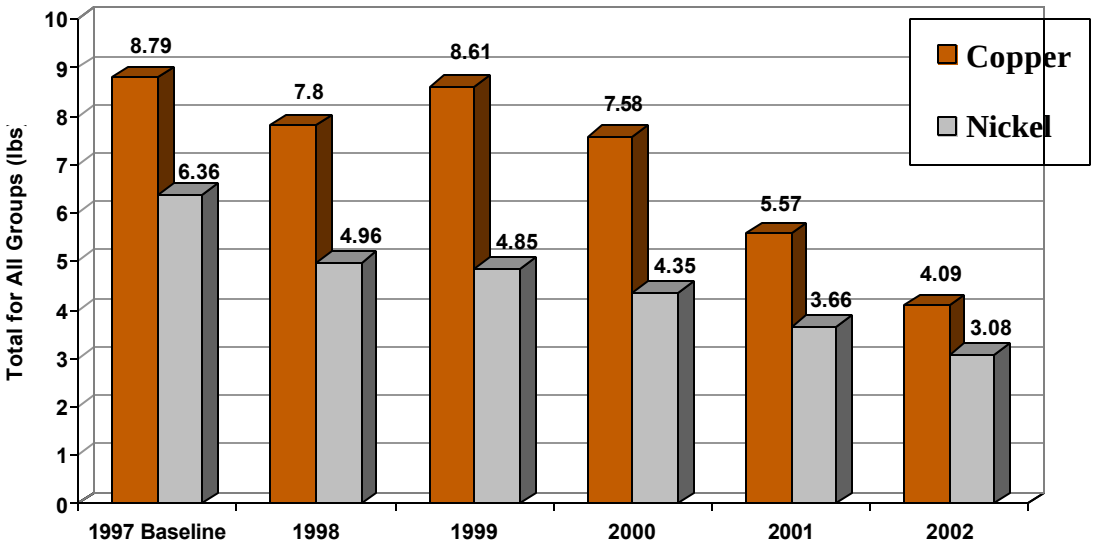


Figure 6: Daily Industrial Total Copper and Nickel Loading



2002 data is based on a rolling 12 months, June 2001-June 2002. All other data is based on calendar year.

Table 8: Permitted Industrial Dischargers Copper and Nickel Loading and Flow to the Sanitary Sewer

Parameter	Permitted Industrial Loading and Flow				
	1997	1998	1999	2000	2001[3]
Copper, lbs/day	8.79	7.80	8.61	7.58	5.57
Nickel, lbs/day	6.36	4.96	4.85	4.35	3.66
Flow, MGD	12.60	11.29	11.56	10.31	10.38

[3] All 2001 numbers are from January 1, 2001 to December 31, 2001. Also includes newly permitted non-industrial facilities.

III RESEARCH AND SPECIAL STUDIES

The City regularly works with other cities and agencies to perform special studies to better understand the impact of the effluent from the Plant on the South Bay. Past studies include a Special Effluent Study for Certain Organic Pollutants, a Mercury Total Maximum Daily Load (TMDL), Trace Level Monitoring in the South Bay, Calculation of TMDL for Copper and Nickel in South San Francisco Bay, and a Saltwater Marsh Conversion Study.

III-A SPECIAL EFFLUENT STUDY FOR CERTAIN ORGANIC POLLUTANTS

A final update was included in the July 2001 *CBS Report*.

III-B MERCURY TMDL PARTICIPATION PLAN

The San Francisco Bay Estuary is listed as being impaired by mercury and a TMDL is currently under development. Until the TMDL is developed, the Regional Board has determined that mercury loading into San Francisco Bay from individual point sources should be held at current levels. In January 2000 municipal and industrial dischargers implemented ultra-clean sampling methods for mercury to generate requisite concentration information to aid TMDL development.

Findings and Accomplishments

For this reporting period, Plant effluent monitoring for total mercury averaged 3 parts per trillion (ppt).

Next Steps

The City will continue its participation in the Clean Estuary Partnership (a collaboration between POTWs, urban storm water management agencies, and the Regional Board), which will finalize the Mercury TMDL later this calendar year. In addition to this Bay-wide effort, City staff will continue participation in the WMI's Watershed Assessment Subgroup, which serves as the stakeholder forum for the Guadalupe Watershed Mercury TMDL effort.

III-C TRACE LEVEL MONITORING IN SOUTH SAN FRANCISCO BAY

The City continues to monitor water quality parameters including dissolved copper and nickel and total mercury in the South Bay. Copper and nickel are sampled monthly, and mercury quarterly. The 12 sampling sites represent deep channel, mid-channel, shallow mudflats, and areas of significant stream influence. Figure 7 shows sampling locations for this project. The study provides fundamental information describing the spatial and temporal trends in water quality to enable a better understanding of beneficial use impairments in the South Bay. This

monitoring information also represents the basis for the triggers in the *Copper and Nickel Action Plans* and their associated pollution control activities.

Findings and Accomplishments

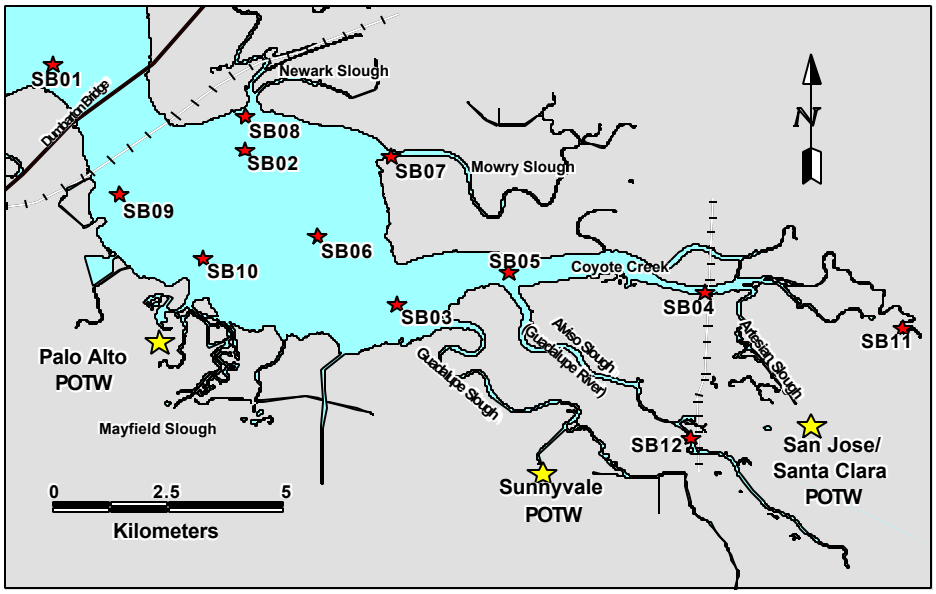
The *Copper and Nickel Action Plans* resulting from the South Bay Copper/Nickel TMDL process promote continued monthly monitoring of these ambient water stations, using dissolved metal concentration as an indicator for pollution increases in the South Bay. Revised copies of the *Copper and Nickel Action Plans* are included in this report in Appendix C.

Monitoring thus far revealed that ambient total metal concentrations in the extreme South Bay decrease along a northward gradient. Ambient dry weather dissolved copper and nickel levels remained well below the phase I Action Plan trigger levels of 4.0 and 6.0 parts per billion (ppb), respectively. Total mercury levels were highest in conjunction with suspended sediment, particularly near Calaveras Point in the southern end of the South Bay. The mercury monitoring results may be useful in further refining the mercury TMDL for the South Bay and may provide data that can be used in the Guadalupé Watershed TMDL effort.

Next Steps

This water quality monitoring program will continue throughout 2002.

Figure 7: Sampling Locations for Trace Level Monitoring



III-D CALCULATION OF TMDL FOR COPPER AND NICKEL IN SOUTH SAN FRANCISCO BAY

Following the October 2000 NDPES POTW permit amendments, the WMI's Bay Monitoring and Modeling (BMM) Subgroup began implementing a detailed work plan to develop site-specific objectives (SSO) for both copper and nickel and to prepare the requisite Basin Plan Amendment language. Efforts have been focused on preparing of the regulatory documentation, including the Basin Plan staff report and the specific Basin Plan Amendment language.

Findings and Accomplishments

On May 22, 2002 the Regional Board adopted proposed amendments to the Basin Plan that:

- Established site-specific chronic and acute water quality objectives for dissolved concentrations of copper and nickel in the South Bay;
- Detailed an implementation plan to achieve and support these site-specific water quality objectives; and
- Revised portions of Chapter 4 (Implementation Plan) of the Basin Plan pertaining to Lower South San Francisco Bay.

Next Steps

City staff will continue to provide technical support as the adopted Basin Plan amendments are reviewed by the State Water Resources Board, the California Office of Administrative Law, and ultimately, the Environmental Protection Agency (U.S. EPA). With the adoption of the Basin Plan amendment package, the City has fulfilled its NPDES permit requirements under Provision 7 - Special Studies Supporting SSO and TMDL Development.

III-E SOUTH BAY MARSH HABITAT STUDY

The City has developed a long-term monitoring program designed to detect changes in the habitat types within the coastal marshes of South San Francisco Bay in the interest of better understanding the role of freshwater discharge on tidal marsh habitat. A baseline comparative study of the South Bay plant associations was performed in 1989, with subsequent monitoring and mapping studies in 1991 and then annually from 1994 to 2001. The last five years mapping have included the addition of Alviso Slough as a Reference Site.

The Main Study Area encompasses 1,650 acres of freshwater, brackish and salt marsh habitats in the Coyote Creek and adjacent sloughs, while the 267-acre Reference Area represents the tidal zone of the Guadalupe River. This 13-year study period has seen significant fluctuations in local precipitation, hydrological flows from the Sacramento delta and local streams to the South Bay, and salinity concentrations and tidal elevations of the entire Bay. Two key trends have emerged in the tidal marsh vegetation:

1. new marsh formation, apparently due to sediment accretion and subsequent vegetation colonization; and
2. comparable salt marsh conversion to other habitat types in the Reference Area of Alviso Slough and the Main Study Area.

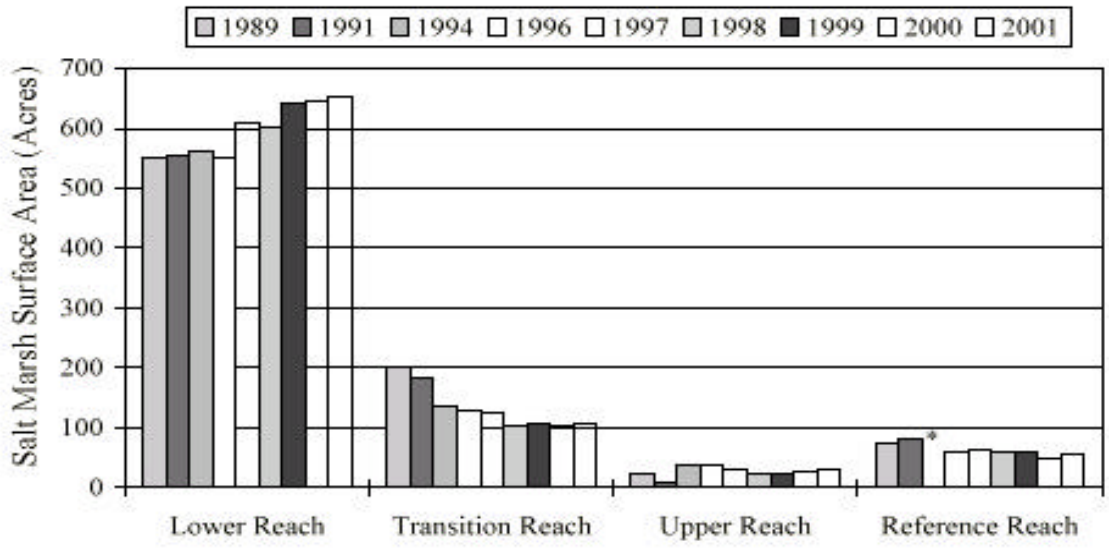
Proportionate changes in overall marsh acreage and marsh types have occurred in both the Main Study Area and Reference Area. This may indicate that large-scale, regional environmental changes are controlling the observed conversion of pickleweed/cordgrass-dominated salt marsh to alkali bulrush-dominated brackish marsh in the Main Study Area.

Since 1999, the aerial photographs were processed using digital orthorectification. This state-of-the-art process enhances the accuracy of the mapping by removing distortion, and allows for precise overlaying of other data layers. In addition, the City began collecting physical data in August 1999, including continuous monitoring of tidal elevations and salinity in the tidal channels, as well as porewater salinity, bulk density, and pH of the soil in the root zones of marsh vegetation in the Main Study and Reference Areas. The analysis of this data and other freshwater input variables aids in determining the relative influences of environmental and anthropogenic factors affecting changes in marsh type.

Findings

Salt Marsh: The majority of salt marsh habitat conversion during the past ten years is indicated by losses of pickleweed and cordgrass dominated associations and increases in alkali bulrush and peppergrass associations. As shown in Figure 8, salt marsh area decreased in the Transition Reach from 1989 to 2001, primarily from 1989 to 1994. Conversely, salt marsh area increased in the Lower Reach from 1989 to 2001. The majority of this increase occurred after 1995 due to new marsh

Figure 8: Salt Marsh Acreage Comparison From 1989 to 2001 by Reach

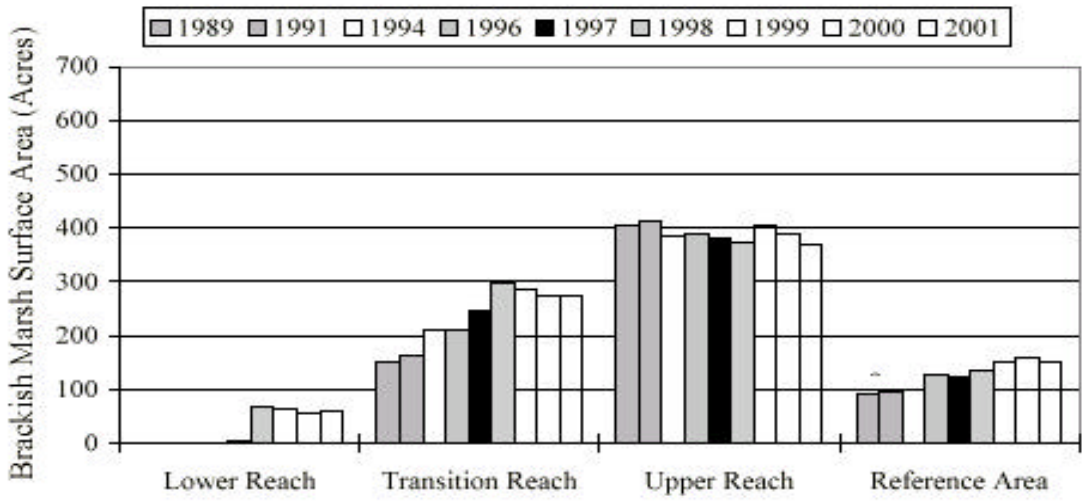


***No data collected in 1994 within Reference Area.**

formation along the north side of Coyote Creek. A relatively large conversion of salt marsh has occurred in the Reference Area between 1989 and 2001. Approximately 27% (20.5 acres), comprised mostly of losses in pickleweed and cordgrass dominated categories, has been lost during the study period. As with the Transition area, the majority of these losses occurred early in the study period between 1991 and 1996.

Brackish and Freshwater Marsh: Overall large gains in brackish marsh area have occurred in both the Main Study Area and in the Reference Area between 1989 and 2001 (Figure 9). During this period, brackish marsh increased by 146 acres (26% increase) and 58 acres (63% increase) in the Main Study and Reference Areas, respectively. This is due mostly to marsh conversion (from salt to brackish) in the Reference Area. In the Main Study Area, gains in brackish marsh have occurred in the Lower and Transition Reaches while brackish marsh has decreased slightly in the Upper Reach.

Figure 9: Brackish Marsh Acreage Comparison From 1989 to 1999 by Reach

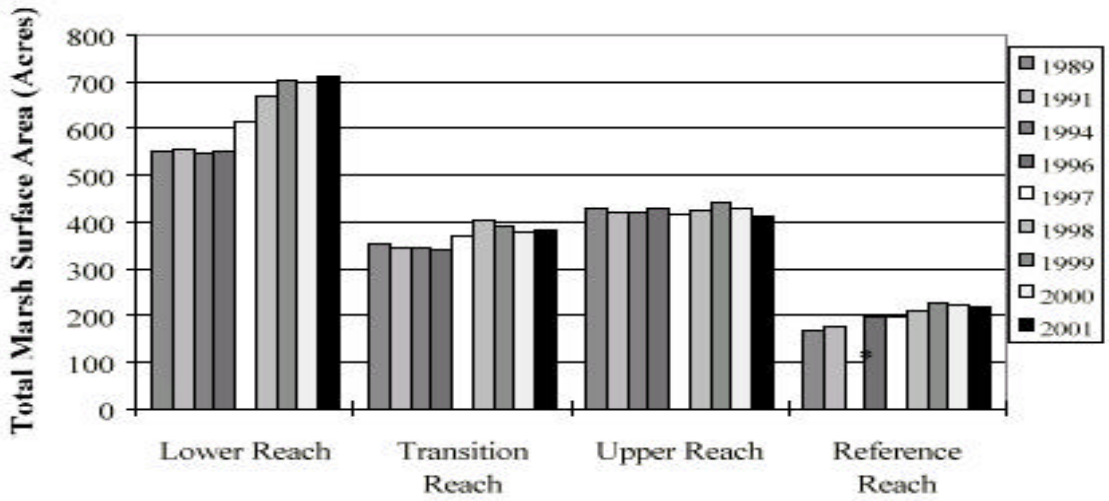


*No data collected in 1994 within Reference Area.

The Reference Area exhibited a steady trend of increasing brackish marsh area from 1991 through 2000 but a slight decrease from 2000 to 2001. Increases in freshwater marsh have only occurred in the Upper Reach and Reference Reach.

New Marsh Formation: The surface area of marsh habitat has increased by 159.9 acres (12%) between 1989 and 2001 in the Main Study Area (Figure 10). During the same period, 48.5 acres (29%) of new marsh were formed in the Reference Area. Marsh area remained relatively stable from 1989 to 1996 in the Main Study Area. The majority of new marsh habitat has occurred in the Lower Reach (155.4 acres) between 1996 and 2001 and between 1996 and 1998 in the Transition Reach (23.7 acres). A trend of increasing marsh area is apparent from 1989 to 2001 in the Reference Area, with a decline between 1999 and 2001.

Figure 10: Total Marsh Acreage Comparison From 1989 to 1999 by Reach



*** No Data collected in 1994 within Reference Reach.**

The majority of new marsh formation continues to occur at Calaveras Point located at the north mouth of Coyote Creek. It appears that substantial sedimentation along Coyote Creek has raised the elevations to a level that will support the growth of emergent plant species. This newly formed mud flat continues to be colonized by alkali bulrush and a mixture of cordgrass and annual pickleweed (*Salicornia europaea*).

Comparison between years has shown that the surface area of total marsh and the distribution of marsh habitat types within the South Bay marshes are dynamic. The rate of salt marsh conversion in the Reference Area was substantially higher than the rate of conversion in the Main Study Area between 1989 and 2001, indicating that marsh conversion occurs throughout the South Bay, not just in marshes directly affected by the Plant discharge. This also indicates that much of the conversion of salt marsh habitats within the South Bay area is likely driven by large-scale influences that are affecting the entire system. This includes both environmental (e.g. precipitation and delta outflows) and anthropogenic factors (e.g. Plant discharge and dry-weather releases from local reservoirs).

There has been little net change in the total salt marsh area and in the proportion of salt marsh within the Main Study Area from 1989 to 1999. This apparent stability occurred because salt marsh habitat from conversion to other habitat types was balanced by increases in salt marsh habitat via new marsh formation. The entire study area has become less saline during the past ten years. Much of the change has occurred since 1996, which was the first year that freshwater marsh habitats were mapped within the Main Study Area and the Reference Area.

The complete *Marsh Plant Associations of South San Francisco Bay: 2001 Comparative Study* is available on the Environmental Services Department's (ESD's) web site (http://www.ci.san-jose.ca.us/esd) under "Publications and Research."

III-F STREAM FLOW AUGMENTATION PILOT PROJECT

This project is currently on hold pending resolution of studies to evaluate potential impacts to groundwater aquifers and other collection of baseline data.

III-G WETLANDS CREATION PILOT PROJECT

A Wetlands Creation Pilot project using recycled water was to be evaluated as one of the environmental enhancement projects under the revised South Bay Action Plan. The primary benefits of a wetland creation pilot project on or near Plant lands include aesthetic value, habitat enhancement, and public education. The conceptual design of this pilot project was to be a part of the development of the Streamflow Augmentation Pilot(s), the implementation of which is on hold as noted above. A stakeholder process will be used to further develop these pilot projects if they are deemed feasible in the future.

III-H AVIAN BOTULISM

Annually, from June to November, the City monitors Artesian Slough/Mallard Slough, Coyote Creek, and Alviso Slough for the presence of sick and deceased birds under a contract with the San Francisco Bay Bird Observatory. The monitoring consists of prompt collection and treatment of ill birds in conjunction with collection and sanitary disposal of deceased animals in the surveyed area, which is the key to controlling avian disease, including avian botulism. This monitoring is part of a long-term program begun in 1982 and is an element of the current NPDES permit.

The creeks, sloughs, and rivers feeding the South Bay serve as habitat for many species of egrets, herons, ducks, wading birds, migratory birds, and seagulls. Certain environmental factors that foster the spread of the botulism bacteria are: shallow warm water, fluctuating water levels, high ambient temperatures, presence of vertebrate and invertebrate carcasses, stagnant water, or rotting vegetation. The volume of water that enters Artesian and Mallard Sloughs from the Plant flushes these Sloughs.

Findings and Accomplishments

In the spring of 2002 the City began entering the results of the San Jose/Santa Clara Avian Botulism surveys into a Geographic Information System to study patterns of outbreaks and for a better understanding of causal relationships.

Next Steps

The City will continue to submit annual reports of avian botulism surveys to the Regional Board, the California Department of Fish and Game, and the US Fish and Wildlife Service as part of the Plant's NPDES permit. Annual reports are due to the Regional Board in February each year. The February 2002 report is included as Appendix D.

III-I LOCAL EFFECTS MONITORING

A final update was included in the July 1999 *CBS Report.*

III-J BIOASSESSMENT OF SOUTH BAY

The purpose of conducting bioassessment studies in the lower South Bay is to cooperatively develop, with academic and regulatory communities, bioassessment techniques that could lead to site-specific environmental indicators for the South Bay.

In November 2000, the Regional Board's Executive Officer approved the City's bioassessment study, and required implementation pursuant to the schedule contained therein (see January 2001 *CBS Report* for more details). The City worked with marine scientists from San Francisco State University's Romberg Tiburon Center for Environmental Studies to implement the City's approved bioassessment program.

Findings and Accomplishments

Since January 2002, two quarterly sampling events have occurred. In February and May 2002, quarterly sampling events were conducted to assess plankton community composition and conventional water chemistry in the South Bay. Acquisition of historical data continues. This data is being used in a thorough quantitative analysis of plankton composition and abundance, and possible covariance with water quality conditions. A six-month progress report was produced in April 2002, with final review by a technical advisory committee scheduled to occur in July 2002. This advisory committee was organized to provide program direction and technical review and to better facilitate interagency coordination in designing and conducting field work and analysis. Stakeholder groups represented on the advisory committee include the United States Geological Survey, Interagency Ecological Program, Environmental Protection Agency, San Francisco Estuary Institute, Regional Monitoring Program, Regional Board, San Francisco State University, and the City.

Next Steps

This City's approved bioassessment program will continue throughout 2002.

In addition to the phytoplankton bioassessment study, the City is funding a contract to develop a process for assessing the health of the South Bay. The main objective is to consider various existing and on-going water quality, sediment quality, and biological data collection efforts in placing a numeric value on the health of the South Bay. A consortium of Bay Area scientists is conducting the proposed work. The proposed final report date is July 15, 2002.

IV REGIONAL COOPERATIVE EFFORTS

The City is involved in a number of regional cooperative efforts including the Urban Runoff Program, the Santa Clara Basin Watershed Management Initiative (WMI), the Watershed Grant Program and the Regional Monitoring Plan. The primary goal of these efforts is to maximize efficiency and effectiveness by prioritizing issues and solutions and involving key stakeholders on a regional basis.

IV-A SANTA CLARA VALLEY URBAN RUNOFF POLLUTION PREVENTION PROGRAM

The City's Urban Runoff Program (City Program) works with the WMI to meet the watershed management requirements in the NPDES permit, including integration of watershed management activities and production of assessment reports.

In March 2002, the City submitted the FY 2002/2003 Urban Runoff Management Plan (URMP). The URMP was created based on the new 2000-2005 NPDES Storm Water Permit (Order No. 01-024) issued in 2001. Implementation of the new work plan is underway.

The City has hired an outside consultant to identify and draft revised workplan polices and procedures that will be needed when the City implements new provisions pertaining to urban development contained in the Storm Water NPDES Permit Provision C.3. (Order No. 01-119, dated November 14, 2001). The consultant will also train staff from the Department of Planning, Building, and Code Enforcement (PBCE) and the Department of Public Works on how to apply new policies during the planning approval process. The City Program holds regular meetings of City staff to facilitate implementation of the Pesticide Management provisions and the New Development (C3 provisions) requirements.

Standard Operating Procedures (SOPs) on Construction Inspection Responsibilities designed to prevent Urban Runoff Pollution have been drafted and are being reviewed by inspection staff at ESD, Public Works, and PBCE for comments and coordination. The City Program conducted annual training of City Street and Storm Drain maintenance crews in May, and of City Construction Inspection personnel in June.

The City Program coordinates outreach efforts with the WMI through the Watershed Education and Outreach Ad Hoc Task Group, a joint work group of the WMI and the Santa Clara Valley Urban Runoff Pollution Prevention Program (Urban Runoff Program). The WMI and the Urban Runoff Program, along with its media partners, initiated the Watershed Watch campaign in September 2001. The Watershed Watch campaign is currently finishing up year one of a three-year public outreach campaign. For details on the Watershed Watch campaign see the Urban Runoff Program FY 2001/2002 Annual Report.

For more details on the City Program's activities, the City's URMP is available upon request by calling (408) 945-3000.

IV-B WATERSHED MANAGEMENT INITIATIVE

As noted previously in this report, the City is an active participant in the WMI, a stakeholder-driven process that strives to improve conditions of the South Bay by addressing all sources of impairment that threaten the water bodies draining into the South Bay. This collaborative effort includes representatives from state and federal regulatory agencies; regional and local public agencies; business and industrial trade organizations; civic, environmental, resource conservation and agricultural groups; and the general public. The WMI is led by a policy-making body, the Core Group, and is supported by numerous subgroups and task-specific work groups. The City and the Plant, in conjunction with the Water District, the cities of Sunnyvale and Palo Alto, and other stakeholders, have committed significant staff and fiscal resources to meet agreed-upon goals. One of the goals of the WMI is to develop a community-based Watershed Management Plan for the Santa Clara Basin, which will allow for better protection and sustainability of the South Bay's natural resources.

Since January 2002, the following has been accomplished:

State Recognition of the WMI

On February 13, 2002, the California Resources Agency Secretary Mary Nichols, together with Beth Jines, CA EPA, Art Baggett and Celeste Cantu, Chairperson and Executive Director of the State Board, John Muller and Loretta Barsamian, Chairperson and Executive Director of the Regional Board, held a press conference in San José recognizing the work of the WMI as one of the 10 best watershed efforts in the state. Council and Board members from numerous South Bay Agencies as well as staff and representatives from the numerous WMI stakeholder signatories attended the half day meeting which included a breakfast roundtable with city and county officials, a two hour series of presentations and discussion on watershed management by various stakeholders, a networking lunch, and tours of the watershed.

EDC Workgroup

In fall 2001, during the discussion of a proposed power plant construction in south San José, the issue of endocrine disrupting compounds (EDCs) in the local water sources was raised. In response, the WMI authorized a new workgroup to work on evaluating the issue for Santa Clara valley and recommending next steps. Participants on the workgroup include representatives from the U.S. EPA, the City, the Water District, Palo Alto, the Silicon Valley Toxics Coalition, Great Oaks Water and other concerned stakeholders. The group meets monthly and has had presentations by some of the country's experts on this topic. They have drafted a first fact sheet on EDCs. That fact sheet is in the final review stages and is expected to be released in the late summer.

Watershed Assessment Report

The City participated in data analysis efforts as part of the watershed assessment for three pilot watersheds: Guadalupé River, San Francisquito Creek, and Upper

Penitencia Creek. The results of the data analysis were presented to stakeholders in a series of meetings between January and July 2002. These results, together with the modifications based on stakeholder input, and the lessons learned from the process were the basis for the first draft of the *Watershed Assessment Report*, Volume 2 of *the Watershed Management Plan*. The assessment will be used to determine the watershed's ability to support the appropriate beneficial uses including salmon/steelhead fisheries, rare and endangered animal and plant species, water contact recreation, water supply uses, and flood protection. The final report is due for release in fall 2002.

Watershed Action Plan

City staff has continued to work on identifying and reviewing management actions that will go into the *Watershed Action Plan*, the third and final volume of the *Watershed Management Plan*. These action items will be used to identify tasks that need to be performed to achieve the implementation objectives of the WMI, and ultimately, the WMI goals. City staff also participates in the formation of the work group that will be advising the preparation of the Watershed Action Plan. The Action Plan is due for completion in December 2002.

Watershed Watch Campaign

The City is an active participant in the Watershed Watch campaign that is being managed by the Watershed Outreach and Education subcommittee, a joint committee of the Urban Runoff Program and the WMI. Activities this quarter include:

- Sixteen committed partners valued at $644,900 (including media) – partners included Westgate Mall, Nob Hill Market, Children's Discovery Museum, Registrar of Voters, Macy's (Univision). Happy Hollow Zoo, Western Car Wash Association, Hispanic Chamber of Commerce, Keep CA Beautiful, Creek Connections Action Group, University of Santa Clara (KSCU Radio), Don Edwards National SF Bay Refuge, Paramount's Great America, Almaden Kia, Stevens Creek Mazda, Stevens Creek Kia
- School Education Program (ZunZun performances) - 30 performances completed. Pre and post tests evaluated.
- Ads running on: KDTV Univision (Macy's), KRTY radio, KEZR radio (all other schedules are complete for the year)
- Thirty events attended in FY 2001/2002 –Youth Science Institute, Pumpkins in the Park, Master Gardeners, Harvest Festival, San José Auto Show, South Bay Spring Home Show, Watershed Forum, Camellia Show, Environmental Health & Safety Conference (kits distributed by the Water District), Kids' Club KRTY at Oakridge Mall, Kids Club KRTY at Valley Fair Mall, Spring in Guadalupe Gardens, Arbor & Earth Day, SJ Home & Garden Show, Earth Day at Happy Hollow, Santa Clara City Hall Open House, Palo Alto Earth Day, Guadalupe River Park & Children's Festival, Intel Earth Day, Santa Clara County Fair (KEZR), Cinco de Mayo (Univision), Fiestras Patrias (KBRG), Migratory Bird

Day, Creek Cleanup, Raging Waters Nonprofit Day, Family Science Day at Children's Discovery Museum, Sunnyvale Art and Wine Festival (KEZR).

Distributed 8,944 English & 2,778 Spanish kits: (total for FY 2001/2002)

WMI Vision

In August 2001, the City completed *"A Vision For Our Watershed",* a brochure to communicate the WMI "vision" of the watershed. This vision illustrates how a model watershed might look in 2050 if the Watershed Management Plan were implemented. The brochure provides the community with contact information on how they can become involved with the WMI and various stewardship programs and activities throughout the Basin. The next step for WMI's vision process is to work with the public to produce a "public vision " of the watershed. *"A Vision For Our Watershed"* shows a watershed of the future as envisioned by the WMI's Core Group of participants. Recognizing that the public needs to be included in the visioning process, the next step for WMI's vision process is to work with the public to produce a "public vision " of the watershed. A project to produce a "visual preference survey," to capture that public vision, was proposed and launched this year and is being managed by City staff.

WMI Public Participation Opportunities List

The WMI completed and began distributing its *"Public Participation Opportunities" list.* Through this list, the public has access to more than 50 activities provided by 38 different environmental organizations around the Bay Area. Each activity provides an opportunity for personal involvement in an activity that either teaches the participant something about their water environment, or gets them involved in preserving, restoring, or enhancing the watershed. The list is posted on the City's web site, the Watershed Watch web site, and referenced in the Watershed Watch and WMI brochures. City staffed booths and provided materials for three events selected for the opportunity to distribute the WMI materials to volunteers and the public:

1. Mayor's Volunteer Recognition event - This event, sponsored by the Mayor, recognizes volunteers for their contributions to volunteer activities. The event featured free food, music, and t-shirts for volunteers, and a variety of booths showcasing volunteer opportunities for the coming year. More than 150 copies of the "Public Participation Opportunities" list were distributed to teachers, City council members, and staff from non-profit and local government and agency facilities. 50 of these individuals and organizations received copies of the *"A Vision for Our Watershed" (* the WMI's introductory brochure), and 20 received copies of the *"Watershed of San Francisco Bay"* and *"Wastewater Paths"* posters.

2. United Neighborhoods of Santa Clara County Resource Fair - This event presents the opportunity to interact with representatives from more than 200 neighborhood and service organizations in the Santa Clara Basin. 32 copies of the *"Public Participation Opportunities"* list were distributed to teachers, City Council members, and staff from non-profit and local government and agency facilities. 24 of these individuals and organizations received copies of *"A Vision for Our Watershed"*.

3. City Hall Display - More than 100 copies of the WMI's introductory brochure, and the *"Watershed of San Francisco Bay"* and *"Wastewater Paths"* posters were distributed to members of the public and City employees as part of a month-long display in City Hall.

The WMI distributed more than 800 copies of *"A Vision for Our Watershed"*, and 400 copies of the *"Public Participation Opportunities"* list during this reporting period.

Next Steps

The following summarizes the next steps for the WMI:

- Continue providing resources and support for the Watershed Assessment Report and the Watershed Action Plan,
- Complete the Watershed Action Plan development,
- Continue to disseminate the vision outreach brochure and *"Public Participation Opportunities"* list to communities and organizations,
- Continue participation in the Regulatory Executive Forum,
- Continue to fund contract for independent facilitation of Core Group and Subgroups, and
- Continue to work on a "public vision" for the watershed.

Copper and Nickel Action Plan Status

Since the October 2000 NDPES permit amendment, the WMI's Bay Monitoring and Modeling (BMM) Subgroup has finalized site-specific objectives (SSO) for both copper and nickel, prepared draft Basin Plan Amendment language, and kept WMI stakeholders updated on Action Plan program components. The permit amendment also requires semi-annual meetings of the BMM Subgroup to discuss tracking and implementation efforts associated with the implementation of the baseline actions contained on the Copper and Nickel Action Plans (CAP and NAP).

The second semi-annual review of baseline copper and nickel programmatic actions as described in the Copper and Nickel Action Plans was conducted during the BMM meeting held April 24, 2002. Stakeholders agreed to develop a more efficient reporting and documentation format and to determine the applicability of posting of CAP/NAP information on the internet. The following information is presented in Appendix C, documenting the results of this review:

- FY01-02 POTW Update table (April 24, 2002 version)
- FY01-02 Urban Runoff Update table (April 24, 2002 version)

On May 22, 2002 the Regional Board adopted a Basin Plan amendment establishing site-specific water quality objectives and water quality attainment strategies for copper and nickel in the South Bay.

The South Bay Dischargers (Palo Alto, San Jose/Santa Clara, and Sunnyvale), in conjunction with the BMM subgroup, will conduct WMI subcommittee meetings during the second half of 2002 to discuss the status of the baseline Action Plan

activities since April 2002. The next Action Plan review meeting is tentatively scheduled in the September/October 2002 timeframe.

IV-C WATERSHED GRANTS

In order to be responsive to the need for stakeholder input and support for watershed efforts, San José's City Council approved the initiation of a Watershed Grants Program. The goals of the Watershed Grants Program are to:

- Foster and implement innovative solutions to local watershed problems
- Encourage partnerships and joint ventures
- Acquire new participants and challenge existing participants
- Increase awareness of watershed issues
- Leverage resources.

Two cycles of grants were awarded during the 1998/1999 and 2000/2001 fiscal years. A total of 36 grants were awarded, totaling over $600,000. Groups awarded grants committed an additional $170,000 in matching funds.

The Watershed Grants Program has met the goals that were set for this effort. The City's watershed protection efforts were improved by this program in the following ways:

- An increase in collaborative partnerships that leverage resources for protection and restoration activities
- An increase in stakeholder participation and involvement in watershed activities
- A greater understanding by those involved in managing and protecting ecosystems of key stakeholder issues, and of ecosystem functions and processes
- An increased awareness by the community of the fragile nature of the South San Francisco Bay and the opportunities for involvement and improvement

Partnerships and stakeholders are necessary for the success of the Watershed Management Initiative. It is also important that we continue to work with educators and students to inform them of the key issues and concerns related to our watershed.

With this in mind, the Watershed Grants Program was extended by the San José City Council at their June 25, 2002 meeting for the purpose of continuing to meet its adopted goals. A request for proposals for the Cycle Three Watershed Grant Program is scheduled to be released on July 15, 2002 with submittals due August 30, 2002.

IV-D REGIONAL MONITORING PROGRAM

The Regional Monitoring Program (RMP) is a region-wide assessment and monitoring program administered by the San Francisco Estuary Institute on behalf of the Regional Board. The RMP assesses sediment and water quality, and the toxicity and bioaccumulation of pollutants-of-concern. The RMP monitors various locations in the San Francisco Bay, and currently samples twice per year during the winter and summer flow periods. The City contributes to the RMP and also supports one additional sampling station in the southern end of the Bay, Station C-3-0. City staff currently chairs the RMP's Technical Advisory Committee.

The City will continue its active support and participation in the RMP throughout 2002.

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V OUTREACH

The City's outreach programs provide several mechanisms to promote an awareness of pollutant and flow reduction programs to the public and dischargers to the Plant. The outreach materials also include information on pollution prevention and flow reduction techniques and practices that may be useful for industries, commercial facilities, and residents.

V-A FLOW REDUCTION OUTREACH

V-A1 SOUTH BAY WATER RECYCLING OUTREACH

One of the key components of SBWR is marketing and outreach activity. From January through June of 2002, SBWR conducted numerous outreach activities to continuously educate the general community about the benefits of recycled water and to increase the customer base served by recycled water.

Customer Outreach

In February and May 2002, SBWR held Site Supervisor Training workshops. Site Supervisors are designated staff at each SBWR customer. Site Supervisor training presents these employees of current and potential customers with information on the history, proper use, and landscape applications of recycled water. Forty-two customer representatives attended the two workshops.

In March and April, SBWR conducted four retrofit construction workshops presenting information on recycled water to potential customers along one of the new pipelines in Milpitas. As a result of the workshops and other outreach efforts, individual meetings with potential customers along the Milpitas pipeline were requested and held.

As part of SBWR's commitment to expanding industrial use of recycled water, staff has been participating with Environmental Engineering in the development and production of the *Guidelines for Managing Water in Cooling Systems.* This document provides cooling tower users with information on improving efficiency, internal re-use and the use of recycled water in cooling towers. In May of 2002, staff participated in a Cooling Water Reuse and Efficiency Seminar, presenting on the use of recycled water in cooling systems to twenty industrial users from Santa Clara County.

SBWR also conducted a customer satisfaction survey in March to determine how customers viewed SBWR's service based on reliability, quality and responsiveness. 78% of customers responding to the survey reported their service as good or excellent.

General Public

SBWR participated in a Tributary wide survey in March 2002 to gauge general public awareness and support of recycled water and its use in the

community. The survey indicated that after participants were given a description of recycled water, 77% of respondents indicated they had a strongly/somewhat favorable opinion of recycled water. Respondents were also highly in favor of using recycled water to supply large industry (87% strongly/somewhat favorable) and to water their own lawn (86% strongly/somewhat favorable).

Staff continued to participate in local events to communicate with residents about the value of recycled water in the community. In April, staff participated in two community events. The first was the Children's Discovery Faire at the Children's Discovery Museum in San José during which staff made contact with approximately 150 participants. SBWR also sponsored and participated in Spring in Guadalupe Gardens at the Guadalupe River Park and Gardens in San José. As part of the Water Wizard Festival area of the event, SBWR staff conducted environmental activities with over 500 children and adults who were rewarded with receipt of SBWR's new mascot, Reece – the Recycled Water Drop. Both events allowed SBWR staff to present information to the general public about the benefits of recycled water.

As part of the program's continuing support for the recycled water demonstration garden in Guadalupe Gardens, staff provided docent training for twelve volunteers in January and gave three tours of the garden for sixty-two visitors. There have been three workdays in the garden involving over 200 volunteers who are an instrumental part in the continuing success of the garden.

Future Outreach

Anticipated marketing activities for June through December 2002 include: producing and distributing the first annual Recycled Water Quality report; conducting two Site Supervisor Training workshops; continuing to give presentations to constituents of business trade associations, community and environmental groups; and to continue to offer customer and stakeholder presentations as requested.

SBWR will also conduct a Wacky Watershed training class, presenting the *South Bay Water Connections Environmental Education Activities* to teachers of grades six through eight; develop a marketing campaign around Reece – the Recycled Water Drop; and participate in Guadalupe River Park & Gardens Pumpkins in the Park and City Council District 3 and District 8 Community Festivals.

V-A2 INDOOR WATER CONSERVATION OUTREACH

Marketing efforts for indoor water conservation programs target residential, commercial, and industrial audiences. With such a wide audience, a variety of outreach activities are used to convey the City's water reduction messages.

Tri-Lingual Survey

The Water Efficiency Program (WEP) completed a survey of residents of the Plant's service area during this report period. The survey was conducted in English, Spanish, and Vietnamese. The survey revealed that concern for environmental issues remains high, and that citizens are willing to do more to conserve water if they are given specific actions they can take. More specifically, if asked and shown how to do so, citizens are willing to repair toilet leaks - a significant source of wasted water. Findings from the survey will be used to focus WEP outreach. WEP shared the cost of the survey with other City programs including the WMI, Urban Runoff, and SBWR. As a result, WEP received more than three dollars in goods and services for each WEP dollar spent.

Home Show and Ad

WEP attended the Home Show held June 7, 8, and 9. WEP's core messages to residents for this event were: test for toilet leaks, replace older toilets, and repair newer toilets.

A specialized booth display and a cut-away toilet fixture were prepared so that residents could see how to repair their own fixtures. A web page (http://www.slowtheflow.com/flapper.htm) illustrating these repairs was also produced. Using the information gained from the Trilingual Survey the City placed a half page ad in the San Jose Mercury News on 5/31/02 and again on 6/2/02. The ad showed residents how to repair toilet flapper leaks, and offered free movie tickets to residents attending the Home Show that brought proof they'd repaired their leaking flapper.

At the event 400 - 500 residents engaged in one-on-one discussions of leak detection and repair, toilet replacement and flapper valve repair. That personal assistance came from ESD staff members and interns. One resident was so happy with her ability to personally do something for the environment that, after repairing her own leaking flapper, she returned to the home show, bringing a neighbor to learn how. 350 booth visitors also received a fanfold brochure showing residents how to repair toilet leaks from sources other than the flapper, and faucet leaks.

WEP plans to repeat this formula (ad and hands-on demonstrations) at the August 2002 home show. In addition, a Spanish version of the new web page, a new flapper repair fact sheet based on the web page, and translation of the fact sheet into Spanish are planned.

Dry Weather Campaign Plan

WEP completed a campaign plan for the 2002/2003 dry weather campaign season. WEP's Dry Weather Campaign is an element of the 5-year *Action Plan*. The campaign addresses the City's wastewater NPDES Permit requirement to maintain the flow from the Plant at less than 120 million gallons per day. Research indicates that leaks are a significant source of water use and toilet flappers represent a significant segment of those leaks. Based on the Trilingual Survey results, the campaign plan was modified from a "call-in for information" to a "do-it-yourself" format. This capitalized on residents' indication that they are willing to do more, given the proper information. This year's Dry Weather Campaign focuses on flapper repair for all residents, including those with ULFTs installed. It is a collaborative effort with the Water District in which the Water District will supply leak detection dye tablets for the flapper repair campaign.

Next steps include evaluating the timing for future campaigns and how their timing effects flow during the dry weather period. The campaign has traditionally taken place during the dry weather period when behavioral changes (e.g. fixing leaks) can be quickly promoted and adopted by dischargers to impact that season's indoor water uses. Actions of residents (i.e. installing new ULFT's) to result in permanent improvements in water use efficiencies (flow reductions) that would be in effect at the start the dry-weather period, can take place before the dry weather period. To address this issue, a campaign in the February through June time frame is under consideration.

Business Commercial ULFT Mail-Out

The Business/Commercial ULFT program conducted a mailing to more than 22,000 commercial facilities in the service area. The mailing encouraged businesses to replace toilets installed before 1992 with ULFTs.

Changes/Next steps

The dry weather campaign for 2001/2002 concluded the fifth and final year of the *Action Plan*. The dry weather campaign for 2002/2003 represents an interim year, in which the City will evaluate strategic direction for flow reduction outreach over the next 5 years.

Water Efficient Technologies

The target for WET marketing efforts is commercial and industrial businesses. The WET program offers rebates up to $50,000 for businesses to implement equipment changes that reduce wastewater discharge. Traditional marketing has consisted of outreach through professional and business organizations, recognition ads in major local newspapers, internet website advertising, phone calls and direct mailings to a targeted audience.

In addition to our traditional marketing to businesses, efforts were made this past year to market to vendors such as wastewater treatment service providers

and consultants. A workshop was held in January 2002 to educate the vendors about WET and solicit feedback on our program. Thirteen vendors attended and provided positive feedback on our program and rebates. A majority of the participants believe they can incorporate our rebates in marketing to their customers on flow reduction.

The plans for the next six months include a flow reduction workshop scheduled for fall 2002. Both vendors and commercial and industrial businesses will be invited to the workshop. The workshop will include presentations on WET, case studies, water conservation in cooling towers, and other flow reduction topics. Vendors will be allowed to showcase their equipment and services. The goal of the workshop is to bring both vendors and businesses together, provide technical information on flow reduction and encourage flow reduction projects.

In addition to the workshop, WET will continue to market the rebates through professional and business organizations, recognition ads in major local newspapers, internet website advertising, phone calls, and direct mailings. Emphasis will be placed on marketing in mediums where our target audience (facilities and environmental managers) is most likely to be reached.

V-B POLLUTANT REDUCTION OUTREACH

The City's two NPDES permits drive the City's pollutant reduction outreach strategies. A brief discussion of the City's short term and long term pollution prevention outreach approach was included in the July 2001 *CBS Report*. That discussion is included in this report as Appendix E.

V-B1 REGIONAL OUTREACH

The City participates in regional groups that deliver messages that are common to the public and to schools.

Findings and Accomplishments

Restaurant Grease Information Sheet

The City continues to distribute copies of the Bay Area Pollution Prevention Group's (BAPPG) *Restaurant Grease Information Sheet*. The sheet was originally distributed to the 38 Bay Area POTWs that participate in BAPPG. It is now posted on the City's internet site as well.

Watershed Watch Survey

In June 2002, the City completed a survey designed to provide an early baseline to guide the Watershed Watch campaign for the WMI and Urban Runoff Program. The survey used selected questions from the *Santa Clara Valley Urban Runoff Pollution Prevention Program Public Opinion Survey* (June 1999). The Watershed Watch campaign planners intend to do the next

survey after 3 years of implementation. The City's survey will assist Watershed Watch planners to make mid-course adjustments if needed.

Collaboration Makes Cents

Over the last two years, the City has worked with the Urban Runoff Program, WMI representatives, and with interested parties, to develop and launch the "Watershed Watch" campaign. Entering its second year of implementation in 2002/2003, the campaign features a broad array of tactics including radio, television, events, and promotional activities. One campaign component is to solicit participation through contributions and donations of services. As a result of these contributions and donations, the value of the campaign has been increased significantly. The campaign delivers approximately three dollars in goods and services for every dollar originally contributed. Since the City is just one of several agencies participating in the campaign, the City receives approximately 9 dollars of value for every dollar invested in the campaign.

Media Relations Project

The City participated in the Media Relations Committee to develop their annual workplan, press releases, and text for Public Service Announcements. Several Bay Area newspapers wrote articles based on the TMDL press releases on less-toxic pest control. The City proposed and arranged a one time only meeting to coordinate media relations activities with the Bay Area Clean Water Agencies' (BACWA's) Regional Outreach. Coordination between the two groups produced additional coverage of the TMDL issue in 4 major newspapers in the Bay area. A list of the coverage achieved through the Media Relations project is included as Appendix F. The City contributes to the Media Relations project through BACWA and the Bay Area Stormwater Management Agencies Association (BASMAA).

Other Regional Outreach Activities

Staff continued their active participation on the outreach committees of the WE&O, BACWA, BAPPG, the Urban Runoff Program, the WMI, Mid-Peninsula Environmental Educators, and BASMAA. The actions below highlight some of the activities not mentioned in previous sections:

- Aired a total of four new mercury public service announcements for BAPPG's Spanish radio ad campaign on radio station KSOL.
- Coordinated budget processes between BAPPG and BACWA, ensuring continued funding for BAPPG's pollution prevention projects,
- Assisted in the relocation of BAPPG's website,
- Co-facilitated the BAPPG annual pollutant and issue prioritization process,
- Coordinated meeting to produce recommendations for making BAPPG a committee of BACWA

- Chaired the new BACWA-BAPPG Committee,
- Chaired the WMI Outreach Subgroup,
- Proposed a Bay Area region-wide pollution prevention survey for inclusion in the Clean Estuary Program.

V-B2 GENERAL OUTREACH

The General audience includes all residents. The City delivers its messages to this audience through participation in regional and City-sponsored activities including events, ads, outreach campaigns, and a website. While updates on selected elements are presented below, please refer to Appendix G for changes in the way outreach material distribution is reported.

V-B2.1 WEBSITE

The ESD web site was updated to have a consistent look for each of the sections. The method of counting "hits" was improved to provide better feedback on usage. A mechanism will be put into place for ESD and its programs to use the web site more strategically as an outreach tool.

V-B2.2 PLANT TOURS

Due to the events of 9/11/01, Plant tours have been suspended.

V-B3 TARGETED OUTREACH

The City delivers its outreach messages to targeted audiences using events, the website, and presentations.

V-B3.1 SPANISH SPEAKING AUDIENCE

A study of Hispanic audiences in the Bay Area was completed during this report period. The study was a project proposed by the City through the Urban Runoff Program. The "Hispanic Audience Characterization Study" was compiled using data from existing studies and survey mechanisms. An interesting piece of information learned from the study was that while only about 6 % of Hispanic respondents require information in Spanish, a much larger percentage prefers information in Spanish. Next steps include sharing this information regionally, through BAPPG, and a Latino audience focus group. Valdez & Associates has been chosen as the consultant for the Latino focus group, a project being implemented collaboratively through the Watershed Watch campaign. The Latino focus group sessions will help the Watershed Watch campaign to:

- Bring together Latino community/business leaders who can provide insight into effective outreach tactics for reaching Latino audiences in Santa Clara Valley and be potential partners,

- Rate the effectiveness and understanding of Watershed Watch advertising, promotion and materials geared for Latino audiences, and
- Make adjustments, if necessary, to the FY 2002/2003 campaign.

V-B3.2 SCHOOL AND YOUTH OUTREACH

School programs continued to stress the importance of storm drain pollution prevention to protect our creeks and the Plant's protection of the South Bay through treatment, water conservation, and the various uses and value of reclaimed water. Most importantly, the programs provide the connection between the personal, daily activity of residents and creeks, wetlands and the South Bay.

Grant funding allowed the continuation of the "Slow the Flow" Program, which incorporates back-to-back Plant tours with tours of the Don Edwards National Wildlife Refuge. With Plant tours no longer an option, the program began using in-classroom presentations to students in the 5th thru 12th grades. The program coordinator at the Wildlife Refuge offers over eight specialty programs that incorporate the City's messages of water conservation, water quality, Bay stewardship, and preservation of water-dependent ecosystems to youth education and general public audiences.

The following is a compilation of evaluation data collected after each presentation:

- 43.8% of visitors learned something new about South Bay preservation
- 56.3% of visitors learned something about creek and Bay habitats
- 43.8% of visitors learned about urban runoff pollution prevention
- 25% of visitors learned something about watersheds
- 56.3% of visitors learned something about water conservation
- 68.8% of visitors planned to change a behavior as a result of the visit.

Plans to investigate longer-term retention of messages will continue.

School education is also being implemented through Zun Zun performances, coordinated with the Watershed Watch campaign. Zun Zun is a play scripted to deliver information about the watershed in Spanish and English. As of May, 36 performances have been scheduled and 14 performances completed. Entry and exit surveys were developed to evaluate the how successfully the intended messages of the performances were being learned.

Rangers In Schools

The Rangers in Schools program continued through the year, but with significantly lower manpower. Several key Rangers were promoted and were not replaced. New advertising and promotion of the program went on hold pending the hiring of replacements.

In spite of the slowdown, there were fifteen presentations this year. The program has branched out from just in-class presentations to include school assemblies, in-park presentations, and presentations to Girl Scout groups.

The program evaluated longer-term awareness during the last quarter. One class was selected to follow-up with a review test. The class had a "outstanding retention" of the covered material. One goal for the future is to get use that data to further investigate long-term awareness and possible behavior change. Exit evaluations from the classes show that the presentations are very well received and most of the classes will either recommend or re-invite the Ranger program back. Several other activities attended by the Rangers included: the April 13th Children's Faire, the Spring Fling, and two presentations at Happy Hollow Park. They are looking into the possibility of a Water Awareness booth at local farmer's markets for next fall and spring.

V-B3.3 SPECIAL EVENTS

Outreach staff promoted water conservation, pollution prevention, and watershed stewardship at a variety of events. A list of the events attended for FY 2001/2002 can be found in Appendix G.

The City will continue evaluating the various programs provided to youth in schools in the Santa Clara Basin. The City will continue to support school presentations through the Watershed watch campaign and encourage evaluation of classroom and public presentations.

V-B4 COMMERCIAL AND INDUSTRIAL OUTREACH

The City delivers its outreach messages to commercial and industrial audiences using events, its web site, speaking engagements, its IU Academy, and the *Tributary Tribune* IU newsletter (see Appendix H for the spring 2002, fall 2001, and summer 2001 editions).

V-B4.1 INDUSTRIAL USER ACADEMY

Due to job vacancies and reassignments, there was no IU Academy held in the first half of this calendar year. It is the City's intention to hold two such IU Academies in 2002, one in the summer and a second in the fall.

V-B4.2 IU NEWSLETTERS' TOPICS

In the spring 2002 *Tributary Tribune*:

- Dischargers were given guidance on being prepared for unannounced pre-treatment inspections, including updating their list of contacts, maintaining required equipment, and documenting unusual events.

- Dischargers were reminded of the consequences of falsifying a required self-monitoring report (SMR). The article was based on U.S.EPA press releases relating to actual enforcement actions.
- Dischargers were advised on properly filing out the Total Toxic Organics forms, a part of a required SMR for many IUs.
- Dischargers were encouraged to use the WET program to reduce wastewater flows. Using examples of successful projects, the article emphasized that projects come in all sizes.

In the fall 2001 *Tributary Tribune*:

- Dischargers were encouraged to participate in the WET program. An IU's successful implementation of a qualifying project was discussed in detail.
- Dischargers were given guidance on completing SMRs, a requirement of virtually all permitted IUs. A blank SMR & an example of a correctly filled out SMR were included with this issue, as an insert.
- Dischargers were informed of the City's comments on U.S.EPA's proposed "Metal Products & Machinery" categorical discharge standards.
- Dischargers were informed that the WET program is now county wide, and that a Water Efficiency Workshop is planned for 2002.

In the summer 2001 *Tributary Tribune*:

- Dischargers were advised on causes of violations detected by surveillance monitoring and what they should do to reduce the likelihood of such a violation.
- Dischargers were informed of changes made to the pretreatment program in response to the City Auditor's recommendations.
- Dischargers were informed of the results of the winter 2001 survey of permitted dischargers.
- Dischargers were encouraged to participate in the WET program. An IU's successful implementation of a reverse osmosis reject reclamation project was discussed in detail.

V-B4.3 SPECIALIZED BMPS AND MATERIALS

On March 22, 2002, the San Jose Mercury News carried a full-page ad informing residents that "Today's number one source of water pollution is not industry." The ad was developed in response to two different pieces of information: one anecdotal and one from survey feedback. City inspectors report being asked two questions by industrial representatives: Why significant violators are published in the newspaper annually, but companies that have reduced flow and pollutant output dramatically go unrecognized?

and, What is being done to let citizens know that industry is doing a good job of pollution prevention, and that today, in most areas, residents and non-regulated commercial activity are greater sources of pollution? The second piece of information came from the *Santa Clara Valley Urban Runoff Pollution Prevention Program Public Opinion Survey* (June 1999 – Fairbank, Maslin, Maullin, and Associates et al). The survey concluded that, "residents generally blame industrial and manufacturing companies…for water pollution," and that public perception on this was virtually unchanged since a previous survey done in 1996. In fact, 93 percent of residents identified industrial or manufacturing companies as either very responsible (68%) or somewhat responsible (25%) for water pollution. In response, City staff developed an ad to recognize companies that had done their part to control water pollution. The ad listed the names of businesses in the service area of the Plant that were regulated under the Pretreatment Program and had "…been in compliance with all local and federal sewer discharge regulations…." The ad also informed residents of the role they play in pollution prevention. A copy of the ad is attached as Appendix I.

A fact sheet called the *Spill Resource Sheet* was created to support the Environmental Enforcement illicit connection/illegal discharge inspectors (see Appendix J). The fact sheet is a partial list of local contractors who could respond quickly to requests for clean-ups. It is intended for unprepared residents or businesses, in incidents that do not require a Fire Department Hazardous Materials Team response but there is a risk of contaminating storm drains or creeks calling for prompt action by the responsible party.

The stormwater program's Notice of Intent evaluation form (for industrial sites) was updated.

V-B4.4 ESD WEBSITE ADDITIONS

The following changes, new materials, and BMPs were posted on the ESD web site during this reporting period:

- Added a construction BMPs web page for construction and home remodeling and promoted it for 2 months with a "hot button"
- Fix it yourself toilet flapper page plus home show and newspaper ad promotion and a "hot button" promoting flapper repair
- Added links to other sites of environmental interest including watershed watch and the Urban Runoff Program
- Posted new materials – 3 new issues of the *Tributary Tribune*.
- WMI public participation opportunities list
- Draft WMI "early implementation actions" http//www/scbwmi.org/wmi-actions.htm

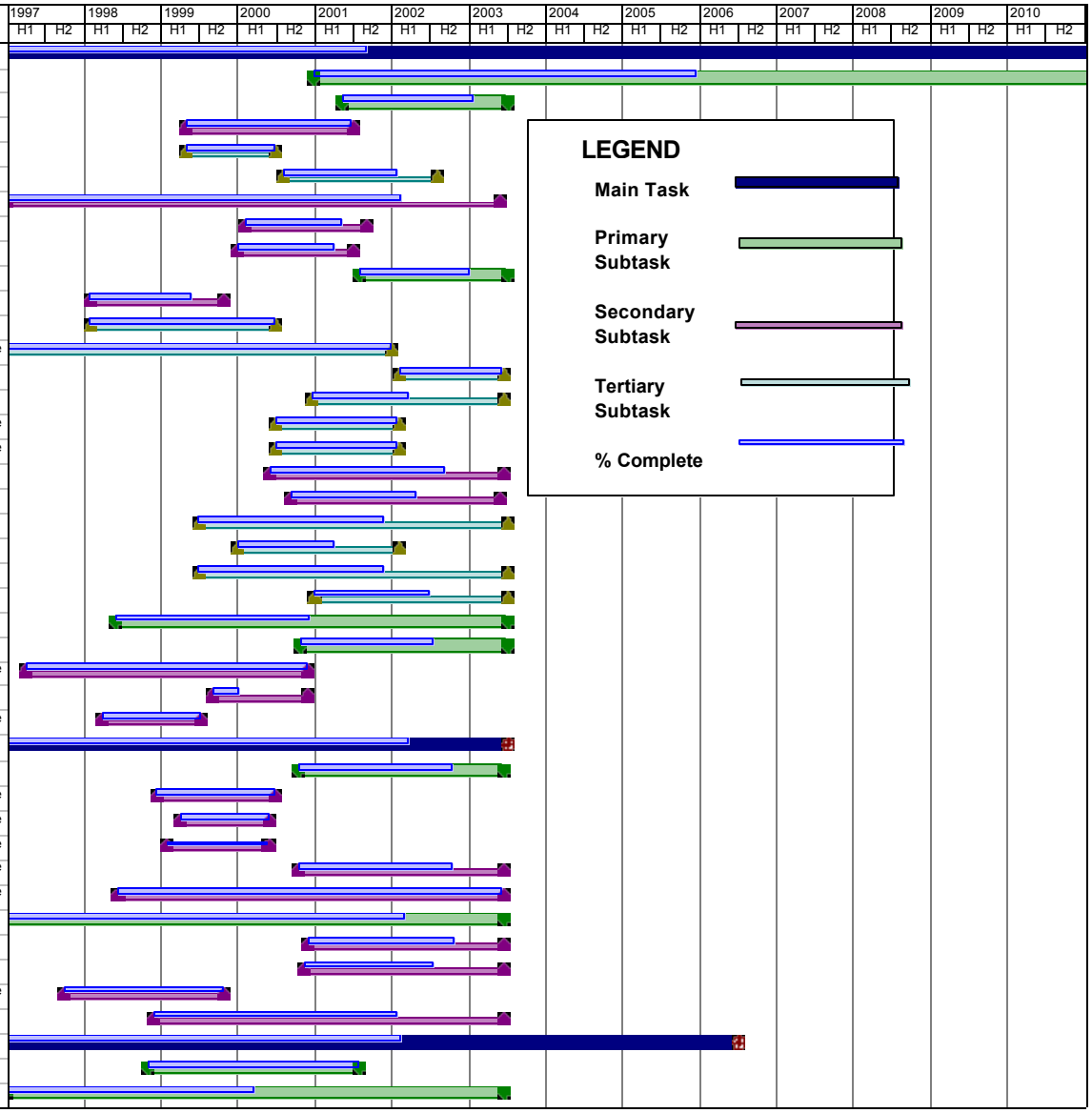
- Redesigned the ULFT site
- Added multi-family dwelling site
- The updated Notice of Intent evaluation form was uploaded to the ESD web site's "Storm Water Discharge" section.

Appendix A

Clean Bay Strategy Timeline

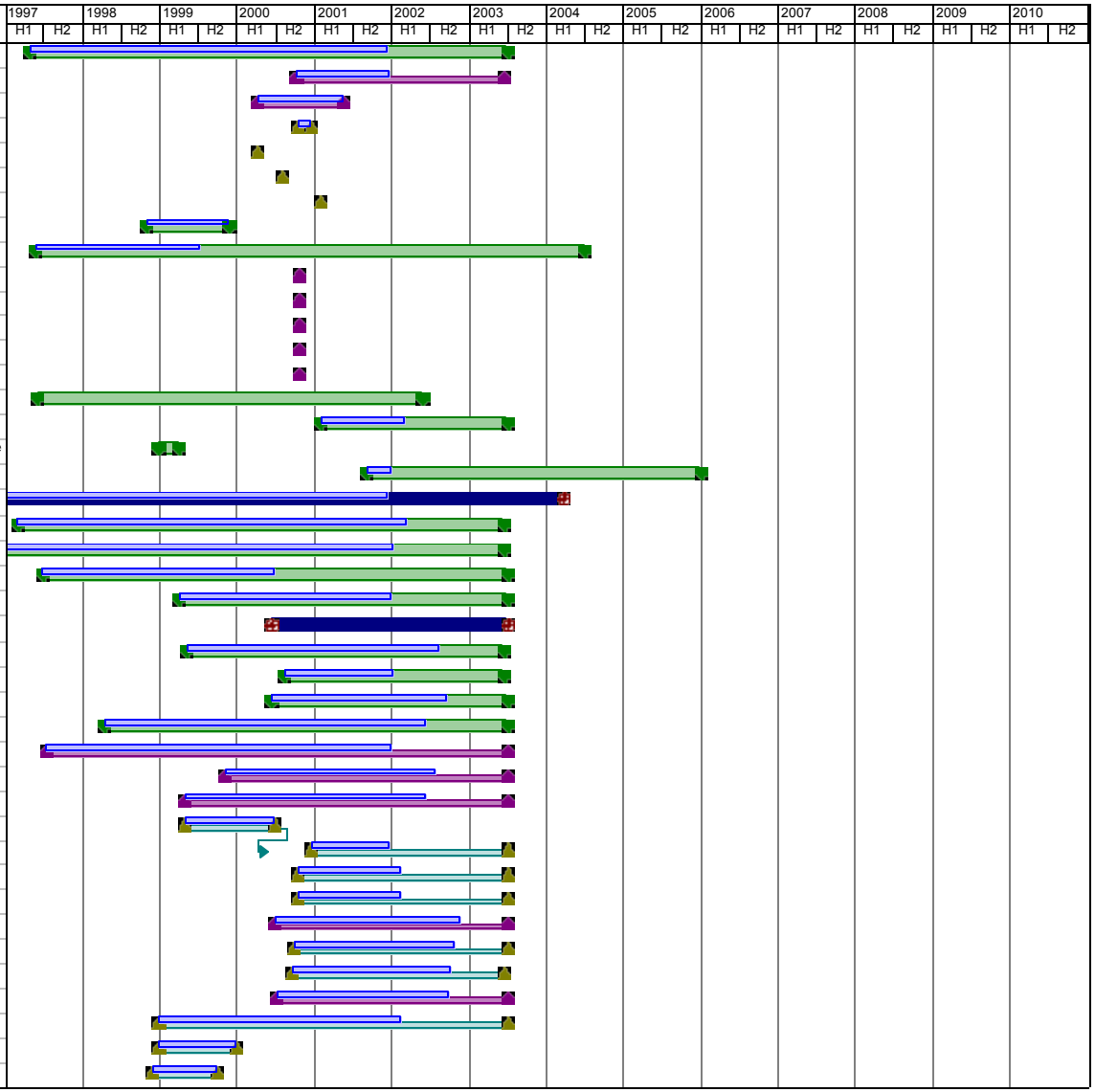
CLEAN BAY STRATEGY TIMELINE
as of July 31, 2002

ID	Project	Task Name	Start	Finish	% Complete
1	**I**	**FLOW REDUCTION & WETLAND MITIGATION**	**5/91**	**11/20**	**On going**
2	I-A	***South Bay Water Recycling***	1/96	12/20	On Schedule
3	I-B	***Industrial Recycle and Reuse***	1/97	6/03	On Schedule
4	I-B1	Flow Audit Study	5/99	6/03	Ongoing
5	1-B1.1	*Tier I Flow Audit Study 1999*	5/99	7/00	100% Complete
6	1-BI.2	*Revised Flow Audit Study 2001*	7/00	7/02	80%
7	I-B2	Industrial Discharge	1/97	6/03	On going
8	I-B4	Industrial Water Reuse Guidelines	11/98	9/01	80%
9	1-B5	Cooling Tower Guidelines	1/00	7/01	95%
10	I-C	***Indoor Water Conservation***	5/91	6/03	Ongoing
11	I-C1	ULFT Programs	7/92	6/03	Ongoing
12	1C1.1	*ULFT Rebate Voucher Program*	7/92	06/00	100% Complete
13	I-C1.2	*Community Partnership Program (CPP)*	3/96	12/01	100%, Complete
14	1-C1.3	*Multi-Family Dwelling (MFD) Voucher Program*	9/96	06/03	100% Complete
15	1-C1.4	*Commercial, Industrial, and Institutional (CI&I) ULFTs*	4/97	6/03	On going
16	1-C1.5	*Small MFD Program*	7/00	1/02	100%, Complete
17	1-C1.6	*Single Family Fee for Service*	7/00	1/02	100%, Complete
18	I-C2	Water Efficient Technologies (WET) (formerly FIP)	5/91	6/03	90%
19	I-C3	Additional Conservation Programs	7/98	6/03	On going
20	I-C3.1	*Horizontal Axis Washer Rebate Program*	7/98	06/03	Ongoing
21	I-C3.2	*Water Wise House Calls*	7/98	01/02	Ongoing
22	I-C3.3	*Commercial Washer Rebate Program*	7/98	06/03	Ongoing
23	I-C3.4	*Submetering Program*	7/98	06/03	Ongoing
24	I-D	***Groundwater Infiltration (GWI) Reduction Program***	6/98	6/03	80%
25	I-E	***Marsh Mitigation***	4/97	01/01	On Schedule
26	I-E1	Marsh Mitigation Project--Baumberg Tract	4/97	07/00	100%, Complete
27	I-E2	Marsh Mitigation Project--Mosely Tract	9/99	TBD	30%
28	I-E3	Marsh Mitigation Project--Bair Island	4/98	7/99	100%, Complete
29	**II**	**POLLUTANT REDUCTION**	**1/95**	**6/03**	**On Going**
30	II-A	***SJ/SC Water Pollution Control Plant***	11/95	6/03	On Schedule
31	II-A1	Operations and Maintenance Manual	12/98	6/00	100%, Complete
32	II-A2	Headworks Loading Analysis Workplan	4/99	6/00	100%, Complete
33	II-A3	Selected Organic Source Investigation Workplan	1/99	6/00	100%, Complete
34	II-A4	Trunkline and Upstream Monitoring	11/95	6/03	100%, Complete
35	II-A5	In-Plant Studies	6/98	6/03	100%, Complete
36	II-B	***The Pretreatment Program***	1/95	6/03	On Schedule
37	II-B1	Industrial Wastewater Discharge Municipal Code	1/95	6/03	On Going
38	II-B2	New Industry/Development Program	9/97	6/03	On Going
39	II-B3	Industrial Discharger Research Studies	10/97	01/00	100%, Complete
40	II-B4	Industrial Pollutant Loading Status	12/98	6/03	On Going
41	**III**	**RESEARCH AND SPECIAL STUDIES**	**1/94**	**6/06**	**On Going**
42	III-A	***Special Effluent Study for Certain Organic Pollutants***	11/98	7/01	100% Complete
43	III-B	***Mercury TMDL Participation Plan***	1/97	6/03	60%



CLEAN BAY STRATEGY TIMELINE
as of July 31, 2002

ID	Project	Task Name	Start	Finish	% Complete
44	III-C	***Special Water Quality Studies***	1/97	6/03	Ongoing
45	III-C1	Trace Level Monitoring in S San Francisco Bay	1/99	6/03	On Going
46	III-C2	Calcs for TMDL for Cu and Ni in S San Francisco Bay	2/99	6/03	On Going
47	III-C2.1	*Provide Work Plan for Cu Ni Site Specific Objectives*	10/00	2/01	100%
48	III-C2.2	*Implement Copper Action Plan*	TBD	TBD	TBD
49	III-C2.3	*Implement Nickel Action Plan*	TBD	TBD	TBD
50	III-C2.4	*Implement Work Plan for Cu Ni Site Specific Objectives*	TBD	TBD	TBD
51	III-D	***Salt Marsh Conversion Assessment***	11/98	11/99	100%, Complete
52	III-E	***Stream Flow Augmentation Pilot Project***	6/97	6/04	30%, Delayed
53	III-E1	Develop Monitoring Program	TBD	TBD	TBD
54	III-E2	Develop Contingency Plan	TBD	TBD	TBD
55	III-E3	Initiate Discharge	TBD	TBD	TBD
56	III-E4	Establish Discharge Rates	TBD	TBD	TBD
57	III-E5	Review Monitoring Reports	TBD	TBD	TBD
58	III-F	***Wetlands Creation Pilot Project***	6/97	5/02	0%, Delayed
59	III-G	***Avian Botulism***	1/99	06/03	Ongoing
60	III-H	***Local Effects Monitoring***	1/99	4/99	0%, Discontinue
61	III-I	***Bioassessment of South Bay***	09/01	01/06	On Going
62	**IV**	**REGIONAL COOPERATIVE EFFORTS**	**1/93**	**1/04**	**On Going**
63	IV-A	***Urban Runoff Management Program***	3/97	6/03	On Going
64	IV-B	***Watershed Management Initiative***	6/96	6/03	On Going
65	IV-C	***Watershed Grant Agreements***	1/97	6/03	On going
66	IV-D	***Regional Monitoring Program***	4/99	06/03	Ongoing
67	**V**	**OUTREACH**	**1/94**	**6/03**	**On Going**
68	V-A	***Flow Reduction Public Outreach***	5/99	6/03	On Going
69	V-A1	South Bay Water Recycling	1/94	6/03	On Going
70	V-A2	Indoor Water Conservation Outreach	5/91	6/03	On Going
71	V-B	***Pollutant Reduction Outreach***	6/91	6/03	On Going
72	V-B1	Regional Outreach	5/94	6/03	On Going
73	V-B2	General Outreach	5/94	6/03	On Going
74	V-B2.1	Residential Outreach	5/94	6/03	On Going
75	V-B2.2	*ESD Web Site*	5/99	6/00	100%, Complete
76	V-B2.2A	*ESD Website Update*	6/00	06/03	Ongoing
77	V-B2.3	*Plant Tours*	5/99	06/03	On Going
78	V-B2.4	*Outreach Assessment*	5/99	06/03	On Going
79	V-B3	Targeted Outreach	6/91	6/03	On Going
80	V-B3.1	*Non-Native Speaking Audiences*	5/94	06/03	Ongoing
81	V-B3.2	*School and Youth Outreach*	5/94	6/03	On Going
82	V-B4	Commercial and Industrial Outreach	8/91	06/03	On Going
83	V-B4.1	*Industrial User (IU) Academy*	1/99	6/03	On Going
84	V-B4.2	*Industrial User (IU) Newsletter Survey*	1/99	1/00	100%, Complete
85	V-B4.3	*Specialized BMPs and Materials*	12/98	10/99	100%, Complete



Appendix B

Trunkline and Upstream Monitoring Report

Appendix C

Copper / Nickel Action Plan Updates

FY 2001/2002 POTW Update table (April 24, 2002 version)

FY 2001/2002 Urban Runoff update table (April 24, 2002 version)

FY 01-02 Semi-Annual Review
Update of Appendix A of Lower South Bay POTW Permits
Summary of POTW Baseline Copper Control Actions [1]

Baseline Number (Dialogue)	Continuos Improvement/ Metals Control Plan	Description	Lead Party	FY 01-02 Status	Implementation Mechanism	Source (s) addressed; potential effectiveness
CB-3 (11 & 35)	C-13 & C-35/ IND-1 & IND-2	Complete Industrial- 2: investigations (based on MCMP), identify and implement reasonable controls in conjunction with industry (older printed circuit board manufacturers with copper platting) to reduce elevated levels in runoff from targeted industry including development/implementation of education and outreach plan Clarify linkage with POTW Pretreatment Programs	SCVURPPP & Co-permittees & industry Possibly POTW permits	See discussion on CB-3 of Urban Runoff table.	Urban Runoff and Industrial Storm water Permits Reporting conducted as part of SCVURPPP and Co-permittees Annual Report. (SCVURPPP and Co-permittee FY 99-00 Work Plan contains Industrial-2 scope. Future Work Plans will contain description of additional tasks based on Industrial-2 results.) Develop approach to implement Area-Wide as part of March 2001 Work Plan (tied to Pilot Results)	Address portion of industrial load; very small (<1-2% of copper from urban runoff)
CB-9 (20)	------	Continue current efforts and track corrosion control opportunities: • Continue educational outreach, within the City of Palo Alto, to plumbers and designers to reduce corrosion of copper pipes via better design and installation • Track developments in (a) alternatives to copper piping (b) corrosion	City of Palo Alto Environmental Compliance Unit (track and report developments to the SCBWMI)	Palo Alto has developed a 12 page paper entitled "Guidelines for Designers, Installers, and Owners of Copper Piping Systems" and a 2 page fact sheet for plumbers entitled "Help Curb Copper Corrosion." Presentations on these documents were made to the local chapter of the American Scoiety of Plumbing Engineers and to the local Plumbers Union to	POTW permit Reporting conducted as part of annual Pretreatment Program report.	Corrosion related copper; limited effectiveness

FY 01-02 Semi-Annual Review
Update of Appendix A of Lower South Bay POTW Permits
Summary of POTW Baseline Copper Control Actions [1]

Baseline Number (Dialogue)	Continuos Improvement/ Metals Control Plan	Description	Lead Party	FY 01-02 Status	Implementation Mechanism	Source (s) addressed; potential effectiveness
		inhibitors, and (c) other methods of reducing copper corrosion		insure agreement and support. These documents and a Power Point presentation are available to other local governments via the SCVURPPP. ACTION: Palo Alto's February 22, 2002 "Copper Action Plan Report" discussed alternatives such as PEX and CPVC and noted that these materials may be used now under special situations. Widespread use in CA is still being debated as part of the Uniform Building Code adoption process in CA. ACTION: Palo Alto to track and report on progress and changes.		
CB-13 (35)	NA	Track POTW Pretreatment Program efforts and POTW loadings	POTWs	POTWs noted that additional information on mass discharged can be found in the running average mass calculations contained in monthly POTW SMRs. CSJ – noted that readers should look at pages 20-26 of	POTW NPDES Permits (reporting part of Annual SMR and Pretreatment Program reports)	Tracking effort

FY 01-02 Semi-Annual Review
Update of Appendix A of Lower South Bay POTW Permits
Summary of POTW Baseline Copper Control Actions [1]

Baseline Number (Dialogue)	Continuos Improvement/ Metals Control Plan	Description	Lead Party	FY 01-02 Status	Implementation Mechanism	Source (s) addressed; potential effectiveness
				the City's Clean Bay Strategy as well as the ESD's web site www.ci.san-jose.ca.us/esd. Palo Alto- Palo Alto's 2002 "Clean Bay Plan" (located on their web site www.city.palo-alto.ca.us\cleanbay.) contains current copper influent loadings. The loading figures supporting the pie chart of copper sources were re-evaluated, but changes were not significant and the pie chart was not changed from the 2001 version. Sunnyvale – distributed a memo dated September 10, 2001 to the BMM/RS group that noted the reader should refer to "2000 Update of Source Loadings to the City of Sunnyvale WPCP" report which is included in the City's Annual Pre-treatment report dated February 28, 2001. The City also noted several other reports prepared in 1999 regarding in-plant metals		

FY 01-02 Semi-Annual Review
Update of Appendix A of Lower South Bay POTW Permits
Summary of POTW Baseline Copper Control Actions [1]

Baseline Number (Dialogue)	Continuos Improvement/ Metals Control Plan	Description	Lead Party	FY 01-02 Status	Implementation Mechanism	Source (s) addressed; potential effectiveness
				removal as well as influent copper concentrations. The City provided summary tables of source loadings for 2000 and the copper mass loadings from the WPCP since 1991.		
CB-14 (36)	NA	Track and encourage water recycling efforts	POTWs	The City's 2001 Annual Pretreatment Report included an updated "Source Loadings" section consistent with the permit. The update shows that mass loadings of copper to the Bay continued to decline in 2001. CSJ – noted that a quarterly report is provided to the City Council (August 16, 2001 version was distributed); that the Clean Bay Strategy contains a summary; that the City reached double digits in reclaimed water this past year and the at the plant flows are below the 120MGD cap. Palo Alto- New cost effective recycled water projects were not identified during the past year. Sunnyvale – The City	Reporting through POTWs Annual Water Recycling report and/or Annual SMR	POTW; cost-benefits need to be evaluated as part of considering additional efforts

FY 01-02 Semi-Annual Review
Update of Appendix A of Lower South Bay POTW Permits
Summary of POTW Baseline Copper Control Actions [1]

Baseline Number (Dialogue)	Continuos Improvement/ Metals Control Plan	Description	Lead Party	FY 01-02 Status	Implementation Mechanism	Source (s) addressed; potential effectiveness
				produces an annual Recycling Report every March. Last year approximately 28 MG of water were recycled. The City completed a Recycled Water Program Master Plan last December 2000. IN 2001, over 110 MG of recycled water was distributed for landscape irrigation and other approved uses.		
CB-17 (Trish priority –High for Photo, Med. For sed., and low for loading)	NA	Track and encourage investigation of several important topics that influence uncertainty with Lower South Bay Impairment Decision[7] • Phytoplankton toxicity and movement (IAR Section 5.3.1) • Sediment cycling • Loading uncertainty Encourage incorporation of appropriate bioassessment tools into ongoing monitoring programs to track presence of copper-sensitive taxa in LSB.	SCBWMI – Core Group (assistance via POTW and SCVURPPP and Co-permittees)	See discussion on CB-17 of Urban Runoff table. RMP and Bruland water sampling effort as part of RMP to investigate effect of copper on the phytoplankton community (chemical speciation effort). CSJ signed a contract in June 2001 with the Romberg Tiburon Center of USF to provide information on potential indicators that might help distinguish anthropogenic and natural variability in the plankton	Track and encourage RMP, NOAA, USGS, etc.	NA (Special Studies)

FY 01-02 Semi-Annual Review
Update of Appendix A of Lower South Bay POTW Permits
Summary of POTW Baseline Copper Control Actions[1]

Baseline Number (Dialogue)	Continuos Improvement/ Metals Control Plan	Description	Lead Party	FY 01-02 Status	Implementation Mechanism	Source (s) addressed; potential effectiveness
				community of the South Bay. The first phase started in August 2001 and includes preliminary plankton sampling, development of a conceptual model and establishment of a technical advisory group. The second phase is scheduled to start in August 2002 and involves a two-year pilot plankton study to evaluate indices and test the conceptual model. The preliminary report is due in January 2004 and the final is due one year later. (The City distributed a one-page handout on the effort.) Palo Alto has contracted with USGS to prepare benthic diversity data at Sand Point (near the RWQCP). A report will be available by June 2002 which will help determine whether benthic diversity at this location can be a productive indicator. CSJ is providing support to		
		Prepare issue paper on feasibility and cost of addressing phytoplankton toxicity questions	RWQCB (Tom Mumley)			

FY 01-02 Semi-Annual Review
Update of Appendix A of Lower South Bay POTW Permits
Summary of POTW Baseline Copper Control Actions[1]

Baseline Number (Dialogue)	Continuos Improvement/ Metals Control Plan	Description	Lead Party	FY 01-02 Status	Implementation Mechanism	Source (s) addressed; potential effectiveness
				consultant to develop "white paper" on ecological report card approach. No report.		
CB-18	NA	Track and encourage investigation of important Factors that Influence Copper and Fate (Potential Reduction in Uncertainty is Moderate to High)[2] • Investigate flushing time estimates for different wet weather conditions • Investigate location of northern boundary condition • Determine Cu-L1 and L2 complex concentrations • Investigate algal uptake/toxicity with competing metals	SCBWMI – Core Group (assistance via POTW and SCVURPPP and Co-permittees)	See discussion on CB-18 on Urban Runoff table.	Track and encourage RMP, NOAA, USGS, etc.	NA (Special Studies)
CB-19	NA	Continue to promote industrial water use and reuse efficiency. These programs	POTWs	CSJ – see pages 4-6 of the City's Clean Bay Strategy	POTW Permits	Unknown

FY 01-02 Semi-Annual Review
Update of Appendix A of Lower South Bay POTW Permits
Summary of POTW Baseline Copper Control Actions [1]

Baseline Number (Dialogue)	Continuos Improvement/ Metals Control Plan	Description	Lead Party	FY 01-02 Status	Implementation Mechanism	Source (s) addressed; potential effectiveness
		may include workshops, outreach, incentives, or audits. (see Appendix 4-1#35)		Palo Alto – see response to CB-14 Sunnyvale – see discussion contained in City's September 10, 2001 memo to the BMM/RS. The memo discusses the City's Water Efficiency Technologies program as well as other efforts the City has undertaken in the residential and commercial sectors.		
CB-20	------	Revise Copper Conceptual Model report findings and produce status report (revise conceptual model uncertainty table, appendix ___ based on available information)	SCBWMI (with assistance from POTWs and SCVURPPP & Co-permittees)	No update necessary at this time.	CORE GROUP short-term issue Update as part of NPDES Permit application process Possible linkage and assistance from North Bay effort as well as RMP and RWQCB TMDL efforts	Unknown

1 Annual Reports of NPDES permitted agencies (POTWs and SCVURPPP) will contain a summary of the status of all CAP items.
2 See Table D "Task 1: Conceptual Model Report for Copper and Nickel in Lower South San Francisco Bay" final report, December 1999 Contained in Appendix 4-2.

FY01-02 Semi-Annual Review
Update of Appendix B of Urban Runoff Permit
Summary of Urban Runoff and Watershed Management Baseline Copper/Nickel Control Actions [1]

Baseline Number (Dialogue[2])	Description	Lead Party		Status of FY 01-02 Baseline Actions	Follow-up Actions	Source (s) addressed; potential effectiveness
CB-1 (2 & 4)	*Measures to reduce copper discharges from vehicle washing operations.* These shall include outreach and education activities targeted towards residential car washing, washing of vehicles at commercial and industrial facilities; and vehicle washing by mobile cleaners; implementation of BMPs by mobile cleaners; and inspections or other mechanisms to evaluate effectiveness of these measures.	SCVURPPP & Co-permittees		**General Outreach**: Please refer the SCVURPPP Annual Reports for additional detailed information on the SCVURPPP Public Information/Participation element and the Watershed Education and Outreach Campaign. Annual Reports are published by the SCVURPPP each September. The SCVURPPP, in March of each year, identifies the various PI/P activities that it and the Co-permittees will conduct. The goals of the PI/P element are to identify and change behaviors that adversely affect water quality, and to increase the understanding and appreciation of streams and the Bay. Past local and Regional efforts on vehicle washing have included the mobile cleaning campaign and guide. **Targeted Outreach**: The Western Car Wash Association Board voted to "partner" with the Watershed Watch campaign. A proposed agreement is under development now. At a minimum, the WCWA will provide discount coupons for use at commercial car wash facilities. These coupons will be offered to the public in conjunction with a promotion which conveys information about car washing P2. Summer of 2002. **Co-permittee Actions:** Co-permittees will be distributing coupons and participating with the Program in the WCWA promotion. No specific outreach activities are planned for industrial and/or mobile cleaners. The BASSMA renewal certificate training program was distributed to all stormwater programs. The SCVURPPP provided training materials to the 3 South Bay POTWS which have committed to do the retraining on request basis. The SCVURPPP will follow-up with the POTWs over the		Address mobile cleaners and vehicle washwaters; anticipated to be very small source of loading

FY01-02 Semi-Annual Review
Update of Appendix B of Urban Runoff Permit
Summary of Urban Runoff and Watershed Management Baseline Copper/Nickel Control Actions [1]

Baseline Number (Dialogue[2])	Description	Lead Party		Status of FY 01-02 Baseline Actions	Follow-up Actions	Source (s) addressed; potential effectiveness
				next year to review the status and results of this effort. Status report Spring of 2003. Palo Alto's $2-off commercial car wash coupons were distributed to residents through a variety of outlets and the program was advertised in the media and Palo Alto publications.		
CB-2 (6)	*Measures to track copper sulphate use by water suppliers.* The District shall continue to track and report use of copper sulphate by water suppliers in the Santa Clara Valley (includes State & Federal Water Project).	SCVWD		The SCVWD will complete their report before the end of FY01-02 . – Report was distributed at the 4/24/02 BMM meeting. The key findings are: · Copper sulfate dosage has no significant effect on treated water concentrations distributed by the District's plants · Treated water copper concentrations are normally an order of magnitude lower than the Detection Limit for Reporting as required by the Safe Drinking Water Act · Average concentrations of copper in treated water from the District's plants are at or below the proposed site specific objective for the Bay The SCVWD will continue to track potable water quality (final treated water quality only) for copper and annually provide a report to the BMM/RS, usually fall of each year. Palo Alto will incorporate the SCVWD results into the tracking effort as another "potential indicator" as part of CB-4.		Address Copper Sulfate (use has been discontinued by SCVWD); continue t o track and confirm

FY01-02 Semi-Annual Review
Update of Appendix B of Urban Runoff Permit
Summary of Urban Runoff and Watershed Management Baseline Copper/Nickel Control Actions [1]

Baseline Number (Dialogue[2])	Description	Lead Party		Status of FY 01-02 Baseline Actions	Follow-up Actions	Source (s) addressed; potential effectiveness
CB-3 (11 & 35)	*Measures to control copper in discharges of stormwater from targeted industrial sources.* These shall include identification and implementation of appropriate and cost-effective controls. The targeted industries include older printed circuit board manufacturers and metal plating facilities using copper. Clarify linkage with POTW Pretreatment Programs (C-13 & C-35/ IND-1 & IND-2)	SCVURPPP & Co-permittees & industry Possibly POTW permits (clarify need by March 2001 as part of SCVURPPP Work Plan)		The City of San Jose has included a separate task in their FY02-03 Work Plan for this element. The Program will organize an IND Adhoc meeting with Co-permittees with targeted industries and discuss the results of the IND-1 and 2 effort and the CSJ outreach efforts. Fall 2002 The Program will work with the IND Adhoc to discuss and develop improvements to the IND Performance Standard and a time frame for Co-permittee implementation. January 2003 Palo Alto completed an industry roof top audit and the results are documented in their FY 00-01 Annual Report.		Address portion of industrial load; very small (<1-2% of copper from urban runoff)
CB-4 (16.1 & 34)	*Measures to quantify copper control/pollution prevention measures and source loadings.* These shall include investigating and/or tracking agreed upon quantification studies concerning copper in vehicle brake pads and field investigations to monitor long-term trends to determine the possible linkage between copper from brake pads and copper concentrations in water. 1-Provide appropriate level of local support for agreed upon quantification studies	SCBWMI/SCVURPPP (lead party may change depending on quantification study identified)		*THIS SPACE WAS INTENTIONALLY LEFT BLANK. AT THIS POINT IN TIME NUMBER THREE BELOW IS THE IDENTIFIED ACTIVITY UNDER THIS BASELINE ACTION.*		Evaluation of source loadings, potential control measure/pollution prevention effectiveness Effectiveness to indicate future copper impairment changes is unknown

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Baseline Number (Dialogue[2])	Description	Lead Party		Status of FY 01-02 Baseline Actions	Follow-up Actions	Source (s) addressed; potential effectiveness
	2- Investigate and/or track quantification studies for a wide range of existing copper control/pollution prevention measures and sources loadings					
	3-Collect data and prepare annual reports on the following potential indicators • Copper content in new auto brake pads • Total population in basin • Auto/truck vehicle traveled in basin • Copper sulfate (e.g. algaecide, pesticide, industrial; chemicals) sales in basin (aggregate basis-scaled to basin level estimate) • Copper content in macoma tissue at San Point (Palo Alto) • Reproductivity index for macoma at Sand Point • Benthic community assemblage at Sand Point	City of Palo Alto		Palo Alto prepared a "Copper Action Plan Report, dated February 22, 2002" that is contained as Appendix "D" of the City's "Clean Bay Plan" www.city.palo-alto.ca.us/cleanbay. The report outlines the data collected on the potential indicators listed under no. 3 of CB-4. Limited data are available for reproductivity of *M.balthica and* benthic community assemblage at San Point. Additional data collection and analysis for these parameters will be available in June 2002		
	4-Prepare issue paper on feasibility of potential field investigation to monitor long-term trends between copper from brakepads and concentration in water. (------/AUTO-1, 2 & 3)	RWQCB/SCVURPPP		RWQCB staff noted that this item could be folded into BPP and possibly work associated with TMDL MOU. Request input from the WQASP relative to the priority of this item. Spring 2002 Request the BASMAA BPP liaison for a written status report		

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Baseline Number (Dialogue[2])	Description	Lead Party		Status of FY 01-02 Baseline Actions	Follow-up Actions	Source (s) addressed; potential effectiveness
				on the status of BPP efforts specifically related to monitoring long-term trends between copper from brakepads and concentration in water. Spring 2002		
CB-5 (15)	*Measures to support Brake Pad Partnership activities.* These shall include providing appropriate level of local support for agreed upon Brake Pad Partnership (BPP) activities. 1-Review/assess/provide input on Brake Manufacturing Council (BMC)/BPP brakepad wear debris research & brakepad content data. 2-Ensure that other local state and federal players are involved appropriate on brakepads issue as it is a widespread urban concern.	1-SCVURPPP currently tracking with funds designated in FY 00-01 Work Plans 2-BASMAA & SWQTF involvement on BPP may be needed as a Task of Regional Benefit		1-The SCVURPPP will continue to support the use of BASMAA's baseline budget resources to provide resources to support Brake Pad Partnership annual meeting and conferencePalo Alto & BASM AA financially supported work at the Clemson University to determine the availability of copper in brake wear. That work is 50 percent complete and a report should be available at the end of CY 2002. The SCVURPPP will continue to support the use of BASMAA's baseline budget to provide resources to an outside Brake Pad advocate for the stormwater community. 2- SCVURPPP will again recommend that BASMAA approach SWQTF to consider funding to support State involvement with BPP including investigation of fate and transport.		Brake pad wear debris is a source

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Baseline Number (Dialogue[2])	Description	Lead Party		Status of FY 01-02 Baseline Actions	Follow-up Actions	Source (s) addressed; potential effectiveness
	3-Assist in making research data that are in the public domain accessible (------/AUTO-1, 2 & 3)	3- WMI data management system		3-The SCVURPPP via Program data management efforts and in conjunction with WMI efforts incorporate BPP and other related and readily available into the WMI metadata database. The SCVURPPP has approached the SVTC for interest serving as the environmental clearinghouse. The SCVURPPP will discuss this option with the SVTC and develop a scope if they are interested. If not, the SCVURPPP will develop and implement another approach to accomplish the objective. Fall 2002. (See CB-16).		
CB-6 (17)	*Measures to reduce traffic congestion* Review appropriateness of transportation control measures, prioritize reasonable measures and identify potential efforts for further development as part of Phase I and implementation as part of Phase II (C-31/AIR-1 and AIR-2)	SCBWMI (SCVURPPP take lead on preparing short-term issue paper as part of LUS that begins to investigate the role of storm water management agencies in regional congestion management planning and implementation)		The SCVURPPP will finalize the draft issue paper (second draft released for LUS review on Feb. 14, 2002) entitled "The Role of Stormwater Agencies in Regional Congestion Management Planning and Implementation" during March/April 2002. The issue paper was finalized and approved by the LUS on March 13, 2002. The report was distributed to the BMM. Based on the LUS review and approval and the CORE Group final review and approval of the paper and the next steps, the SCVURPPP will assist the LUS develop a WMI short-term application to form a work group to address the need for a forum. The SCVURPPP will follow-up on the status of the CSJ staff summary of other ongoing City efforts/activities that address traffic congestion management.		Vehicles; unknown effectiveness

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Baseline Number (Dialogue[2])	Description	Lead Party		Status of FY 01-02 Baseline Actions	Follow-up Actions	Source (s) addressed; potential effectiveness
CB-7 (17.27)	*Measures to reduce traffic congestion* Establish transportation/impervious surface "forum" • Consider results of VMT and imperviousness load estimates and control effectiveness evaluation; identify potential control efforts for further development as part of Phase I and implementation as part of Phase II	SCBWMI (incorporate as part of short-term issue paper on B-6)		See CB-6 above		Vehicles; unknown effectiveness
CB-8 (18 and 25[5])	*Measures to classify and assess watersheds*. These shall include assisting the SCBWMI in its continuing efforts to implement watershed classification and assessment efforts and to improve institutional arrangements for watershed protection. These efforts shall include: • Ensuring that watershed protection is considered in all applicable elements of Dischargers' General Plans land use, circulation, open space, transportation, and conservation, and consistency requirements; and seek appropriate changes in state General	SCBWMI (with assistance from the SCVURPPP and Co-permittees)		The WMI intends to finalize the three watershed assessments (Upper Penitencia, San Francisquito, and Guadalupe). The SCVURPPP will assist the WAS with Task 11.2 and 11.3 to finalize the assessment reports (see WAS Work Plan). Summer/Fall 2002. The SCVURPPP will finalize the Coyote Pilot assessment including a long-term monitoring plan (involves review of the preliminary plan contained in the Multi-Year Receiving Waters Monitoring Plan). Fall 2002. The SVCURPPP and the Co-permittees will be implementing the C3 Work Plan that addresses enhancements to local stormwater programs regarding CEQA and General Plans considerations as they relate to new and redevelopment. (see C3 Work Plan Volume II).		NA (WMI efforts have resulted in moving issue beyond CONCUR findings)

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Baseline Number (Dialogue[2])	Description	Lead Party		Status of FY 01-02 Baseline Actions	Follow-up Actions	Source (s) addressed; potential effectiveness
	Plan Guidelines; and • Ensuring that watershed protection is considered in the California Environmental Quality Act process. • Continue to implement watershed classification and assessment efforts of SCBWMI. (C-16, C-19 & C-31)					
CB-10/NB-2 (22)	*Measures associated with utilizing the Sediment Characteristics and Contamination Environmental Indicator*. These shall include utilizing results of SEIDP[6] Indicator #5 (Sediment Characteristics and Contamination) to investigate development of an environmental indicator and investigate the linkage with SFEI sources and loading work effort. (C-6 & C-21)	SCVURPPP & Co-permittees		The SCVURPPP, at the current time, does not plan to directly develop an indicator. Ongoing efforts, as noted below, are being looked as a potential indirect indicator. The SCVURPPP in collaboration with several other Bay Area stormwater programs (San Mateo, Fairfield-Suisun, Vallejo, Marin, and Contra Costa) are working together on the second year of the PCB and Mercury Control Program. The first year report entitled " Joint Stormwater Agency Project To Study Urban Sources of Mercury and PCBs" was submitted to the RWQCB in April 2001 consistent with the Urban Runoff permit requirements (9c and 9e). The work effort is also being coordinated with the RWQCB's PCB and Hg TMDL work groups. The second year report should be available by March/April 2002. The SCVURPPP will implement the PCB Work Plan contained in Volume II of the FY02-03 Work Plan. Additional monitoring and the use of sediment monitoring in various watersheds is identified in the SCVURPPP's MY-RWMP (see Volume II of the FY02-03 Work Plan). The SCVURPPP considered this activity as part of it's Continuous Improvement Process and, at this point in time, intend to 1) continue ongoing street sweeping efforts		SEIDP Indicator #5 examining relationship between sediment quality and urbanization; unknown effectiveness

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Baseline Number (Dialogue[2])	Description	Lead Party		Status of FY 01-02 Baseline Actions	Follow-up Actions	Source (s) addressed; potential effectiveness
				described in the Programs Performance Standards and the		
CB-11	*Measures to improve street sweeping controls and storm water system operation and maintenance controls to reduce copper in stormwater discharges.* These shall include consideration of need for improvements to existing street sweeping controls and storm water system operation and maintenance controls and standard operating procedures for disposal of collected materials. (C-29)	SCVURPPP		The SCVURPPP considered this activity as part of it's Continuous Improvement Process and, at this point in time, intend to 1) continue ongoing street sweeping efforts described in the Programs Performance Standards and the Co-permittees Management Plans, and 2) consider this activity as a low priority and not commit any additional resources to investigate the topic. The SCVURPPP and Co-permittees will investigate methods to provide quantitative data on the tons of material removed and disposed of as part of their Annual Reports. Summer/Fall 2002.		Additional effectiveness uncertain; evaluation of cost-benefit and cost-effectiveness of additional controls necessary
CB-12	*Measures to control copper discharges from pools and spas*. These shall include maintaining existing education and outreach programs for pools and spas.	SCVURPPP & Co-permittees		The SCVURPPP work group will produce an updated brochure that will contain a sticker that can be peeled off the brochure for placement on swimming pool pump equipment. The brochure will give detailed information on appropriate methods of draining swimming pool water and disposing of filter debris. The sticker is eant to be placed on swimming pool equipment to serve as a reminder to not drain pool water into the stormdrain. The brochure text and graphics will be revised by in the Spring of 2002 and produced and distributed to residential pool owners in the Santa Clara Valley during the summer of 2002. **Co-permittee Actions:** All Co-permittees have committed to distribute brochure. Palo Alto is researching a relatively new non-copper alternative algicide. The product ties-up phosphorus, reducing availability of a needed nutrient. The		Copper from water supply and algaecide use, probably extremely small load; effectiveness of BMPs good.

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Baseline Number (Dialogue[2])	Description	Lead Party		Status of FY 01-02 Baseline Actions	Follow-up Actions	Source (s) addressed; potential effectiveness
				product is being reviewed to determine whether there are other problems with it.		
CB-15/NB-5	*Measures to evaluate effectiveness of Performance Standards and identify cost-effective modifications to reduce discharges of copper.* These shall include utilizing results of SEIDP to evaluate effectiveness of related SCVURPPP Performance Standards and identify cost-effective modifications (C-6 & C-21)	SCVURPPP & Co-permittees		As part the SCVURPPP & Co-permittees Continuous Improvement Process the construction inspection standards were reviewed and improved. The SCVURPPP has proposed that the construction inspection PS be considered the topic for the next annual review of performance standards (see Section 7 of Volume I of the FY02-03 Work Plan). The SCVURPPP will brief the BMM/RS on the status of efforts on this topic.		NA (Potential Environmental indicator(s))
CB-16	*Measures to establish an environmental clearinghouse.* These shall include assisting the SCBWMI in establishing an information clearinghouse and tracking and disseminating new scientific research on copper toxicity, loadings, fate and transport, and impairment of aquatic ecosystems	SCBWMI – CORE Group (assistance via SCVURPPP)		See CB-5.3 above.	The SCVURPPP will follow-up with the SVTC on preparing a draft scope of work as noted above under for CB 5.3.	NA (Potential education/outreach and communication mechanism)
CB-17	*Measures to reduce uncertainty associated with the Lower South San Francisco Bay Impairment Decision.* These shall include assisting the SCBWMI in tracking and encouraging the investigation of several important topics that influence uncertainty with Lower South San Francisco Bay Impairment Decision[7]	SCBWMI – Core Group (assistance via POTW and SCVURPPP and Co-permittees)		The only specific activity planned at this time is: The CSJ is conducting a bioassessment study in the lower South Bay to cooperatively develop, with academic and regulatory communities, bioassessment techniques that could lead to site-specific environmental indicators for the South Bay. The City of San Jose entered into contract with San Francisco State University, Romberg Tiburon Center in June 2001, to develop and conduct a pilot monitoring program of the plankton (phytoplankton/zooplankton) of the lower South Bay. This pilot monitoring will provide guidelines for long-		NA (Special Studies)

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Baseline Number (Dialogue[2])	Description	Lead Party		Status of FY 01-02 Baseline Actions	Follow-up Actions	Source (s) addressed; potential effectiveness
	• Phytoplankton toxicity and movement (Impairment Assessment Report Section 5.3.1) • Sediment cycling • Loading uncertainty Encourage incorporation of appropriate bioassessment tools into ongoing monitoring programs to track presence of copper-sensitive taxa in LSB.			term monitoring and recommendations of indicators of ecosystem condition. This project consists of two phases. In the initial phase (approximately two years) existing data are used to develop a monitoring plan, including potential indicators of ecosystem condition, and to conduct preliminary monitoring. In the second phase (also approximately two years) field work is conducted to test and further refine the monitoring plan and proposed indicators. A Technical Advisory Group has been organized to provide program direction and technical review and to better facilitate interagency coordination in designing and conducting field work and analysis. Stakeholder groups represented on the advisory committee include the United States Geological Survey, Interagency Ecological Program, Environmental Protection Agency, San Francisco Estuary Institute, Regional Monitoring Program, San Francisco Regional Water Quality Control Board, San Francisco State University, and the City of San Jose. This group will begin meeting in March/April 2002. Quarterly sampling events occurred in August and November 2001 to assess plankton community composition and conventional water chemistry in the South Bay. The next quarterly sampling event is scheduled to occur in late February 2002. Acquisition of historical data has commenced. These data are being used in a thorough quantitative analysis of plankton composition and abundance, and possible covariance with water quality conditions. The next project status report is due in June 2002. Nothing done.		

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Baseline Number (Dialogue[2])	Description	Lead Party		Status of FY 01-02 Baseline Actions	Follow-up Actions	Source (s) addressed; potential effectiveness
	Prepare issue paper on feasibility and cost of addressing phytoplankton toxicity questions	RWQCB				
CB-18	*Measures to investigate important factors that influence copper fate and transport.* These shall include assisting the SCBWMI in tracking and encouraging the investigation of important factors that influence copper and fate and transport.	SCBWMI – Core Group (assistance via POTW and SCVURPPP and Co-permittees)		The only specific activity planned at this time is: The CSJ will continue to track the availability of the SFO airport data and update the BMM/RS on a semi-annual basis (twice per year).		NA (Special Studies)

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Baseline Number (Dialogue[2])	Description	Lead Party		Status of FY 01-02 Baseline Actions	Follow-up Actions	Source (s) addressed; potential effectiveness
	• Investigate flushing time estimates for different wet weather conditions • Investigate location of northern boundary condition • Determine Cu-L1 and L2 complex concentrations • Investigate algal uptake/toxicity with competing metals					
CB-20	*Measures to revise the Copper Conceptual Model Report findings.* These shall include assisting the SCBWMI and the POTWs that discharge to Lower South SF Bay in revising the Copper Conceptual Model Report uncertainty table based on newly-available information and producing a status report. In particular, these activities will include revising the conceptual model uncertainty table based on newly-available information as part of the Dischargers' and POTWs' next NPDES permit applications.	SCBWMI (with assistance from POTWs and SCVURPPP & Co-permittees)		Nothing done at the current time. Appropriate updates will be considered as part of NPDES Permit application process.		Unknown
CB-21 (26 & 31)	*Measures to discourage architectural use of copper.* These shall include assistance to the SCBWMI in the following areas: 1-SCVURPPP & Co-	Palo Alto		1-Palo Alto staff conducted an evaluation of stormwater pollution loads and BMPs related to the architectural uses of copper. The evaluation was originally completed in		Ornamental copper (roofs, gutters); probably very small (<1%) of load; effectiveness

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Baseline Number (Dialogue[2])	Description	Lead Party		Status of FY 01-02 Baseline Actions	Follow-up Actions	Source (s) addressed; potential effectiveness
	permittees evaluate feasibility of discouraging architectural use of copper & explore feasibility of related policy	(Lead)		November 2000 and revised in March 2001. The report presents an "order-of-magnitude" estimate of the amount of copper released from roofs and other architectural features in the Palo Alto service area. The report noted that it is believed that copper releases are approximately 300 lbs./yr and represents about 20% of the total copper load in the local creeks. The report is on www.city.palo-alto.ca.us/cleanbay. Palo Alto's staff has developed a draft ordinance regarding use of architectural copper. Nothing planned at the current time other than to track Palo Alto ordinance.		of BMPs probably good
	2-Promote Green Building principles and identify measures to investigate as part of Phase I	SCBWMI (with assistance from the SCVURPPP and Co-permittees)		2-CSJ staff monitored the development of Green Building policies and recommendations for opportunities to discourage architectural use of copper. Opportunities to discourage architectural use of copper will be sought in the development of the San Jose LEED Certified rating system, explained below. The City adopted Green Building policies and recommendations June 19, 2001. Per the policies and recommendations, City buildings greater than 10,000 square feet are to meet San Jose Leadership in Energy and Environmental Design (LEEDTM) Certified rating beginning with FY 02-03 budget proposals for City projects. LEEDTM		

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Baseline Number (Dialogue[2])	Description	Lead Party		Status of FY 01-02 Baseline Actions	Follow-up Actions	Source (s) addressed; potential effectiveness
				is a rating system for determining the extent of "green-ness" in a development. In addition, per the policies and recommendations, the City is to provide incentives and educational programs to encourage private sector facilities to achieve a San Jose LEEDTM Certified rating. A Cool Roofs program and a Green Building lecture series were initiated to fulfill those requirements of the policies and recommendations.		

1 Annual Reports of NPDES permitted agencies (POTWs and SCVURPPP) will contain a summary of the status of all Copper Action Plan items.

2 Copper Dialogue control measures numbered 1, 2, 3, 4, 5, 7, 8, 9, 10, 11, 14, 15, 21, 23, 24, 26, 28, 29, 31, 32, and 33 are currently being conducted by the SCVURPPP & Co-permittees as defined within the URMP. The SCVURPPP & Co-permittees will continue to implement the controls as defined within the URMP and modify, as appropriate, through the SCVURPPP & Co-permittees Continuous Improvement process. (See Appendix 2 of the CAP for a summary of the current Program activities relative to dialogue measures.

3 Continuous Improvement activities identified by the Urban Runoff Permit Re-issuance Work Group as part of the SCVURPPP permit re-issuance are contained in Table 3 "Urban Runoff Permit Re-issuance Work Group – Box 3: Summary of Continuous Improvement Items" (dated June 23, 2000).

4 References refer to measures identified as part of the SCVURPPP Metals Control Measures Plan (MCMP, prepared by WWC/EOA, 1997). MCMP measures are part of the 1997 SCVURPPP Urban Runoff Management Plan (URMP).

5 These measures have largely been replaced by SCBWMI activities. Specific implementation actions are planned for inclusion in the Watershed Alternatives report & Watershed Action Plan. The Watershed Assessment Subgroup of the SCBWMI considered the CONCUR paper as input in drafting the Watershed Alternatives paper.

6 The Stormwater Environmental Indicators Demonstration Project (SEIDP) is part of USEPA's Environmental Indicators/Measures of success project. The SEIDP is the third phase of EPA's program that focuses on local demonstration projects and the testing of indicators in the Walsh Ave. catchment, water quality indicators, programmatic indicators, social indicators, and site indicators are being evaluated to gauge Program implementation. Twenty different indicators are under review.

7 See Table D "Task 1: Conceptual Model Report for Copper and Nickel in Lower South San Francisco Bay" final report, December 1999 (Contained in Appendix 4-2

Appendix D

Avian Botulism Report

Avian Disease Prevention Program
Monitoring in Artesian Slough, Coyote Creek, and Alviso Slough
June – November 2001

Prepared for
City of San Jose
Department of Water Pollution Control

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Introduction

Avian botulism is a neurological disease caused by ingestion of a toxin produced by the bacterium *Clostridium botulinum*. Symptoms include inability to fly, followed by paralysis of the legs. As the disease progresses, the inner eyelid and neck muscles are also paralyzed. Affected birds often drown, as they are no longer able to hold their heads out of the water (Friend 1999). Losses of waterfowl to avian botulism vary from year to year, but can reach tens of thousands of birds and historically have reached hundreds of thousands (Hunter 1971, Woodin 1987). Some of the environmental conditions which can influence an outbreak of avian botulism are warm and shallow water, fluctuating water levels, high ambient temperatures, presence of vertebrate and invertebrate carcasses, poor water quality, and rotting vegetation. Outbreaks of avian botulism can be minimized by early detection of the disease and removal of any carcasses found in the area (Friend 1999).

Staff and volunteers of the San Francisco Bay Bird Observatory (SFBBO) monitored Artesian Slough, Coyote Creek, and Alviso Slough for the presence of avian botulism from June -November 2001 (Figures 1 and 2). The study areas include tidal areas with fresh to brackish water. In addition, Artesian Slough receives freshwater effluent from the San Jose Water Pollution Control Plant (SJWPCP). We conducted this study under contract with the City of San Jose for the SJWPCP as part of a long term monitoring program begun in 1982.

SFBBO was asked to assess two additional areas due to large numbers of dead waterfowl. At the request of SJWPCP personnel, SFBBO staff went to the sludge ponds to help identify a disease outbreak in June. In September, SFBBO also assisted in identification of a disease outbreak at the Coyote Creek Lagoon in Don Edwards San Francisco Bay National Wildlife Refuge (DESFBNWR, Figure 1). Although SFBBO staff was asked for assistance in identifying botulism outbreaks, this report focuses only on the contract study area.

Methods

We conducted a total of 36 surveys by boat, by car, and on foot. The SFBBO staff and volunteers used a 14-ft. inflatable boat with a 15-hp engine for 23 surveys to inspect Artesian Slough and Coyote Creek (Figure 1). We conducted 13 surveys of Alviso Slough on foot (Figure 2). We divided survey areas into sections that remain consistent from year to year to aid in data comparisons.

We collected dead and diseased wildlife whenever possible to prevent the spread of avian disease and to reduce the severity of a potential botulism outbreak. We kept dead vertebrates frozen at SFBBO headquarters while waiting for proper disposal at a licensed facility (Koefran Services, Sacramento, California). Sick and injured wildlife were given first aid and then transported to

Wildlife Rescue, Kappy Sprenger, or Jennifer Smith; all licensed wildlife rehabilitation facilities.

For each animal collected, we recorded the number of the section where found, date collected, common name and sex of animal if known.

Results

Between June 20 and November 10, 2001, a total of 232 vertebrates were collected by SFBBO staff in Artesian Slough and Coyote Creek: 225 birds, 1 muskrat, and 6 fish. Of the 225 birds obtained, 147 were dead, 72 sick and 13 injured (Table 1). After rehabilitation, Wildlife Rescue released 63% of the sick and injured birds collected back into the wild, 24% died or were euthanized. Due to the volume of birds handled during the outbreaks the fate of some of the individual birds was difficult to track. Thus, 13% of the sick birds have undetermined outcomes.

We found no dead, sick, or injured animals on any survey of Alviso Slough.

In June 2001, SJWPCP personnel contacted SFBBO staff regarding a large die-off in the sludge ponds of the SJWPCP. Although not included in our contracted study area, SFBBO staff collected 12 dead and three sick birds (mostly unidentified ducks) showing characteristic symptoms of avian botulism on June 20, 2001. Faced with a probable botulism outbreak, SJWPCP personnel subsequently monitored the sludge ponds and collected 1265 dead vertebrates (1198 birds and 67 mammals) and 187 sick birds June-September (D. Watson, pers. comm.).

Probable botulism outbreaks occurred in Artesian Slough and Coyote Creek at the beginning of August and the end of September into October (Figure 3). In August, the numbers of vertebrates collected peaked at 85, mostly waterfowl found in sections 8 and 9 of the survey area (Tables 2 and 3). At the end of September, we again found large numbers of dead and sick waterfowl in sections 8 and 9. Section 9 borders Coyote Creek Lagoon and a visual inspection from the mouth of the lagoon on September 29, indicated that there were more sick and dead in that area (Figure 1). As this is also out of our contract area, SFBBO notified employees of the DESFBNWR of the situation. Between October 3-26, 2001, their staff conducted eight airboat surveys of Coyote Creek Lagoon and collected a total of 248 dead and 67 sick birds, and 1 dead fish (Buffa 2001).

Discussion

Of the 85 sick and injured birds collected by SFBBO in the study area, 58 had classic symptoms of botulism. Several of the gulls appeared to be suffering from

migrating or molting stress and some may have had aspergillosis, a fungal respiratory tract infection diagnosed by severe difficulty in breathing (Friend 1999).

Botulism occurs in areas of shallow, warm water, high winter rainfall, poor water quality, high temperatures, and dense concentrations of birds. Rainfall for January through March of 2001 was higher than average in the San Jose area. While overall temperatures for the summer and early fall months in San Jose did not appear significantly higher than normal, the overnight lows were above average and higher than average temperatures in early June (National Weather Service web site).

Locally, the Guadalupe Slough located to the south of the study contract area had a botulism incident in July 2001 (Figure 1, Strong et al 2002). Elsewhere in California, the incidence of botulism was low. For example, the Lower Klamath NWR reported bird mortality at 649 from August 7, 2001 to October 4, 2001. Both the Sacramento NWR Complex and the Sonny Bono Salton Sea NWR have thus far, reported mortalities of 541 birds and 151 birds respectively (U. S. Geological Survey 2001).

Conclusion

In Artesian Slough and Coyote Creek we found evidence of two probable avian botulism outbreaks. We found no evidence of avian botulism in Alviso Slough in 2001. Although outbreaks of avian botulism are poorly understood, they have been linked with wastewater discharge into marshes. As such, we suggest monitoring to continue during warm weather when many shorebirds or waterfowl are likely to use the area (Friend 1999).

Acknowledgments

We are indebted to the many SFBBO volunteers who participated in this monitoring study, including James Barse, Zak Barse, Peg Bernucci, Diana Bonogofsky, David Hembry, Philip Higgins, Mary Anne Melby, Michael Melby, Ray Rardin, Corynn Roskelley, Kar and Terry Stoker, Peg Woodin, and especially Kappy Sprenger and Wildlife Rescue who rehabilitated many sick and injured birds.

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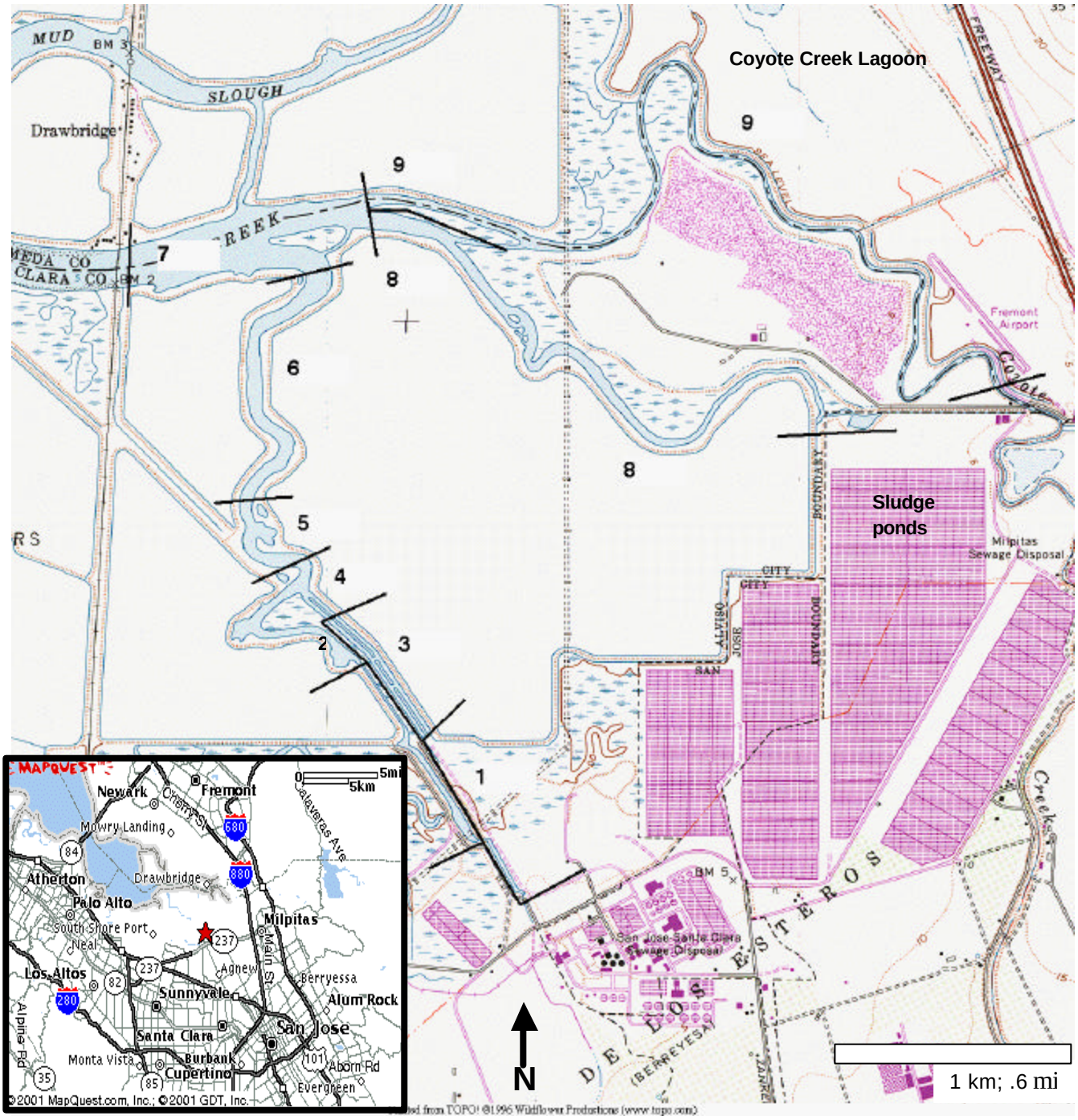

Figure 1. Locations of all sections along Artesian Slough (1-6) and Coyote Creek (7-9) monitored for avian botulism for SJWPCP, June-November 2001. Also indicated are the SJWPCP sludge ponds and the DESFBNWR Coyote Creek Lagoon, locations of avian botulism die-offs in 2001.

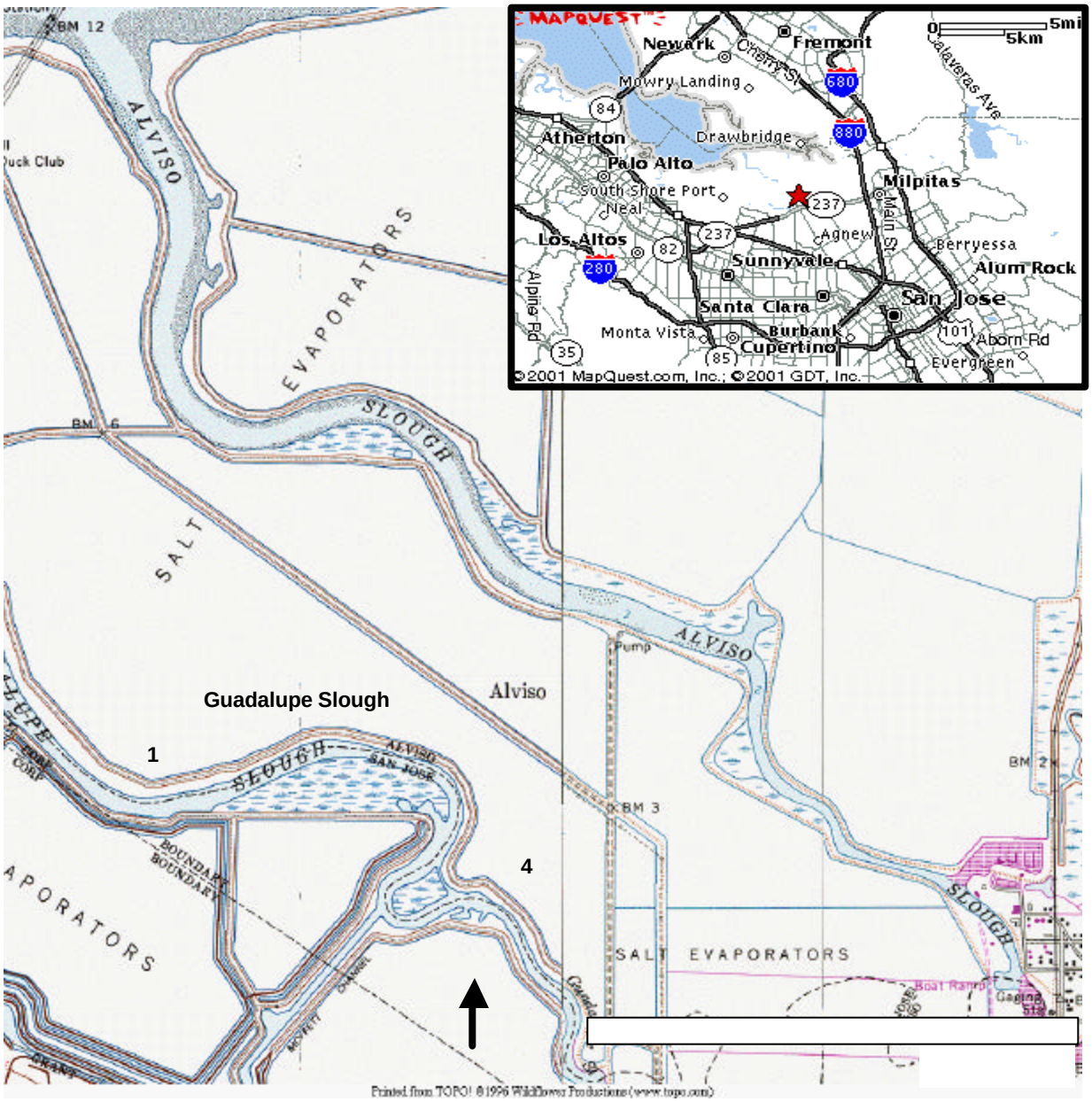

Figure 2. Area of Alviso Slough monitored for avian botulism for SJWPCP, June-November 2001. We detected no avian botulism along the study area. Guadalupe Slough is located south of the contracted study area; numbers indicate sections where avian botulism occurred in July 2001 (Strong, et al 2002).

Figure 3. Numbers of dead, sick & injured waterbirds found in Artesian Slough and Coyote Creek during each survey, June-November 2001.

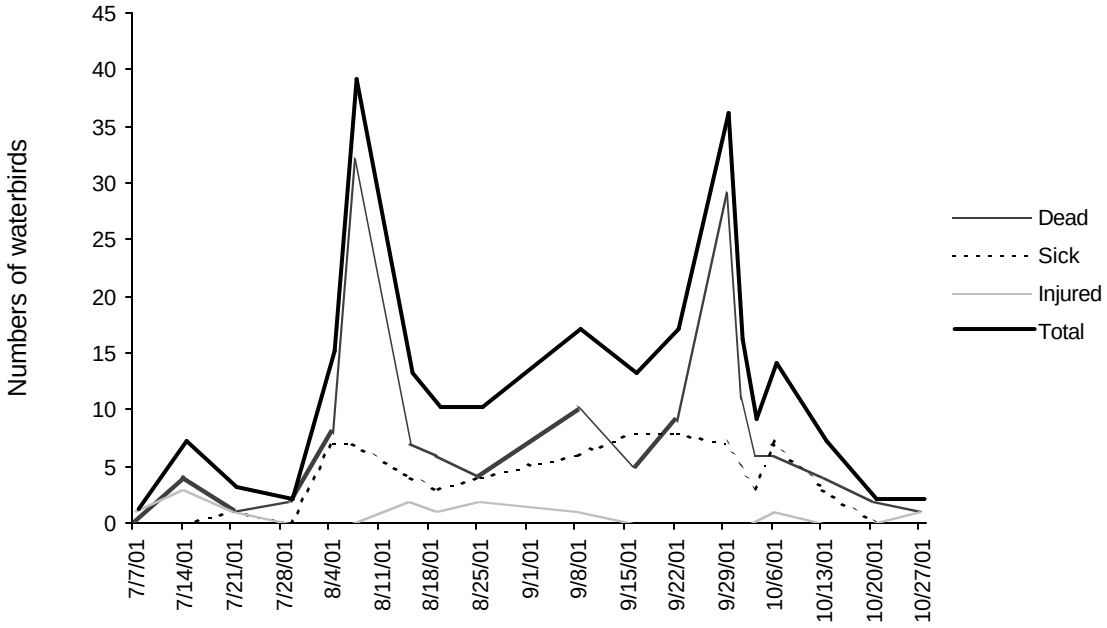

Table 1. Species summary of dead, sick, and injured animals found in Artesian Slough and Coyote, 2001.

	Scientific name	Dead	Sick	Injured	Total
Gulls					
California Gull	*Larus californicus*	6	6	8	20
Herring Gull	*L. argentatus*	0	2	2	4
Ring-billed Gull	*L. delawarensis*	2	0	0	2
Unidentified Gull	*L. occidentalis*	8	1	0	9
Western Gull		3	4	2	9
Waterfowl					
Gadwall	*Anas strepera*	21	23	1	45
Green-winged Teal	*A. crecca*	25	8	0	33
Mallard	*A. platyrhynchos*	52	13	0	65
Northern Shoveler	*A. clypeata*	16	14	0	30
Unidentified Duck		1	0	0	1
Shorebirds					
American Avocet	*Recurvirostra americana*	1	0	0	1
Least Sandpiper	*Calidris minutilla*	1	0	0	1
Unidentified Sandpiper		1	0	0	1
Other Birds					
American Coot	*Fulica americana*	2	1	0	3
Unidentified Bird (wings only)		1	0	0	1
Fish					
Unidentified Fish		6	0	0	6
Mammal					
Muskrat	*Fiber zibethicus*	1	0	0	1
Total		147	72	13	232

Table 2. Monthly totals of dead, sick, and injured animals found in Artesian Slough and Coyote Creek, 2001.				
	Dead	Sick	Injured	Total
Gulls				
July	4	1	5	10
August	6	4	5	15
September	6	6	1	13
October	3	2	1	6
Waterfowl				
July	0	0	0	0
August	47	20	0	67
September	44	23	0	67
October	24	15	1	40
Shorebirds				
August	1	0	0	1
September	1	0	0	1
October	1	0	0	1
Other Birds				
September	2	0	0	2
October	1	1	0	2
Fish				
July	3	0	0	3
August	2	0	0	2
September	1	0	0	1
Mammals				
October	1	0	0	1
Total	147	72	13	232

Table 3. Collection locations of dead, sick, and injured animals in Artesian Slough and Coyote Creek, 2001 (See Figure 1 for map location details.)				
Section and species	Dead	Sick	Injured	Total
1				
Gadwall	0	1	0	1
Unidentified Gull	1	0	0	1
3				
California Gull	1	1	1	3
Unidentified Fish	2	0	0	2
5				
Ring-billed Gull	1	0	0	1
California Gull	0	1	0	1
Mallard	1	0	0	1
Northern Shoveler	0	1	0	1
Unidentified Fish	1	0	0	1
6				
American Avocet	1	0	0	1
Herring Gull	0	0	2	2
California Gull	4	2	4	10
Western Gull	1	2	1	4
Green-winged Teal	0	1	0	1
Mallard	1	0	0	1
Northern Shoveler	0	1	0	1
Unidentified Gull	1	1	0	2
Unidentified Fish	1	0	0	1
7				
California Gull	1	0	0	1
Western Gull	0	1	1	2
Unidentified Gull	2	0	0	2
8				
American Coot	0	1	0	1
Western Gull	2	1	0	3
Herring Gull	0	1	0	1
California Gull	0	2	2	4
Mallard	45	13	0	58
Gadwall	17	12	1	30
Green-winged Teal	21	5	0	26
Least Sandpiper	1	0	0	1
Muskrat	1	0	0	1
Northern Shoveler	10	5	0	15
Unidentified Duck	1	0	0	1
Unidentified Gull	2	0	0	2
Unidentified Sandpiper	1	0	0	1
Unidentified Fish	1	0	0	1

Table 3. Continued.				
9				
American Coot	2	0	0	2
Herring Gull	0	1	0	1
Ring-billed Gull	1	0	0	1
California Gull	0	0	1	1
Gadwall	4	10	0	14
Green-winged Teal	4	2	0	6
Mallard	4	0	0	4
9				
Northern Shoveler	6	7	0	13
Unidentified Bird (wings only)	1	0	0	1
Unidentified Gull	3	0	0	3
Unidentified Fish	1	0	0	1
Total	147	72	13	232

Appendix E

Outreach Strategy

For pollutant reduction outreach, the City has both a short-term and long-term approach:

- Short-term (minimize pollutants) - Reduce immediate pollutant loads to the South San Francisco Bay by targeting selected polluting behaviors for reduction.
- Long-term (pollution prevention) - Develop a sufficient knowledge base within the population so they
  1) Better understand the impact of their behaviors on the environment,
  2) Value and select less polluting or non-polluting behaviors.

Short-term Approach - Minimize Pollutants

The City is able to identify polluting behaviors and target them for elimination or reduction by using its knowledge of pollutants and how those pollutants enter the water. Once identified and targeted, non-polluting behavioral alternatives are introduced to the target audiences. The best ways to change behaviors in each audience are identified through the use of surveys, focus groups, and presentations from subject matter experts.

Individual Publicly Owned Treatment Works (POTWs) are negligible sources of some pollutants, such as mercury. The City participates and supports regional programs and activities that offer the greatest potential to reduce these pollutants. This has the added benefits of consistent regional messages and shared cost of program implementation.

Long-term Approach - Pollution Prevention

This approach consists of:

- Reiterating fundamental watershed and water pollution prevention messages to the general population over a long period of time, with the goal of changing behavior and reducing current pollutant loads to the maximum extent practicable.
- Introducing fundamental watershed and water pollution prevention messages to the next generation of decision-makers through selected school activities.

Appendix F

Outreach Media Relations Project

Appendix G

Outreach Activities for July 2001 to June 2002

The following two tables have been discontinued from current and future *CBS Reports*:

- Outreach material currently available for use by City.
- Distribution of Outreach Material for the reporting period.

A copy of the above tables can be provided upon request.

The following two tables have been permanently discontinued from current and future *CBS Reports*, and will not be maintained separately from the above lists:

- Printed materials distributed by City Inspectors in the Illicit Connections/Illegal Discharges Program.
- Printed materials developed by the City and used by Watershed Protection Staff.

In all, over 7500 outreach pieces were distributed to Watershed Protection Group audiences during the reporting period. This value is based on logs of materials distributed to staff, either as replacement materials for pieces distributed to the public and businesses, or supplied directly to ESD staff for distribution at events and classes. It includes materials mailed to residents and businesses upon their request, and the IU newsletter. It also includes material distributed as part of the WMI program. "Premium" (event give-away) items are not included in the total.

A list of events that City staff attended in order to distribute the City's outreach messages is included.

OUTREACH EVENTS JULY 2001 THROUGH JUNE 2002

Wacky Watershed Workshop	July 14, 2001
Northern California Plant Engineer's Show	August 13, 2001
Home and Garden Show	August 24-26, 2001
Coastal Creek Cleanup	September 15, 2001
ASML Presentation	September 18, 2001
Mayor's Volunteer Recognition Fair	September 29, 2001
Youth Science Institute Wildlife Festival	September 30, 2001
United Neighborhoods Event	October 2001
Home and Garden Show	Jan 11-13, 2002
Community Policing Center Opening (Alviso)	March 16, 2002
First annual Vietnamese Fair	March 16, 2002
Children's Wellness Fair	April 13, 2002
Earth Day/ ULFT event	April 20, 2002
Spring in Guadalupe Gardens	April 27, 2002
Creek Cleanup	May 18, 2002
District 6 Resource Fair	June 9, 2002
Home Show	June 7-9, 2002

Appendix H

Tributary Tribunes

spring 2002, fall 2001, and summer 2001 editions

Appendix I

Compliance Recognition Ad

Appendix J

Spill Resources Sheet