CLEAN BAY STRATEGY
(South Bay Watershed Activities)

JULY 1999

San Jose/ Santa Clara
Water Pollution Control Plant

Administered by the
ENVIRONMENTAL SERVICES DEPARTMENT

City of San Jose

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EXECUTIVE SUMMARY

In June 1998, the San Francisco Bay Regional Water Quality Control Board (Regional Board) adopted Order No. 98-052, a revised discharge permit[1], for the San Jose/Santa Clara Water Pollution Control Plant (Plant). This discharge permit was developed in cooperation with the Santa Clara Basin Watershed Management Initiative (WMI) and has three basic objectives:

1. Maintain the high level of pretreatment and treatment performance;
2. Initiate technical studies to develop information that will support scientifically based regulatory decisions for future discharge permits; and
3. Continue cooperative effort to develop a watershed management program.

This report documents progress on permit elements during the period January 1, 1999 to June 30, 1999.

The report is organized based on major elements of the Plant's strategy to implement the discharge permit, which focuses on integrating programs to achieve cost-effective protection of the South San Francisco Bay (South Bay). These elements are shown in Figure 1 and described below:

- Flow reduction;
- Pollutant reduction;
- Research and special studies;
- Regional cooperative efforts; and
- Public outreach.

See Appendix A for further details on the schedule for completion and a to-date status on the various elements.

Flow Reduction

Through a combination of water recycling and water conservation efforts, the Plant has remained under 120 million gallons per day (mgd) effluent flow. The following major efforts have contributed to the success of the flow reduction campaign:

[1] National Pollutant Discharge Elimination System (NPDES) Permit

FIGURE 1

CLEAN BAY STRATEGY

July 1999 Report Elements

Section	*Highlights for the Reporting Period*
FLOW REDUCTION	South Bay Water Recycling Flow Audit Study Indoor Water Conservation
POLLUTANT REDUCTION	New Industry/Development Headworks Loading Analysis Organic Source investigation Industrial Partnerships
RESEARCH AND SPECIAL STUDIES	Draft Impairment Assessment Report
REGIONAL COOPERATIVE EFFORTS	Signatory Event on Earth Day 1999 Regulatory Executive Forum Program Implementation Objectives
PUBLIC OUTREACH	Foreign Language Broadcast

- Indoor Water Conservation programs, particularly Ultra Low Flush Toilet retrofits, have reduced inflows by more than 2 mgd during the reporting period;
- Industrial Partnerships, the Flow Audit Study Program, and other industrial effort have contributed to significant reduction of flow from permitted industrial users; flow is down by 1.60 mgd from the 1998 daily average. There have also been 1.63 pounds per day (ppd) additional reductions in copper and 1.38 ppd nickel.
- SBWR is delivering 5.7 mgd to customers; and
- The Plant has authorized $720,000 toward the purchase of Bair Island to fulfill its marsh mitigation requirements.

Pollutant Reduction

The Plant has met its pollutant limits throughout the reporting period. Over the last year, there has been an annual reduction of 465 pounds copper and 1,001 pounds nickel to the South Bay.

For the period between June 1998 and May 1999, copper averaged 3.5 µg/l, ranging from 1.4 - 8.0 µg/l. This is a reduction from the period between June 1997 and May 1998 when copper averaged 3.98 µg/l and ranged from 2.0 - 8.8 µg/l.

For the period between June 1998 and May 1999, nickel averaged 5.7 µg/l, ranging from 4.0 - 9.0 µg/l. This is a reduction from the period between June 1997 and May 1998 when nickel averaged 7.2 µg/l and ranged from 5.0 - 12.0 µg/l.

This success is attributable to both high-level plant performance and a very effective pretreatment program.

The following major efforts occurred during the reporting period:

- The new industry/development program provided significant input into the City's development review process;
- Workplans on headworks loading and organic sources programs were implemented; and
- Industrial Partnerships engaged dischargers in evaluating innovative pollutant reduction techniques.

Research and Special Studies

The City is funding the development of technical studies to support the development of a Total Maximum Daily Load (TMDL) for copper and nickel for South San Francisco Bay. The recently released draft

Impairment Assessment Report concludes that impairment of the South Bay due to copper and nickel is unlikely. Reaching consensus on the recommendations in this report will be the focus of stakeholder meetings during the summer of 1999. Other research studies are discussed in detail in the report.

Regional Cooperative Effort

Progress on the Santa Clara Basin Watershed Management Initiative (WMI) is continuing. Over the last six months, highlights include:

- Signatory event on Earth Day 1999;
- Progress on the watershed assessment;
- Establishment of a regulatory executive forum to facilitate information exchange with high level decision makers; and
- Development of implementation objectives.

The pilot watersheds grant program is providing resources and support for community and stakeholder involvement in the local watershed management process.

Outreach

Outreach during the reporting period supported the important efforts highlighted above by focussing on flow reduction and water conservation, watershed management education, and foreign language broadcasts aimed at reaching Spanish-and Vietnamese-speaking audiences.

Next Steps

San Jose and the tributary cities and agencies face a number of challenges attempting to balance environmental protection with social and economic impacts. The City, as administrator of the Plant, has pursued an integrated strategy to maximize environmental protection in a cost-effective manner. The Plant's current discharge permit is consistent with this strategy, including mandates for water conservation, watershed management, scientific studies, and sustained high-level performance of the Plant and pretreatment programs. The City will continue to develop and implement comprehensive responses to water related issues.

Priorities over the last six months centered on flow and pollutant reduction issues associated with major land development proposals, participation in the WMI, and Total Maximum Daily Load (TMDL) studies.

The WMI process and the TMDL program are two very challenging environmental projects, both from a technical and stakeholder standpoint. Lessons learned include the following:

- Conceptual model development provides an effective tool to represent complex scientific and technical issues and to communicate these processes to stakeholders;
- Confirmation of beneficial use impairment and Section 303(d) listing should be performed before formal TMDL development;
- Program success depends upon an effective communication, coordination and integration of the activities of highly diverse interest groups;
- Continued stakeholder involvement is critical to the overall acceptance and implementation of watershed and TMDL results and targets;
- Consensus-based approaches toward contentious environmental issues are extraordinarily time consuming and resource intensive;
- TMDL decisions require a scientific and technical foundation, however policy decisions will be necessary to address remaining uncertainties.

Program efforts for the next six months will focus on the following:

- Increasing stakeholder involvement and outreach;
- Continue developing information on headworks loading and organic sources;
- Development of a bioassessment workplan;
- Continued Industrial Partnerships to address pollutant loading and flow; and
- Ongoing efforts to reduce flow.

ABBREVIATIONS

Audit	Flow Audit Study
BADA	Bay Area Dischargers Association
BAPPG	Bay Area Pollution Prevention Group
BMP	Best Management Practice
BNR	Biological Nutrient Removal
BOD	Biological Oxygen Demand
CBS	Clean Bay Strategy
City	City of San Jose
ESD	Environmental Services Department
FIP	Financial Incentives Program
IU	Industrial User
IU Academy	Industrial User Academy
MAS	Mass Audit Study
NPDES	National Pollutant Discharge Elimination System
O&M	Operation and Maintenance
Plant	San Jose/Santa Clara Water Pollution Control Plant
POTW	Publicly-Owned Treatment Works
RCMP	Reasonable Control Measures Plan
Regional Board	San Francisco Bay Regional Water Quality Control Board
SBWR	South Bay Water Recycling
Water District	Santa Clara Valley Water District
WMI	Santa Clara Basin Watershed Management Initiative
South Bay	San Francisco Bay, South of Dumbarton Bridge
State Board	State Water Resources Control Board
TSS	Total Suspended Solids
ULFT	Ultra Low-Flush Toilet
URMP	Urban Runoff Management Plan

AF/yr.	Acre-foot per year
gpd	gallons per day
lf	linear foot
mgd	million gallons per day
mg/l	milligrams per liter
µg/l	micrograms per liter
ppd	pounds per day
ppt	parts per trillion

I FLOW REDUCTION

In 1990, the California State Water Resources Control Board (State Board) reported that, between 1970 and 1985, a total of 380 acres of salt marsh in the South San Francisco Bay (South Bay) had been affected as a result of increasing discharges of high-quality but fresh water effluent from the San Jose/Santa Clara Water Pollution Control Plant (Plant). This conversion from salt marsh to brackish or fresh water marsh, and consequent loss of this habitat, affects two endangered species, the California clapper rail and the salt marsh harvest mouse.

The State Board ordered[2] the Plant to take action to protect the marsh from conversion by limiting flows to a maximum of 120 million gallons per day (mgd) average dry weather effluent flow (ADWEF[3]), and to submit a mitigation proposal involving the creation or restoration of 380 acres of wetlands or equivalent habitat. The City of San Jose (City), on behalf of the Plant and its tributary agencies, proposed the South Bay Action Plan[4] in 1991. The three main components of that plan were to:

- Purchase and restore 380 acres of salt marsh properties;
- Implement indoor water conservation programs to reduce influent flows to the Plant by 15 mgd; and
- Implement a water recycling program to reduce effluent discharged to the South Bay during dry weather.

By 1996, despite significant progress in implementing the 1991 Plan, ADWEF flows still had not been brought below 120 mgd, and, in fact, had averaged 132 mgd -- probably due to the emergence of Santa Clara Valley from both a drought and economic recession. The Revised South Bay Action Plan[5] was subsequently proposed by the City and adopted by the Regional Water Quality Control Board (Regional Board). The revised plan called for expansions to the indoor water conservation and water recycling programs plus the addition of programs for industrial water recycling/reuse, inflow/infiltration reduction, and environmental enhancement pilots.

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[2] In accordance with Board Order 91-152

[3] Average Dry Weather Effluent Flow is the lowest average flow rate for any 3 consecutive months between May and October.

[4] The original San Jose Action Plan was developed and adopted by the City of San Jose in 1991, under Board Order 91-152, issued by the Regional Board

[5] The Revised South Bay Action Plan was approved in September 1997 under Board Order 97-111

A detailed look at the progress in each program is presented in the subsections that follow. The combined efforts of these programs have brought the 1999 ADWEF below 120 mgd, as shown in Table I.

TABLE I

1999 ADWEF

Month	Flow, mgd		
	Influent	Recycled	Effluent
May	108.3	3.4	104.9
June	107.4	4.5	102.9
July*	104.4	5.8	98.6

* July 1 - 25

I-A SOUTH BAY WATER RECYCLING

South Bay Water Recycling (SBWR) is an on-going, multi-year effort to reuse high quality effluent from the Plant. The goal of the program is to provide a reliable "drought-proof" water supply and protect an endangered species habitat at the south end of San Francisco Bay. There are currently 192 customers hooked up to the system, and recycled water use in July 1999 has exceeded 8 mgd.

I-A1. PHASE 1

Phase 1 facilities are designed to distribute up to 15 million gallons per day (mgd) of recycled water during the peak dry-weather months for irrigation, industrial and other purposes. As reported in January 1999, recycled water deliveries during the first season of operation reached 5 mgd to over 100 customers.

Construction of Deferred and Infill Projects

More than 50 new customers have been retrofitted to use recycled water since January 1999. In March 1999, the second remote pump station began providing services to customers in the third pressure zone (southeast San Jose). Additional large water users are expected to connect to the system before the end of the 1999 irrigation season, and a third pump station will begin operation, pushing peak summer flows to 9 mgd.

Planned infill projects included construction of approximately two miles of recycled water distribution pipe in the cities of Santa Clara, Milpitas and San Jose. As of May 1999, eight segments have been added, enabling

hookup of four customers. Two additional segments reaching 18 customers are scheduled for completion before October 1999.

Section 21 Mandatory Use of recycled water for landscape

Consistent with state law, all cities served by SBWR now have ordinances that require new developments to connect to the distribution system where recycled water is available. The program is now defining a Master Plan of the service area to facilitate implementation of these requirements. It remains to be determined what new ordinance authority, if any, may be required to compel existing water customers in the Master Plan area to retrofit to the recycled water system, and under what conditions such connection should be required.

I-A2. PHASE 2 AND MASTER PLAN

The Revised Action Plan envisioned beginning construction of a southern extension to reach large urban landscape and agricultural customers in the Coyote Valley by January 31, 2001. However, as reported in January 1999, a number of alternatives are being evaluated in the context of Phase 2 program. The program goal is to:

1. Define a Master Plan for the service area of the non-potable distribution system;
2. Select appropriate facilities compatible with the long term strategies to increase recycled water deliveries to 30 mgd by 2005; and
3. Identify long term strategies for up to 100 mgd of reuse by 2020.

The SBWR Phase 2 program is jointly sponsored by the cities and agencies tributary to the Plant and the Santa Clara Valley Water District (Water District). In addition, both near- and long-term projects are being coordinated with the Bay Area Regional Water Recycling Program to ensure that the selected projects provide maximum benefit to the community as a whole.

To date, technical memoranda have been submitted concerning the feasibility of expanding the SBWR system to deliver recycled water to additional customers within the existing service area and in Coyote Valley, as well as to industrial customers in Alameda County and agricultural customers in San Benito and Monterey counties. In addition, a number of technical workshops have been held to assess the potential for potable reuse through groundwater recharge and reservoir augmentation. To provide guidance on community values and concerns, an advisory committee was convened in March 1999, and a series of open meetings were held in June 1999 to provide opportunities for public participation.

The advisory committee is comprised of a mix of civic leaders including the Superintendent of Schools, the head of the San Jose/Silicon Valley Chamber of Commerce, the President of the Medical Association, and representatives of community, landscape and farming associations.

The advisory committee and the general public have identified a number of issues related to long-term strategies. Public acceptance of potable reuse, long-term health and environmental effects of water recycling, and the relationship between recycling, conservation and growth have all been brought up as topics for future study and development. Upon completion, these studies and discussions will result in selection of specific projects to be implemented during the Phase 2 time frame and a recommendation of long-term strategies for optimum future reuse.

I-B INDUSTRIAL RECYCLE AND REUSE

The mission of the Industrial Recycle/Reuse Program (Program) is to ensure that Industrial Users (IUs) in the Plant's service area reduce the use of potable water, reuse their own wastewater, or use SBWR water in their facilities to the largest extent possible. The goal of the Program is to develop and implement projects to attain its mission.

In keeping with the mission, the Program initiated the Flow Audit Studies (Audits) in 1998. For this reporting period, efforts were focused on completing the Audits.

Flow Audit Study

Three-person teams were assigned to assist individual dischargers in completing their Audits. Fifty-seven companies were identified as discharging over 100,000 gallons per day (gpd) in 1997. Information on flow was collected from the Source Control database and the water use data provided by water purveyors. The current status of the original 57 companies is given in Table II.

All submitted Audits will be reviewed for completeness and accuracy. The results will be summarized and included in the January 2000 Clean Bay Strategy (CBS) Update Report. Discharge data for 1998 is currently being reviewed to include new/expanded facilities into the Program. Any such facility that expects to discharge over 100,000 gpd will be added as part of their industrial discharge permitting process.

TABLE II

Status of FAS Companies

# of Facilities	Comment
28	Submitted their studies
15	Shut down their facilities or their manufacturing operation
4	Exempted; they were able to document that their actual discharge was under 100,000 gpd or they will be shutting down their facility by the end of the year
10	Extensions issued (30 to 90 days)

"Industrial Water Efficiency and Reuse" and "Cooling Towers" Workshops

Two day-long workshops were conducted. The *Industrial Water Efficiency and Reuse* workshop was held on March 31, 1999, in cooperation with the Silicon Valley Pollution Prevention Center and the Silicon Valley Manufacturing Group. This workshop, targeting the large dischargers and Audit companies, addresses recycling and reuse technologies. It also provided specific breakout sessions and a vendors' showcase. The evaluation of the workshop reflected very positive feedback from the 150^{+} attendees.

The *Cooling Towers* workshop was held on April 1, 1999. About 50 people attended this workshop, aimed at City and Tributary Agencies' staff. The purpose of the workshop was to educate staff on the recycling and discharge minimization opportunities available for cooling towers. The goal was to assist them in making recommendations and answering questions for cooling tower users.

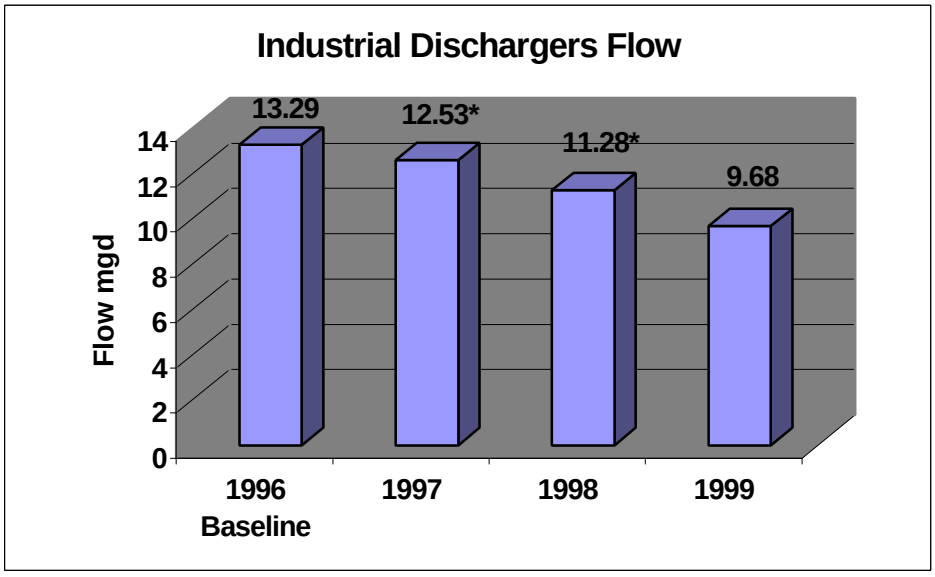
Cooperative Efforts

The Plant is continuously working with industrial dischargers to reduce their flows to the sewer system. The Program offers financial incentives and technical support to these companies.

The 1998 average discharge from industry was 9.68 mgd, as shown in Figure 2, which is a 3.61-mgd reduction from the 1996 baseline year, average of 13.29 mgd and 1.60 mgd reduction from the 1998 discharge of 11.28 mgd.

FIGURE 2

* Flow corrected in 07/99 after further analysis of the Source Control



database

The Program continued to work with industry in a variety of cooperative efforts, providing technical and staff support. The status of these efforts is summarized in Table III.

The Program is developing guidelines for industrial water reuse. These guidelines will most likely standardize the reuse requirements and assist other City Departments in their permitting process. A final copy of the guidelines will be included in the Clean Bay Strategy Report submitted January 2000.

TABLE III

Status of Cooperative Efforts

COMPANY	TYPE OF PROJECT	STATUS
The Printed Circuit Board partners (Tyco; South Bay Circuits; Paragon Electronic Systems, and HADCO Santa Clara)	Working to evaluate pollutant and flow reduction projects at their facilities	Active: See separate report Section II-B3
(The Semiconductor group Hewlett Packard, IBM, Intel, National Semiconductor, and Siliconix)	Working to conserve water and maximize reuse of industrial process flows.	Active: Information sharing and investigating resources available to assist in flow reduction projects.
Candescent Technologies (existing facility)	Recycling industrial wastewater to cooling towers and back into manufacturing processes.	Evaluating current completed recycling projects and planning future projects
Candescent Technologies (proposed facility)	Design the facility maximizing the recycling opportunities for both industrial processes and non- domestic uses.	On-hold, the company is evaluating construction of the facility
California Paperboard	Use of SBWR in the manufacturing process	On-line, evaluation phase
Hitachi	Use of SBWR in cooling towers.	Permitting phase
Maxmedia	Maximize the internal recycling opportunities for all processes. This includes recycling industrial wastewater in manufacturing, cooling towers and scrubbers.	Redesign phase to include proposed expansion of the facility. Piloting of reuse system in the facility.
Calpine	Use of SBWR in cooling towers, and evaluating its use for ultra-pure water in boilers.	Final design phase and legal agreements
San Jose State University	Use of SBWR in cooling towers	On-line
Behring Diagnostics, Inc.	Evaluating use of SBWR in cooling towers	Design and permitting phase

I-C INDOOR WATER CONSERVATION

The ongoing programs discussed below have reduced flow by more than 7 mgd since program inception. In 1997, the Revised Action Plan set new goals. The goal for the Indoor Water Conservation element was to reduce flows by 5-8 mgd between 1997 and 2002. The annual flow reduction goal was a minimum of 1 mgd. We are approximately halfway to meeting that goal, with flow reduced by 3.1 mgd to date. This fiscal year was the most successful year ever, with reductions of more than 2 mgd. This exceeds the original FY 98/99 goal of 1.5 mgd by more than 0.5 mgd.

Indoor water conservation programs focused most heavily on residential customers (as contributors of approximately 70% of Plant flows) and, especially, on the retrofit to Ultra Low Flush Toilets (ULFTs) as the single most effective residential water conservation measure. Program incentives include rebates, vouchers, and full-service installation depending on the program element. Other measures, such as retrofit to low-flow showerheads and the use of high-efficiency washing machines are also being promoted.

In the business sector, the program's efforts include ULFT retrofits and the more flexible Financial Incentive Program (FIP), which offers rebates for equipment and process changes that reduce a company's discharge to the Plant.

Table IV shows how the various elements contributed to this year's success; each program is then described in greater detail.

TABLE IV

Indoor Water Conservation

Program	FY 98/99 to Date	Flow Reduction (gpd)
ULFT Rebate Program	18,887 ULFTs	685,564
Community Partnership Program	11,284 ULFTs	338,520
MFD Voucher Program	11,884 ULFTs	666,910
CII ULFT Program	1,958 ULFTs	93,984
Financial Incentives Program	7 Projects	208,974
Other Conservation Programs	5,082 Washers	74,197
Total Flow Reduction (98/99)		**2,068,149**

I-C1. ULFT REBATE PROGRAM

The Rebate Program is offered by the Santa Clara Valley Water District and administered through local water companies. It primarily serves single-family residences by providing rebates of $75 per ULFT installed. The Plant provides marketing support for the program throughout the tributary area. Coming this fall, the District will end the ULFT Rebate Program. With the Plant providing funding and promotional support, the District will try to recapture the success of last year's effort with another limited-time offer of $100 per toilet to close this program. Specific outreach efforts are described in Section V of this report.

# ULFTs			Flow Reduction (gpd)		
FY 98/99 Goal	FY 98/99 to Date	Program Total (1992 to Date)	FY 98/99 Goal	FY 98/99 to Date	Program Total (1992 to Date)
11,000	18,887	89,041	330,000	685,584	3,477,292

I-C2. COMMUNITY PARTNERSHIP PROGRAM (CPP)

This program offers free ULFTs and installation services to "hard to reach" communities in San Jose. The second phase of CPP debuted in March 1998, with the current contract for approximately 15,000 toilets completed in June of 1999. Staff is reviewing options to continue the program in the coming fiscal year with the intent of expansion to the full Plant service area.

# ULFTs			Flow Reduction (gpd)		
FY 98/99 Goal	FY 98/99 to Date	Program Total (1996 to Date)	FY 98/99 Goal	FY 98/99 to Date	Program Total (1996 to Date)
11,377	11,284	39,907	341,310	338,520	1,499,395

I-C3. MULTI-FAMILY DWELLING (MFD) VOUCHER PROGRAM

Providing "pre-bates" of $75 per ULFT and free toilet recycling services to apartment owners and managers, this program has seen its greatest success with the inclusion of additional rebate incentives. Most recently, the program offered a "decreasing" limited-time offer (ranging from $25 per ULFT for sign-ups in January, 1999, to $20 for sign-ups in February, and $10 for sign-ups in March, 1999) to assist with the cost of installation. The offer was made available from January 1 through March 31, 1999 and generated program sign-ups representing over 6,000 ULFTs. Through June, however, only 2,754 of those have been installed.

While the program reached 99% of the FY 98/99 ULFT goal, it did surpass its flow savings goal. This is because there was additional participation in the program by smaller apartment complexes, which have a higher associated flow savings estimate per ULFT installed. Plans for the coming

year include developing services that focus on these high-savings-potential small complexes.

# ULFTs			Flow Reduction (gpd)		
FY 98/99 Goal	FY 98/99 to Date	Program Total (1997 to Date)	FY 98/99 Goal	FY 98/99 to Date	Program Total (1997 to Date)
12,000	11,884	20,003	660,000	666,910	1,124,865

I-C4. COMMERCIAL, INDUSTRIAL, AND INSTITUTIONAL (CII) ULFT PROGRAM

Recent activity has focused on the CII Voucher Program, which offers up to $150 per toilet for businesses switching to ULFTs. This program has completed its first full year, and has garnering increased interest, particularly in the hotel and industrial complex sectors. The next year will include additional retrofits at City-owned facilities and continue to highlight the Voucher Program by targeting high-usage retail and service sectors.

# ULFTs			Flow Reduction (gpd)		
FY 98/99 Goal	FY 98/99 to Date	Program Total (1997 to Date)	FY 98/99 Goal	FY 98/99 to Date	Program Total (1997 to Date)
1,650	1,958	2,649	41,250	92,984	127,152

I-C5. FINANCIAL INCENTIVES PROGRAM (FIP)

Rebates of up to $50,000 per project are provided to companies that implement equipment and process changes that reduce the amount of discharge to the sanitary sewer. Rebate amounts are based on the amount of flow reduction garnered from a project, at a rate of $4 per ccf/year of flow savings. The program's largest focus continues to be the Flow Audit Study participants, who have recently submitted their completed studies (as mentioned in Section I-B). Immediate activities will include using FIP to encourage continued implementation of measures identified through the Audits. Also in the coming fiscal year, the program will appeal to smaller users with a pilot standardized rebate element geared toward commercial coin-op laundry facilities.

Past performance has shown that projects can easily take a year or more from application to project completion. So, in addition to the completed projects summarized below, there are currently 22 outstanding applications, with associated flow savings estimated at more than 0.70 mgd.

# Completed Applications	Flow Reduction (gpd)

FY 98/99 to Date	Program (1991) to Date	FY 98/99 Goal	FY 98/99 to Date	Program (1991) to Date
7	46	200,000	209,000	763,000

I-C6. OTHER CONSERVATION PROGRAMS

Horizontal Axis Washing Machines

The Plant began co-funding the Water District's participation in the Horizontal Axis Washer Rebate Program offered by PG&E. This program offers customers a rebate of up to $175 toward the purchase of these water- and energy-efficient units. Fiscal year performance exceeded expectation because of customer interest and PG&E's extension of the program beyond its original close date of December 1998. Currently the program is slated to continue through 1999. The Plant will continue to co-fund these rebates with the District.

# Washers			Flow Reduction (gpd)		
FY 98/99 Goal	FY 98/99 to Date	Program Total	FY 98/99 Goal	FY 98/99 to Date	Program Total
3,456	5,082	5,082	50,500	74,197	74,197

I-D GROUNDWATER INFILTRATION (INFILTRATION) REDUCTION PROGRAM

Short Term Projects

Downer-Canoas (DC) Basin Area (See previous CBS reports for description of the various basins):

The entire 121 manholes in mini-basin 2-C of the Downer Canoas Basin 2 were inspected for potential groundwater Infiltration in the spring of 1999. Seventy manholes showed signs of Infiltration with excessive moisture along the bench, barrel, and wall surfaces. However, there were no cases of a stream or a moderate drip of infiltration from the surface of these manholes. 51 manholes were in less than perfect condition and had some moisture on the wall surfaces, but there was no active infiltration. Eight manholes outside the mini-basin 2-C were also investigated. These manholes were observed to have substantial infiltration ranging from 1 to 70 gallons per minute (gpm). A list of all the leaky manholes in the Downer-Canoas basin is being compiled for future rehabilitation.

Long Term Projects

As a result of flow monitoring, the City's consultant identified Basin X as contributing the most Infiltration in the San Jose sewer system. Subsequently, flow isolation work was focused on 39 mini-basins

suspected of contributing excessive Infiltration within the sub-basin X-29. CCTV work for approximately 12,000 lineal feet of pipeline within 7 of the 39 mini-basins is currently underway to pinpoint sources of Infiltration for future rehabilitation.

The City has so far spent $96,000 in Infiltration monitoring related works.

Under the dry weather reduction plan, the West Valley Sanitation District has recently rehabilitated over 10,000 lineal feet of old sewer lines and manholes within the City of Los Gatos sewer system that had been identified as the potential source of Infiltration.

Next Steps

The City's Consultant will revisit the mini-basins suspected of Infiltration and check for sewer depths and ground water depths in the area. The Consultant will also begin Infiltration investigation work in areas identified by the Department of Public Works that are known to have Infiltration.

I-E MARSH MITIGATION

The purchase of Baumberg Tract, Moseley Tract , and, most recently, Bair Island, has made it possible for the City to implement its marsh mitigation requirement.

I-E1. MARSH MITIGATION PROJECT – BAUMBERG TRACT

The Plant entered into a cost-sharing agreement with the State Resources Agency and other agencies for the purchase and restoration of the 815-acre Baumberg Tract. The City complied with its obligations by providing $6,031,080 for the acquisition and restoration costs of 360 acres of the Baumberg Tract in May 1996. A consultant contract for the project's Restoration and Management Plan was executed by the State in April 1997. The draft Plan and permit applications are in the draft stages of development, with the actual restoration work scheduled to begin in 1999.

I-E2. MARSH MITIGATION PROJECT - MOSELEY TRACT

The Plant acquired the Moseley Tract from the Port of Oakland in September 1996. The plan is to implement a passive tidal restoration to this 54-acre site, which historically was used as a duck club by the Moseley family. The City has acquired consultant services for the site restoration and management plan, as well as land surveying services. Due to El Nino conditions, the site interior did not convert to a natural dry state in 1998 (as it does typically by late summer), which resulted in delays to the

fieldwork. Pumping was required in November 1998 in order to allow the site to be air photographed for the topographic survey. The topographic survey was completed in December 1998. An administrative draft of the restoration plan is scheduled for completion in September 1999, with completion of a final plan scheduled for November 1999. Actual restoration work is scheduled to begin in the summer of 2000.

I-E3. MARSH MITIGATION ALTERNATIVES – BAIR ISLAND

The City, in collaboration with Regional Board staff, initiated an open stakeholder process in August 1998 to discuss the viability of four proposed marsh mitigation alternatives. Through this process, stakeholders reached agreement on the purchase and restoration of Bair Island as the highest priority mitigation project in the San Francisco Bay area. The key to consensus was that the City would complete the "private contribution" part of the Bair Island purchase and, in doing so, would satisfy its marsh mitigation requirements up to June 17, 1998.

The Executive Officer of the Regional Board has accepted the City's proposal to contribute $720,000 for the purchase and restoration of Bair Island, as appropriate mitigation of approximately 30 acres of converted wetlands under Provision 2.2 of Order No. 98-052. This action will satisfy marsh mitigation requirements up to June 17, 1998. A legal agreement establishing the procedure for acquiring and restoring Bair Island between the City, the California Department of Fish and Game, and the Peninsula Open Space Trust has been negotiated and will be executed in July 1999.

II POLLUTANT REDUCTION

The Plant has met its pollutant limits throughout the reporting period. Over the last year, there has been an annual reduction of 465 pounds copper and 1,001 pounds nickel to the South Bay.

For the period between June 1998 and May 1999, copper averaged 3.5 µg/l, ranging from 1.4 - 8.0 µg/l. This is a reduction from the period between June 1997 and May 1998 when copper averaged 3.98 µg/l and ranged from 2.0 - 8.8 µg/l.

For the period between June 1998 and May 1999, nickel averaged 5.7 µg/l, ranging from 4.0 - 9.0 µg/l. This is a reduction from the period between June 1997 and May 1998 when nickel averaged 7.2 µg/l and ranged from 5.0 - 12.0 µg/l.

Reduction of pollutants to the South Bay is accomplished through a multi-pronged 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 science. Regional cooperative programs, including the Urban Runoff Management Program and the Watershed Management Initiative, are also key elements in achieving this goal.

II-A. SJ/SC WATER POLLUTION CONTROL PLANT

II-A1. OPERATIONS AND MAINTENANCE MANUAL

A letter was submitted to the Regional Board on November 30, 1998, outlining the updates made in the operations and maintenance manual, contingency plan, and the reliability study update. Consultants for the operations and maintenance manual and reliability study updates have been selected and kickoff meetings initiated. City staff is doing update of the contingency plan.

II-A2. HEADWORKS LOADING ANALYSIS (HLA) WORKPLAN

A workplan for the Headworks Loading Analysis Study was submitted to the Regional Board on January 31, 1999. The workplan identified tasks and timelines for quantifying flows and concentrations from the various sectors discharging to the Plant. Listed below is the status of study tasks.

HLA-1: Quantify residential and commercial flow using potable water sales in the Plant service area for 1998

Status: In progress; some delay in completing this task is expected.

Description: A review of water use databases found several uncertainties in the way commercial and residential users are classified and the usefulness of water use data for estimating the discharge to the sanitary sewer. To date, water use data for the entire service area has not been obtained. Summary water use data from the Cities of Santa Clara and San Jose have been obtained in hardcopy format, and represent total water use by sector. A breakdown of water use for the commercial sector by business type and the residential sector by dwelling type will not be possible without an electronic copy of water use data. It is anticipated the water use data for the San Jose area will be obtained later in the year after updates are completed for the Storm Sewer Rate Study and the County tax roll. The water use data for the City of Milpitas is currently under review to identify distinct classes of commercial and residential users and differences in water use by category. This information will be used to identify water users accounts.

The immediate focus of this task will be to estimate the wastewater discharged to the sanitary sewer for the commercial and residential sectors, as a whole, based on water use data. Work will then be done to identify specific commercial and residential classifications where water use data is appropriate for estimating wastewater discharge. The estimation of residential and commercial sector flows will be delayed 2-3 months beyond the September due date.

HLA-2: Quantify industrial pollutant contribution

Status: Completed.

Description: The average discharge from permitted industrial users during 1998 has been quantified for hydraulic, copper, and nickel loading.

HLA-3: Quantify inflow and infiltration using the ADS sanitary sewer flow monitoring system

Status: In progress, on schedule.

Description: Preliminary work in reviewing data from the flow monitoring system for drainage basins that have a significant response to rainfall has been completed. The City is renewing its maintenance and monitoring contract with ADS. The new contract will provide for additional monthly reports identifying sites with a significant flow response to rainfall. Inflow reports for the 1998/99 rainy season are expected in October.

HLA-4: Develop list of pollutants of concern for investigation

Status: Completed

Description: This study will focus on identifying potential sources and their contributions of copper, mercury, nickel, organochlorine pesticides, and PCBs[6]. Additional work will be conducted to identify pollutants, and possible sources, that limit the use of recycled water. All available NPDES data will be evaluated to determine the loading rate, pollutant fate, and removal efficiency.

HLA-5: Design monitoring program for identifying and quantifying sources of pollutants of concern:

Status: In progress, on schedule.

Description: A monitoring plan for mercury has been developed and is currently being implemented. Sites representative of hospitals, dental offices, and residential dischargers were identified and monitoring is nearing completion. Additional sites may be selected for monitoring pending initial results for mercury. Characterization of the Plant trunklines for mercury and total dissolved solids is underway.

Monitoring data for copper and nickel is reported in the Trunkline and Upstream Monitoring Program.

As part of the Selected Organics Source Investigation, monitoring of Plant influent for organochlorine pesticides and PCBs was conducted. The data will be evaluated and potential sources of organochlorine pesticides and PCBs within the service area identified. A monitoring program will be developed for these pollutants by the end of August, and an update will be included in the January 2000 CBS report.

Summary

Study objectives for quantifying the sources of pollutants of concern entering the Plant are proceeding and on schedule. Study objectives for quantifying the flow from commercial, residential, and inflow sources are proceeding but are behind schedule. The expected delay in quantifying sector flows is approximately three months. It is not anticipated that these delays will affect the final report due June 2000.

II-A3. SELECTED ORGANIC SOURCE INVESTIGATION (SOSI) WORKPLAN

A workplan for the Selected Organics Source Investigation was submitted to the Regional Board on January 31, 1999. The workplan identified tasks and timelines for determining the presence of organochlorine pesticides and

[6] Organochlorine pesticides and PCBs were incorporated from the Selected Organics Source Investigation.

PCBs in the Plant influent. This includes identification and monitoring of potential sources. Listed below is the status of study tasks.

SOSI-1: Identify the presence and quantities of organochlorine pesticides, PCBs, and dioxins in the plant influent

Status: Completed.

Description: A review of influent, effluent, and biosolids monitoring results for organochlorine pesticides and PCBs was conducted for the period 1993 to the present. Monitoring of the Plant influent for organochlorine pesticides and PCBs over a period of twelve weeks has been completed. Limited monitoring for dioxins in the Plant influent and effluent was done. The next step will be an analysis of the data to determine which pollutants are present and the identification of potential sources of those pollutants.

SOSI-2: Determine whether permitted industrial dischargers discharge any organochlorine pesticides, PCBs, and dioxins

Status: Completed.

Description: A file search of nearly 100 of the largest Dischargers has been completed. Several Dischargers were identified as reporting the use or storage of pesticides and PCBs. Follow-up work will include inspections to determine the nature of the reported pollutants and their fate.

SOSI-3: Identify potential sources of organochlorine pesticides and PCBs that are noted or suspected in plant influent

Status: In progress, on schedule.

Description: Three types of potential users of organochlorine pesticides have been identified. Ongoing efforts to identify potential sources will also continue past the due date of this task. Any additional potential sources will be evaluated for source monitoring.

SOSI-4: Confirm sources of organochlorine pesticides and PCBs

Status: In progress, on schedule

Description: Preliminary work has been done in identifying appropriate locations for the monitoring of potential sources. A complete list of potential sources and adequate monitoring locations will be completed in July. Monitoring is expected to begin shortly thereafter and continue until the task is completed.

SOSI-5: Identify opportunities for source control and pollution prevention

Status: Waiting for results from the monitoring program to confirm the presence of sources.

Description: The scope of this task will depend on the results of previous Selected Organics Source Investigation tasks.

Summary

All study objectives are proceeding and on schedule with the exception of identifying potential sources and confirming their presence. A delay of one month in developing a monitoring program is anticipated. This delay will not affect the investigation or final report due June 2000.

II-A4. TRUNKLINE AND UPSTREAM MONITORING

Background

In October 1995, the City developed and implemented a Trunkline and Upstream Monitoring Program to focus on tracing pollutants upstream from the Plant. The long-term intent of the program is to:

- Identify the sources of pollutants entering the Plant to specific trunklines (or cities) of 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.

This status report will present pollutant loading at the five trunkline sites over a three-year period and discuss significant trends at the trunkline and upstream sites.

Monitoring Sites

Trunkline Monitoring Sites: Wastewater flowing into the Plant can be isolated into three trunklines and two upstream sites approximately representing San José, North San José, Milpitas, and Santa Clara. The current monitoring sites that represent the total flow entering the Plant are:

- T-1 represents wastewater flows from the City of Milpitas.
- T-2 represents wastewater flows from San José, the southeast quadrant of Santa Clara, and the West Valley Sanitation District.
- T-3 represents wastewater flows from North San José.
- U-SC1 represents wastewater flows from Santa Clara between the Guadalupé River and San Tomas Aquino Creek north of Central Expwy.
- U-SC2 represents wastewater from Santa Clara west of San Tomas Aquino Creek. The City of Cupertino discharges wastewater into the sewers of Santa Clara and contributes to the flow at U-SC2.

Upstream Monitoring Sites

No additional upstream sites have been established in the last six months. Monitoring at upstream site U-SJ2 has been discontinued, because pollutant concentrations are consistently within expected levels.

Of the upstream monitoring sites established, two are continually monitored for industrial discharge activity. Listed below are the upstream monitoring sites that have consistently shown elevated pollutant levels attributed to industrial activity.

- U-SC3 - this site collects wastewater from Santa Clara south of Central Expwy. and east of San Tomas Aquino Creek. This site flows through T-2.
- U-M2 – this site collects wastewater from an industrial park in Milpitas located north of Montague Expwy between Main St. and Milpitas Blvd.

Mass Loading

Figures 3 through 6 show the average daily mass loading for the five trunklines entering the Plant during the past three and on-half years. The figures compare the loading during seven reporting periods, of approximately six months time each.

Figure 3 shows the average daily loading of total copper at each of the trunklines. While current total copper loading at the trunklines has increased 17 percent from the previous period, it is still lower than the other reporting periods. Copper loading at T-1 and T-2 are at the second lowest level since monitoring began. Copper concentrations at U-SC1 and U-SC2 have increased in the last six months with a greater frequency of concentrations above 150 µg/l.

Figure 4 shows the average daily loading of dissolved copper at each of the trunklines. Current dissolved copper loading at the trunklines has increased 28 percent from the previous period. The increase in dissolved copper loading is unknown and current loading is consistent with previous reporting periods.

Figure 5 shows the average daily loading of total nickel at each of the trunklines. Current total nickel loading at the trunklines has decreased slightly from the previous reporting period. Total nickel loading at site T-2 and U-SC2 are the lowest of all reporting periods.

Figure 6 shows the average daily loading of dissolved nickel at each of the trunklines. Current dissolved nickel loading at the trunklines has decreased slightly from the previous reporting period.

Program Findings

The combined average daily loading for copper at the five trunkline sites has increased from the last six-month period. This increase is not considered significant because current loading is still lower than or consistent with previous periods. Future loading for total and dissolved copper is expected to fluctuate near current levels. Overall, loading for nickel has decreased slightly from the last six-month period. Future changes in nickel loading are expected to be minor.

Future Program Activities

The Trunkline and Upstream Monitoring Program will continue to monitor the trunkline and upstream sites as needed to identify sources of extreme pollutant concentrations entering the Plant. Program data will be used to support surveillance, inspection, and outreach efforts.

FIGURE 3
Total Copper Loading by Trunkline

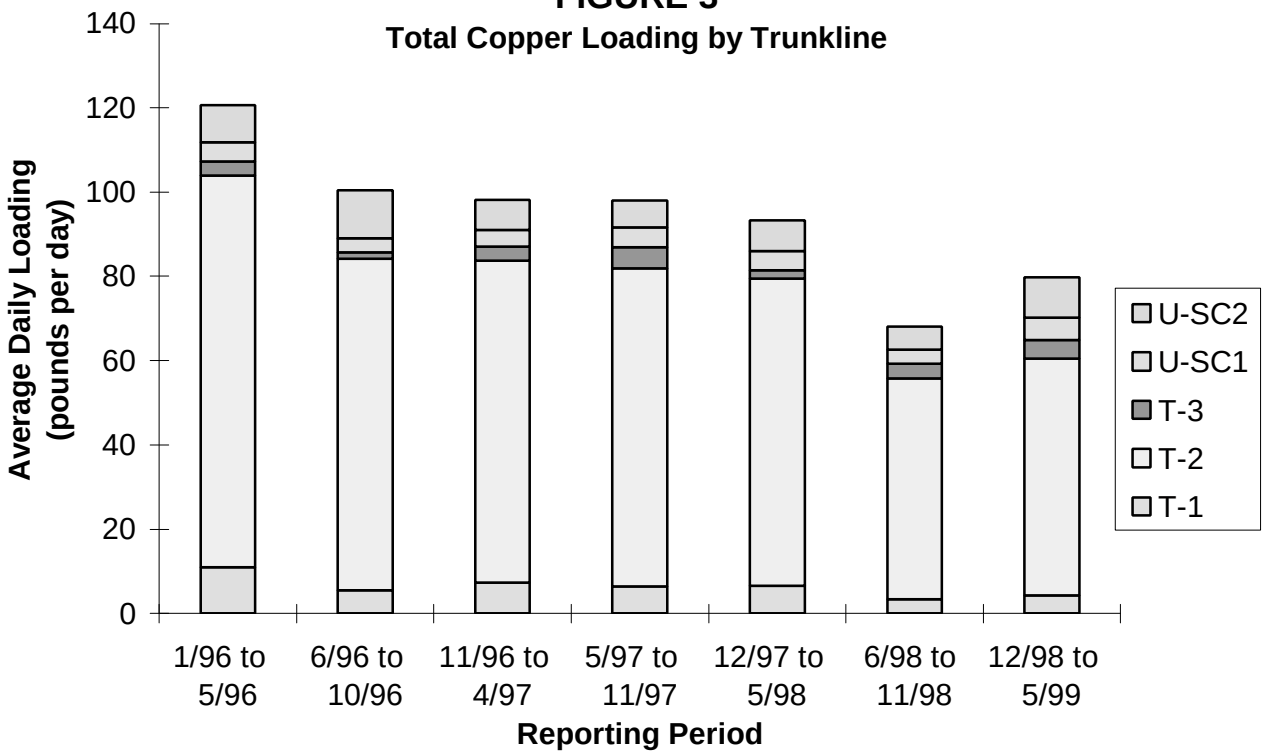


FIGURE 4
Dissolved Copper Loading by Trunkline

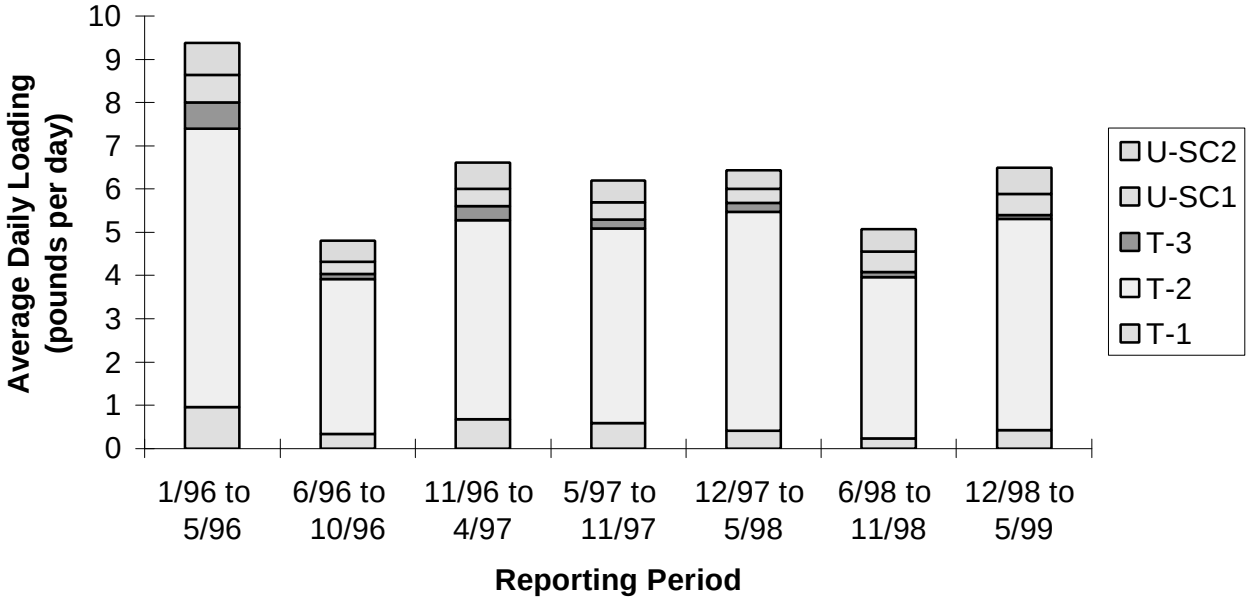


FIGURE 5
Total Nickel Loading by Trunkline

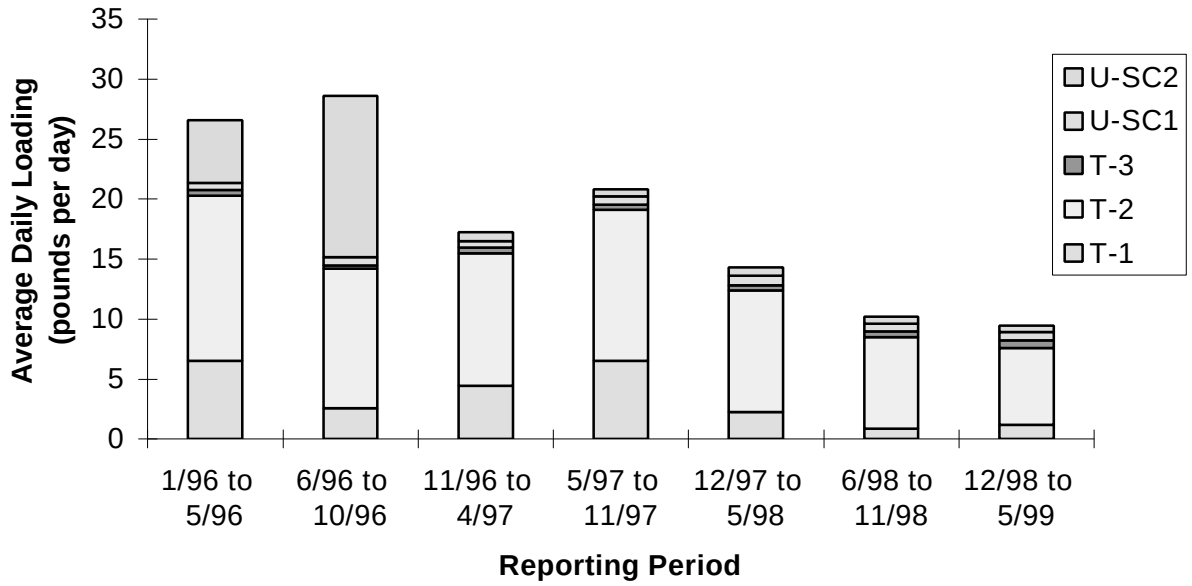
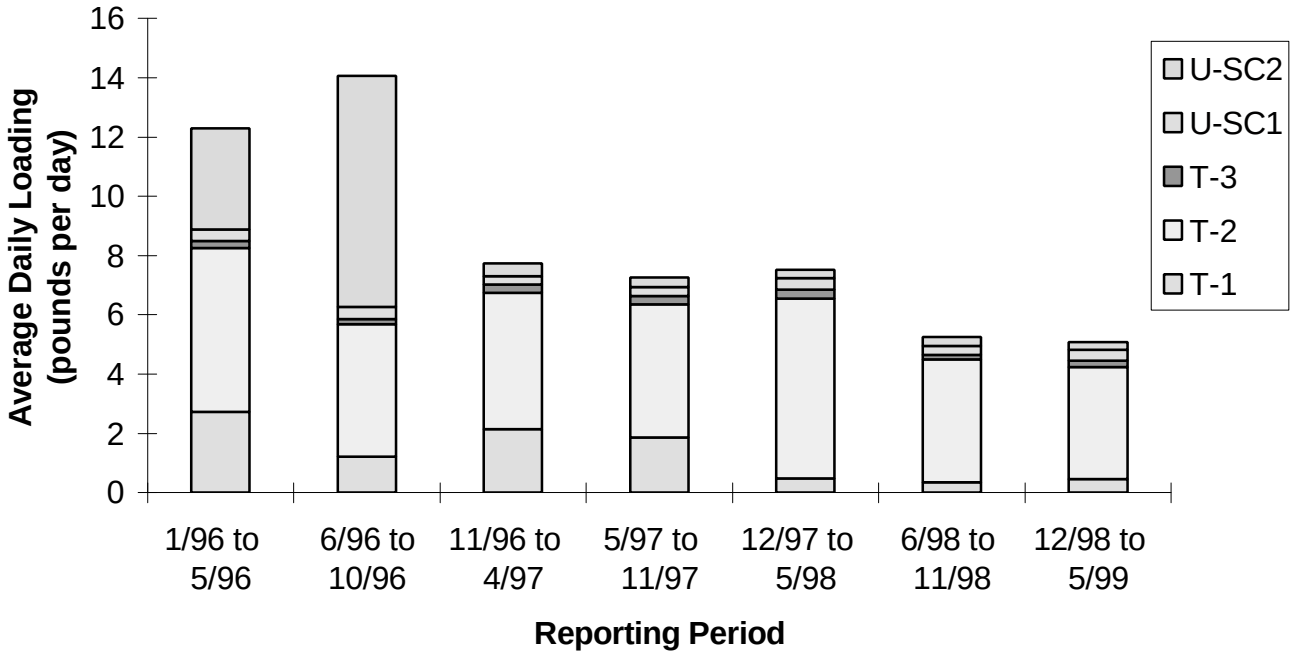


FIGURE 6
Dissolved Nickel Loading by Trunkline



II-A5. PLANT STUDIES

Nitrification has been converted into a single stage Biological Nutrient Removal (BNR) process. As a result, Secondary and Nitrification processes are now operated in parallel. In order to enhance process reliability, a new monitoring station for BNR effluent is being designed, with construction planned for late fall 1999. The monitoring station will include new automatic samplers, along with on-line turbidity, ammonia and nitrite meters. The system for Automatic Sludge Retention time control of BNR in Nitrification is currently in startup.

The design for the filtration backwash water chlorination project is nearing completion with construction planned to begin late fall 1999. Following the completion and implementation of this project, termination of pre-filter chlorination can proceed.

The Plant is still planning to conduct a fecal coliform study in the receiving water, but equipment purchase and installation problems have delayed the start of the study.

II-B. THE PRETREATMENT PROGRAM

II-B1. INDUSTRIAL WASTEWATER DISCHARGE MUNICIPAL CODE

The Sunol and Burbank Sanitary Districts are in the process of amending their municipal codes to adopt the change in the definition of Critical User. As reported in the January 1999 Clean Bay Strategy update, San Jose and all other tributary agencies/cities adopted the new definition in 1998. The change in the definition gives authority to the pretreatment program to require Flow Audit Studies from any discharger whose flow to the sanitary sewer exceeds 100,000 gallons per day.

II-B2. NEW INDUSTRY/DEVELOPMENT PROGRAM

The City continues to review new developments in San Jose during the planning process to identify and address wastewater discharge quality and flow issues that will affect the Plant. Since September 1997, the New Industries Development Study Work Group (NIDSWG), consisting of representatives from all of San Jose's environmental programs, has met weekly to furnish input on requirements and opportunities for indoor and outdoor water efficiency, recycled water use, and pollutant load minimization. ESD's comments are communicated to developers as part of the Planning Department's 30-day letter to permit applicants.

During the period January 1, 1999 through June 30, 1999, NIDSWG reviewed and responded to:

- 2 Administrative Draft Environmental Impact Reports (EIR);
- 55 Projects identified for potential adoption of water-conservation or other flow reduction measures that go beyond current Municipal Code requirements;
- 40 Projects identified for potential wastewater pretreatment and pollutant reduction measures; and
- 59 Projects identified for potential use of recycled water.

The regular coordination of Planning Department and ESD's project review efforts has improved the effectiveness of the City's environmental review process. As part of their 30-day letter developers now receive a comprehensive, early notification of the City's water-use code requirements and incentive-based programs to reduce wastewater flows and increase recycled water use.

SBWR staff is currently working with the City's Building division to create guidelines for selecting and installing plumbing configurations that incorporate the newest proven and accepted water recycling practices. New development in the cities and sanitation districts tributary to the Plant also has the potential to add wastewater discharge sources and similar work will begin in the other agencies over the next year.

Next Steps

- Expansion of the development plan and project review processes to include comments or environmental issues into additional City processes.
- For wastewater and water reuse issues, expansion of the development plan and project review processes to include appropriate processes of the Tributary Agencies and Cities.
- Expansion of the plan check program to include input from all applicable ESD Divisions into the Building Division plan review processes.

II-B3. INDUSTRIAL DISCHARGER RESEARCH STUDIES (Printed Circuit Board Manufacturers Partnership)

The Printed Circuit Board (PCB) partners continued working with the City to evaluate pollutant and flow reduction projects at their facilities during Phase III of the partnership. A summary of their future activities is given in Table V.

The research group has established copper, nickel, and lead baseline information and will continue evaluating feasible reduction(s) by sharing the lessons learned from each other. These companies include:

TABLE V

Summary of Future Activities of the PCB Partnership

(July 1999 to October 1999)

Task	Activity	Status
1	Develop $/lb. overall removal cost for nickel, copper, and lead	Ongoing
2	Flow reduction	
2.1	Evaluate existing engineering solutions installed by team members at critical production process	Completed
3	Develop water quality and contaminant levels for process rinse waters	Ongoing
4	Determine the feasibility and availability of the City's supply of recycle water for the partners	Completed
5	Dissolved Nickel reduction	
5.1	Site-Specific Wastewater Treatment	
5.2	Investigate the applicability of wastewater segregation at selected facilities	Ongoing
5.3	Evaluate existing engineering solutions installed by team members at critical production process	Ongoing
5.4	Recommend optimum set-ups at the pretreatment processes at the team members' companies	Ongoing
6	Evaluate results and findings	Ongoing
7	Progress Reports	
7.1	Submit report to the city by June 30, 1999 for inclusion in the July 1999 CBS	Completed
7.2	Submit report to the city by October 15, 1999 as a closing of the partnership	Ongoing

1. HADCO Santa Clara, Inc.,
2. Paragon Electronic Systems,
3. South Bay Circuits, Inc., and
4. Tyco Printed Circuit Group.

Flow Audit Study

The partners decided to focus their efforts on completing the Audits. Since Hadco, one of the partners, was required to complete an Audit, the group felt that the input contributed by the partners would enhance the efforts for future submittals.

Hadco set their completion date to comply with the May 31, 1999 due date for Audits. The other partners targeted October 31, 1999 as their submittal date.

The partners plan to review the Audits and apply the findings to possible future studies within the group.

South Bay Water Recycling (SBWR)

During Phase III of the partnership, the partners began evaluating the use of recycled water from SBWR in their manufacturing operations. The evaluation started with setting up criteria to evaluate the suitability of using recycled water at each facility, including the distance from the recycled water pipeline, water quality requirements and cost. This result showed that the Tyco and Paragon facilities were most suited to receive recycled water.

In response to this decision, SBWR is working directly with the companies to design a recycled water system accommodating their needs. This system will require an extension of the recycled water pipeline to each site, approval of the Department of Health Services, and compliance with the SBWR permit requirements. Currently, the design of the Tyco extension is underway, and both facilities are determining what manufacturing processes are to receive recycled water along with the quantity of water required.

II-B4. INDUSTRIAL POLLUTANT LOADING STATUS

As we have reported in the January report, there have been difficulties with extracting information from the present pretreatment program database. The database is currently being made Y2K compliant and the newer version will be put into use during the next reporting period. It is unknown at this

time how this conversion will effect our capability to extract future industrial loading. We will continue to verify all loading information and if necessary, we will make and report any corrections.

Table VI and Figures 7 – 10 show the 1997 (baseline), 1998 and 1999 (January-June) flow, and loading to the Plant from permitted industrial dischargers. Industrial copper and nickel loading for 1998 and January through June of 1999 are below the 1997 baseline, therefore none of the additional actions outlined in the current NPDES permit are required at this time. However, we will continue to pursue the flow and pollutant reduction programs discussed in detail elsewhere in this report.

TABLE VI

Industrial Flow, Copper, and Nickel Loading

Discharger	Cu (lbs/day)			Ni (lbs/day)			Flow (mgd)		
	1997	1998	1999*	1997	1998	1999*	1997	1998	1999*
Group 1	5.24	4.27	4.84	2.51	1.47	1.36	2.76	2.29	3.06
Group 2	3.52	3.51	1.30	3.82	3.48	2.21	9.81	8.97	6.61
Group 3	0.03	0.02	0.03	0.03	0.01	0.01	0.03	0.03	0.00
Total	**8.79**	**7.80**	**6.17**	**6.36**	**4.96**	**3.58**	**12.60**	**11.29**	**9.67**

*January through June 1999

FIGURE 7

Permitted Industrial Dischargers Copper Loading

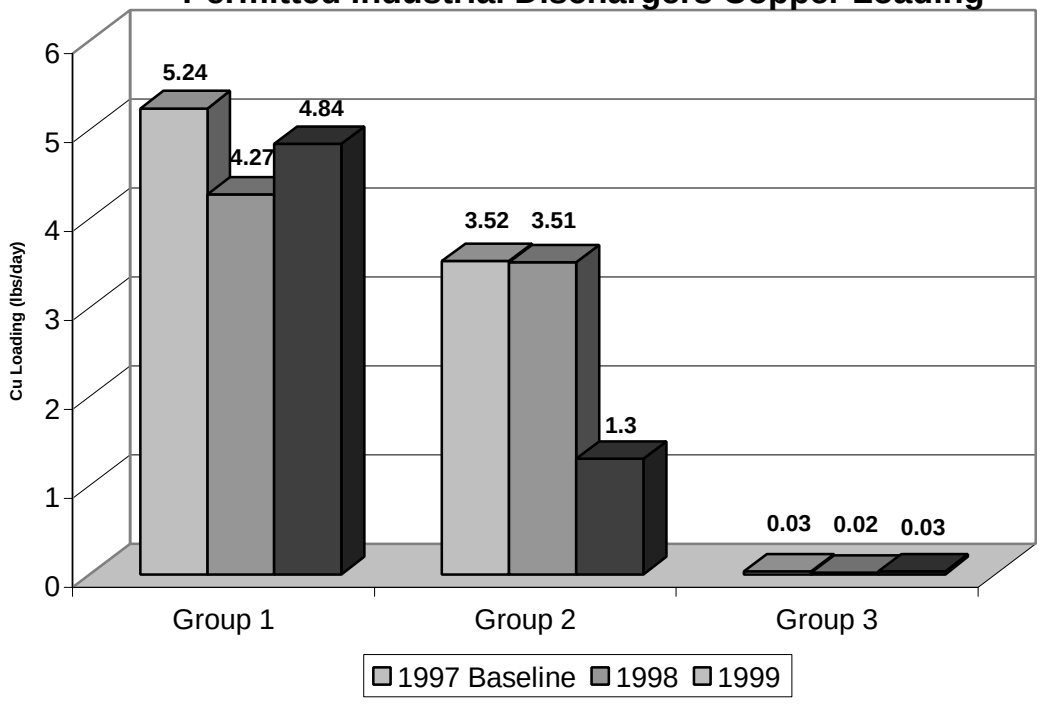


Figure 8
Permitted Industrial Nickel Loading By Sector

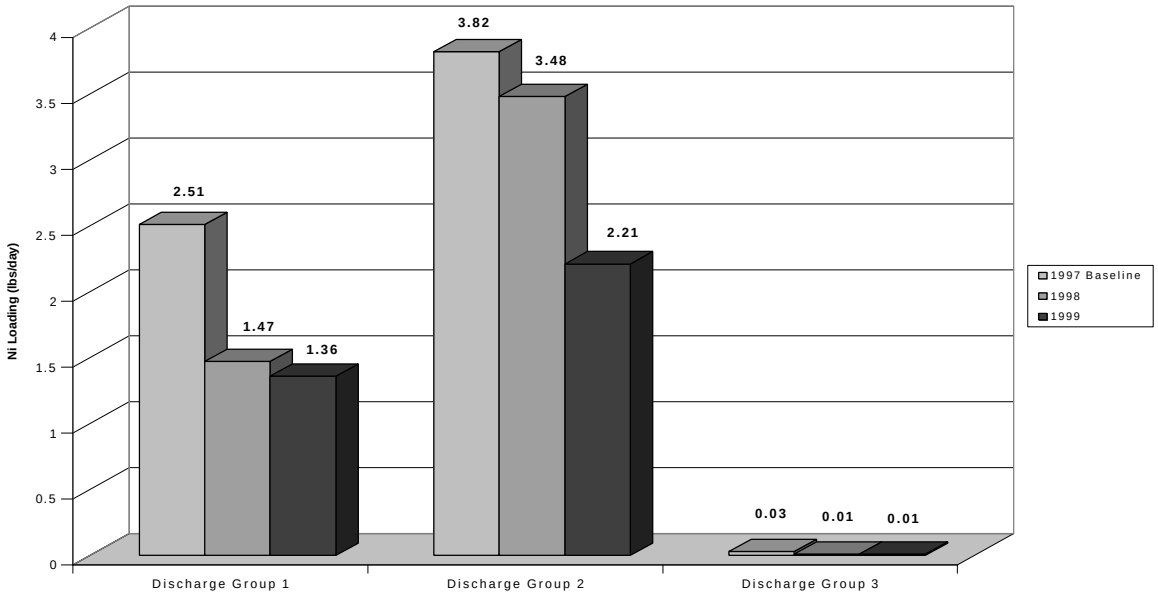


FIGURE 9
Permitted Industrial Total Copper and Nickel Loading

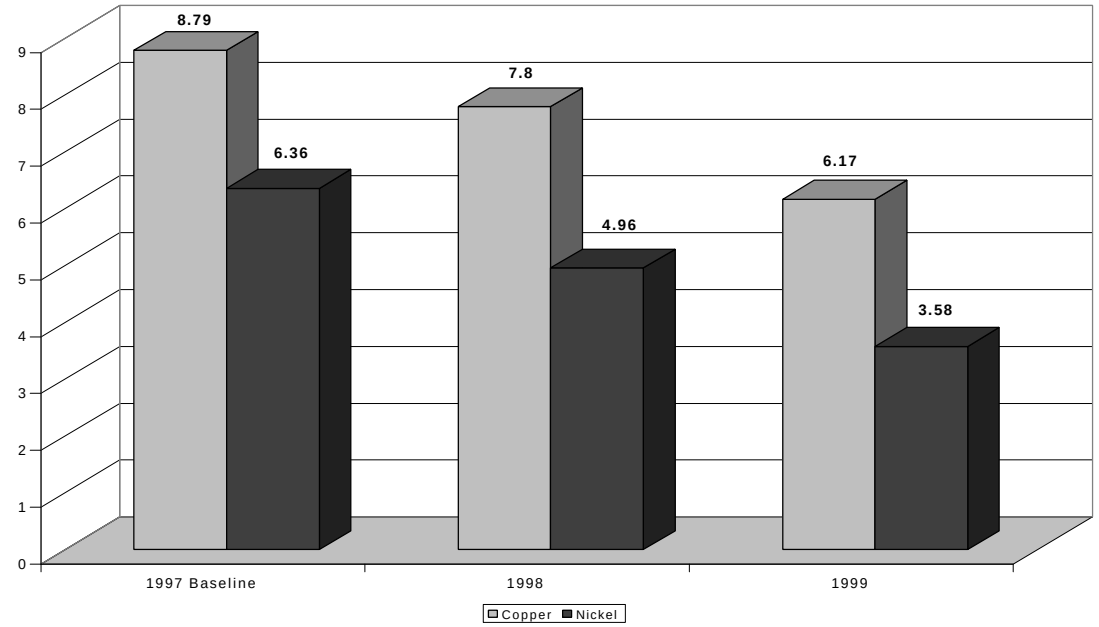
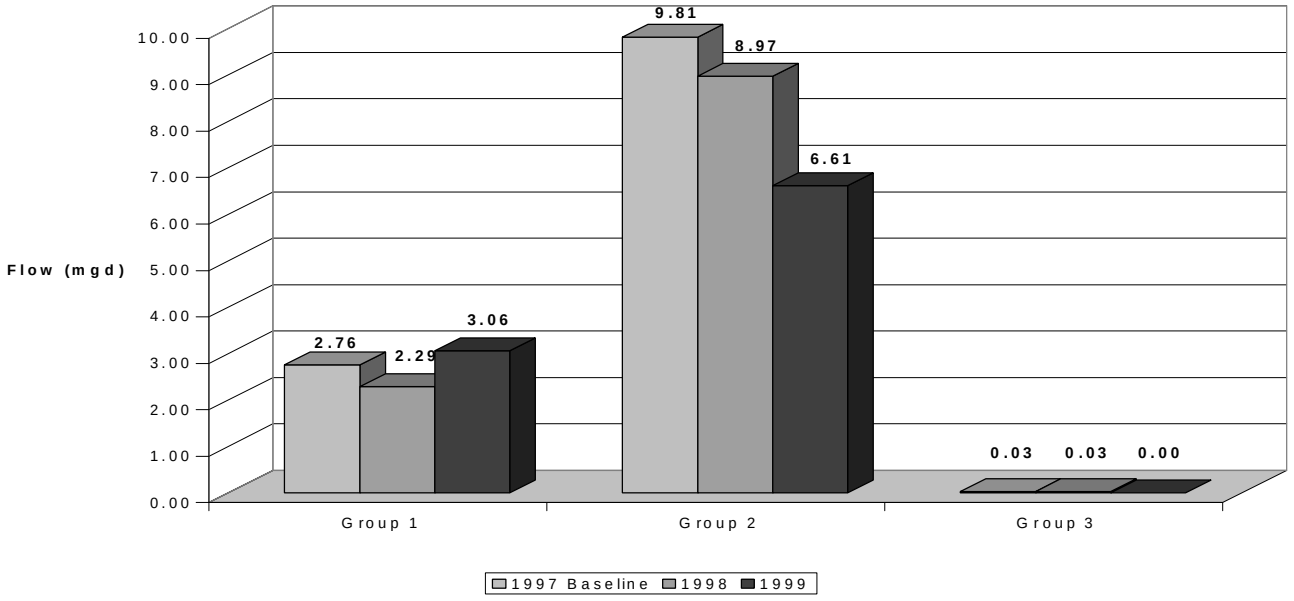


FIGURE 10
Permitted Industrial Flow



III RESEARCH and SPECIAL STUDIES

The City, as administrator for the Plant, is involved in a number of local and regional research studies; these include the following:

1. Low level monitoring with ultra clean procedures and techniques as part of a special effluent study on select organic priority pollutants;
2. Participation in the Mercury TMDL process;
3. Monitoring of water quality parameters monthly in the South Bay to better understand beneficial use;
4. TMDL efforts for copper and nickel: The current focus is on the completion of the Conceptual Model report and the preparation of a Draft Impairment Assessment Report;
5. Monitoring of marsh conversion; and
6. Developing pilot projects using recycled water to create wetlands and the release of recycled water into Coyote Creek during the dry season (summer) of 2000.

Each study is described in greater detail below.

III-A. SPECIAL EFFLUENT STUDY FOR CERTAIN ORGANIC POLLUTANTS

On November 24, 1998, the City submitted a workplan to the Regional Board, to comply with Provision E. 9 of the Regional Board Order 98-052. This study plan was jointly developed by the three South Bay dischargers (Palo Alto, San Jose/Santa Clara, Sunnyvale). The proposal was to conduct low level monitoring with ultra clean procedures and techniques on select organic priority pollutants. On January 13, 1999, the Regional Board accepted the jointly produced study plan with the following minor modifications: (1) to utilize a high-resolution congener specific analytical method for PCB analysis and (2) to utilize EPA Method 1613 for TCDD and congener analysis.

Since February 1999, the South Bay dischargers have worked with staff from the San Francisco Estuary Institute (SFEI) to further develop and refine a mutually acceptable, monitoring proposal. Three analytical research laboratories have agreed to participate in the effluent trace organics study; they include AXYS Analytical, Texas A&M University, and the University of Utah. Sampling events are scheduled for November 1999, February 2000, April 2000, and July 2000. SFEI staff is responsible for management of the overall project, contracts, and data as well as final

report preparation. A draft report will be submitted to the dischargers for review and comment by December 1, 2000. The report will be finalized for submittal to the Regional Board by January 31, 2001.

III-B. MERCURY TMDL PARTICIPATION PLAN

On June 17, 1998, the Regional Board reissued NPDES permits for the three South Bay dischargers. All 3 permits contain a specific provision for mercury TMDL participation:

…… participation with the Regional Board and other South Bay Dischargers in identifying cross media watershed-wide sources of mercury impacting the receiving water and potential control measures,

as well as participation

in [the] Regional Board TMDL process development of site specific objectives and/or a wasteload allocation and mass effluent limits for mercury.

The Plant has achieved compliance with its 12 parts-per-trillion (ppt) mercury limit since March 1996, averaging just 3 ppt of total mercury.

On November 24, 1998, the Plant submitted a Mercury Participation Plan that included the following activities:

1. Continue low level effluent monitoring for mercury; and
2. Participate in the Regional Board's region-wide mercury phased TMDL investigation.

The Plan advocated coordinating participation in the Regional Board's South Bay mercury program with the Santa Clara Basin Watershed Management Initiative. In addition, the Plant also agreed to provide adequate resources for its participation in the development of a region-wide mercury strategy and any resulting phased TMDL studies, as appropriate. On January 13, 1999, the Regional Board accepted the Plant's commitment to participate in their Mercury TMDL process.

Effluent monitoring during January through June 1999 averaged 3 ppt total mercury. The City, as administrator for the Plant, has participated at the Regional Board's Mercury Council since its inception in March 1999. The Plant is also represented on the Council through the Santa Clara Valley Urban Runoff Pollution Prevention Program. In addition, the City has committed significant resources toward the Regional Monitoring Program's Atmospheric Deposition Pilot Study. This commitment has enabled the San Francisco Estuary Project/San Francisco Estuary Institute

to receive seed funding from the United States Environmental Protection Agency under the National Atmospheric Deposition Program – Mercury Deposition Network. This funding will cover equipment purchase, the first year of analytical costs, and the program coordination fee to maintain a depositional station for mercury.

III-C. SPECIAL STUDIES

III-C1. TRACE LEVEL MONITORING IN SOUTH SAN FRANCISCO BAY

Since January 1999, Plant staff has continued to monitor water quality parameters monthly in the South Bay at 12 sampling sites representing deep channel, mid-channel, shallow mudflats, and areas of significant stream influence. This study is already providing valuable information describing the spatial and temporal trends in water quality parameters necessary to better understand beneficial use impairments in the South Bay. Results to date have demonstrated decreasing ambient copper and nickel concentrations on a northward gradient in the extreme South Bay. Higher total metal concentrations correlate well with storms (especially those with high wind) although dissolved metal levels remain relatively constant. Measured levels of total copper and nickel correlate with total suspended solids (TSS) and, to a lesser degree, with total organic carbon (TOC) and dissolved organic carbon (DOC). Total mercury values are highest near the confluence of Coyote Creek and the Guadalupe River.

To ensure data compatibility across separate investigations, Plant staff has initiated an in-depth review of all data collected to date. Revised analytical quality control criteria were developed during the first quarter of 1999 and have been implemented to improve overall data quality. Statistical evaluations of the entire data set based on these quality control criteria will be completed by July 1999. These newly implemented measures will ensure better data comparability between this and other Plant projects and those being implemented by other scientific or governmental agencies. Water column quality monitoring will continue throughout 1999. In addition, the technical merit of sediment sampling in the South Bay is being evaluated.

III-C2. CALCULATION OF TMDL FOR COPPER AND NICKEL IN SOUTH SAN FRANCISCO BAY

Since January 1999, TMDL efforts have focused on the completion of the Conceptual Model report and the preparation of a Draft Impairment Assessment Report.

Conceptual Model Development

The Conceptual Model report was provided to stakeholders for their review and comment. This model depicts our current understanding of the processes that influence copper and nickel cycling in the South Bay, including biological and chemical cycling, pollutant loading, and sediment transport. The Conceptual Model includes numerous graphics and will be used as a tool for communication throughout the TMDL process. The model is also intended to be the foundation for all other project work products and to facilitate discussion among stakeholders.

Technical Review

A committee of nationally recognized technical experts including Janet Hering (Cal Tech), Sam Louma (USGS), and Stephen Monismith (Stanford University) reviewed the Conceptual Model report. The TMDL consultant team also developed the technical review process based on procedures used by the EPA Science Advisory Board. The report is expected to be finalized based on technical review committee comments during the month of July 1999.

Impairment Assessment

In January 1999, over 50 representatives from local regulatory agencies, municipal dischargers, storm water management groups, environmental groups, other stakeholders, as well as local scientists, participated in an impairment assessment workshop. At the workshop, information was presented on potential indicators for assessing impairment of beneficial uses. The feedback from the workshop was incorporated into the draft Impairment Assessment Report, which was distributed to stakeholders in May 1999. The report provides information to help stakeholders evaluate whether levels of copper and nickel in the South Bay impair beneficial uses. The draft Impairment Assessment report indicates that impairment of the South Bay due to copper and nickel concentrations is unlikely and recommends removing the South Bay from the 303(d) list with respect to copper and nickel.

The draft Impairment Assessment Report further states that the current state of scientific knowledge is sufficient to establish a site-specific objective (SSO) for dissolved copper (range of approximately 5.5 to 11

µg/L) and dissolved nickel (range of approximately 12 to 24 µg/L). The report also recommends several special scientific studies to help reduce remaining uncertainty. A stakeholder review meeting occurred in June 1999 and another meeting has been scheduled for July 1999. The purpose of the meetings is to reach a consensus on the results of the Impairment Assessment Report, as well as to reach agreement on a decision process if consensus cannot be obtained. The June meeting raised many issues that are currently being addressed by the technical staff. The Impairment Assessment Report is scheduled to undergo technical review during August 1999 and is scheduled to be presented to the Regional Board during October/November 1999.

III-D. SALT MARSH CONVERSION ASSESSMENT

The 1998 comparative study of South Bay marsh associations indicated an apparent loss of 56 acres of salt marsh habitat (8% of total) between 1997 and 1998 in the Main Study area. However, this conversion in the Main Study area was coincident with the similar conversion of 5.3 acres of saline to brackish marsh in Alviso Slough, the study reference site. Hence, the relative change in marsh habitat types since 1997 was impossible to differentiate between the Main Study area and Alviso Slough reference area. Furthermore, there has been a significant change in the marsh area that has resulted in an increase of 154 acres of overall marsh since 1989, with an accretion of 89 acres occurring between 1997 and 1998 alone.

Equivalent changes in marsh types in both the Main Study area and the reference site indicate that large-scale environmental changes are likely responsible for the observed shift in dominant plant species in the South San Francisco Bay marshes. The above normal rainfall and resultant high stream flows, the lowering of salinity in the entire Bay, and the increase to average tidal elevation associated with the El Nino weather pattern are each significant factors affecting change to the South Bay environment. Furthermore, the pattern of marsh conversion moving downstream in both river corridors and the pattern observed at the mouth of the Guadalupe River suggest that recent changes in marsh habitats in the Main Study area are in response to these environmental factors.

The Plant will continue to gather additional information on the magnitude of marsh conversion in 1999. In addition to the marsh assessment studies, focused monitoring of tidal elevations and salinity in the tidal channels will be collected and analyzed. In addition, sampling in the root zones of marsh vegetation in the Main Study and Reference areas will analyze the bulk density, porewater salinity, and pH of the soil.

III-E. STREAMFLOW AUGMENTATION PILOT PROJECT

The principal objectives of streamflow augmentation are to enhance aquatic habitat and improve water quality in streams, using recycled water. Since using recycled water for habitat enhancement is not well documented, the project plan is to have short-term pilot studies with comprehensive monitoring programs to assess the positive and negative impacts of recycled water on aquatic habitats. Presently, summer stream flows and water quality within the Santa Clara Valley Basin are inadequate to support healthy populations of cold-water species. Cold-water species of special interest include the Steelhead trout, proposed for federally listing as threatened, and fall-run Chinook salmon, likely to be proposed for listing.

A pilot project is currently in the planning and permitting phase for releasing recycled water into Coyote Creek during the dry season (summer) of 2000. The Coyote Creek Pilot is a stakeholder driven project that involves local environmental groups, regulatory agencies and several City departments. The anticipated release location is the stream reach between Tully and Capital Expressway in San Jose. Pre-release monitoring of water quality, fisheries, macroinvertebrates and habitat quality was conducted in 1998 and the 1999 monitoring activities are just getting under way. This technical information will be used to develop biological monitoring plans and operations criteria that will assist in determining benefits and impacts of releasing recycled water to local waterways. California Environmental Quality Act (CEQA) documentation and NPDES permit language is being drafted for stakeholder and regulatory review. Facilities that could potentially be used for treatment and delivery of the recycled water are currently being designed.

III-F. WETLANDS CREATION PILOT PROJECT

A pilot project using recycled water to create wetlands was proposed as one of the environmental enhancement projects under the revised South Bay Action Plan. The primary benefits of a wetland creation pilot project include aesthetic value, habitat enhancement, and public education. This pilot project demonstration may be developed more fully if the streamflow augmentation pilot program demonstrates successful operation. Identification of potential location(s) and site specific designs could be developed over a 6 to 12 month period. A stakeholder process will again be used to further develop the pilot demonstration project concept.

III-G. AVIAN BOTULISM

The Plant provides for regular monitoring of Artesian Slough and Coyote Creek to watch for the presence of avian botulism and other avian diseases. The San Francisco Bay Bird Observatory conducts this special program monitoring under contract with the Plant. Prompt collection and disposal of ill and deceased animals in the surveyed area enable the detection and control of larger disease outbreaks.

The typical monitoring period extends from May to November. Twenty-four surveys are conducted within this period. The annual report for the 1999 monitoring effort will be completed in January 1999.

III-H. LOCAL EFFECTS MONITORING

Local Effects Monitoring (LEM) studies have been conducted at a site in Coyote Creek near the discharge points for the San Jose/Santa Clara and Sunnyvale wastewater treatment plants since 1994. The United States Geological Survey (USGS) collected tissue from a marine clam, *Macoma balthica*, and fine-grained sediments six times each year. Sediment samples were analyzed for trace metals, grain size, and Total Organic Carbon (TOC). Tissues were analyzed for trace metals, mantle water salinity, and lipid content to determine the overall condition of the clams at time of sampling.

The USGS recently submitted the 1998 draft LEM report for initial review and comment. Draft conclusions include. . . . . *regional scale factors may be becoming more important than local point source inputs in controlling sedimentary and bioavailable concentrations of several elements of regulatory interest: Cr, Ni, Zn, Se and Cu.*

Inputs of mercury to the South Bay, presumably from abandoned cinnabar mines and carried in runoff during storm events are believed to be the main sources of this toxic metal. Mercury concentrations in the sediment at the LEM site have exceeded 1.0 micrograms per gram (µg/g) during recent high precipitation years following heavy runoff. The hypothesis continues to hold that high inputs of mercury will occur whenever episodes of high runoff result in increased erosion input to Coyote Creek and/or Guadalupe Slough. Concentrations of most metals in the sediments and tissues were similar to levels detected in similar matrices at a site near the Palo Alto wastewater treatment plant which has been monitored since 1977. No further studies at this site are currently planned.

IV REGIONAL COOPERATIVE EFFORTS

The City is involved in a number of regional cooperative efforts. 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. URBAN RUNOFF MANAGEMENT PROGRAM

The work of the Urban Runoff Management Program is closely coordinated with the work described in this report as well as the work of the Watershed Management Initiative.

The Santa Clara County Urban Runoff Pollution Prevention Program and each co-permittee, including the City of San Jose, submitted its updated workplan on 3/1/99 and will be submitting the Annual Report to the Regional Board on September 1, 1999. Copies are available upon request.

IV-B. WATERSHED MANAGEMENT INITIATIVE

Since 1996, the City has been an active participant in the Santa Clara Basin Watershed Management Initiative (WMI), a stakeholder-driven process to develop a watershed management plan for Santa Clara Basin. In addition to federal and state regulatory agencies, stakeholders include municipalities, special districts, environmental and civic groups, business and trade organizations, and agricultural groups. The primary goal of the WMI is to develop community-based environmental protection in the form of a watershed management plan for Santa Clara Basin, which drains to South Bay.

The WMI is led by the Core Group, a policy-making body, and is supported by ten working subgroups (see Appendix B for the list of subgroups and their work statements). The City has committed significant staff and fiscal resources to the Initiative.

Since January 1999, progress has been made in the following areas:

Signatory Document

On Earth Day 1999, stakeholders held a media event at the Alviso Education Center to sign a participation agreement, demonstrating their commitment to the Initiative. Most stakeholders have now signed the Signatory Document. See Appendix B for the list of organizations that have signed the Signatory Document.

Planning/Implementation Objectives

The Core Group approved a set of planning objectives to guide the development of the Watershed Management Plan based on the Initiative's goals. Implementation objectives to guide implementation actions are under development with a completion date of 7/99. Once approved by the Core Group, they will be incorporated into the Watershed Assessment Report.

Regulatory Executive Forum

A Regulatory Executive Forum has met twice during the last six months. The Forum is intended to bring together high-level decision makers from the agencies involved in the Initiative. The forum will track progress and function as a discussion forum for major issues affecting the Initiative.

Watershed Assessment Report

The first Watershed Assessment Report will begin a scientific assessment of the conditions of three watersheds that together represent the uses, characteristics, and conditions in the Basin. The watersheds chosen by the Core Group are San Francisquito Creek, Guadalupe River, and Upper Penitencia Creek. The assessment of these watersheds will serve as the foundation for the Watershed Management Plan. The goal is to assess, over time, the entire Basin. The Watershed Management Plan will then be updated as each phase of the assessment is complete.

The City is providing significant resources for the development of the Watershed Assessment Report by contributing funds toward the various special studies including the Watershed Assessment and regulatory survey consultant as well as providing staff resources to the subgroups preparing portions of the assessment report.

The next step to complete the Assessment is to describe the framework for selecting and analyzing the data and ensure that the stakeholders, especially the regulatory agencies, understand the suggested approach and agree upon it. The actual approach used will depend largely on the availability and quality of data, but it is key to provide a framework that will enable stakeholders to agree as to how data will be used.

A key to the framework is coordination with regional efforts particularly the Regional Board's Regional Monitoring and Assessment Strategy that is under development. The WMI framework development process serves as a pilot for the Regional Board Monitoring Strategy with regard to the analysis of existing watershed monitoring data and beneficial use assessment. The WMI framework for conducting the assessment must be agreed upon by the stakeholders, including the Regional Board by the fall

of 1999 in order to complete the WMI watershed assessment report by the spring of 2000. Thus, the experience gained in conducting the WMI Assessment will help provide input to the development of the Regional Board's assessment strategy.

TMDL

Please refer to the "Special Studies" section for an update on the TMDL effort.

Watershed Grants

The City believes that the success of the Initiative depends on the support and involvement of stakeholders. To facilitate stakeholder input, the San Jose City Council and the Treatment Plant Advisory Committee (TPAC) approved a pilot watershed grants program. The grants have been awarded and all contracts are now executed. The entities that have received grants are shown in Table VII.

Facilitation Contract

The City continues to fund a contract with MIG, Inc. for independent facilitation to the Core Group and Subgroups as needed, as well as to provide leadership on process issues, such as development of objectives. MIG has conducted a process survey of Core Group members and developed recommendations for process improvements. The Core Group approved the recommendations at the May 1999 meeting.

Program Manager/Project Coordinator

The City co-funds for the current program manager position with the Cities of Sunnyvale and Palo Alto, and the Santa Clara Valley Water District.

The Personnel Committee of the Core Group recently reviewed the needs of the core group with respect to program management. The Core Group, at its April meeting, approved the recommendations of the Personnel Committee for redirecting this position into a project coordination role to actively focus on the preparation of the key documents of the Initiative: the watershed assessment report and the watershed management plan. At its June meeting, the Core Group approved the proposed job description. Staff is now pursuing the hiring of a temporary employee under Core Group guidance. It was proposed to hire the project coordinator (replacing the program manager) through one of the co-funders to reduce overhead cost. San Jose will hire the new project coordinator as a temporary employee for two years. Funding for this position will be shared by the Cities of San Jose, Palo Alto, and Sunnyvale, the Water District, and a grant from the State Board to the City of San Jose (205j planning grant).

TABLE VII

Watershed Grant Recipients

Organization	Project Purpose
Silicon Valley Toxics Coalition	Operating support for participation in the Santa Clara Basin WMI
Silicon Valley Pollution Prevention Center	Operating support for participation in the Santa Clara Basin WMI
San Jose Silicon Valley Chamber of Commerce	Operating support for the Chamber of Commerce and the Silicon Valley Manufacturing Group for participation in the Santa Clara Basin WMI
Silicon Valley Manufacturing Group	Industrial Research and Technology Transfer Activities on the efficient use and discharge of water in cooperation with the Silicon Valley Pollution Prevention Center
Aquatic Outreach Institute	Teacher Training Workshops on the "Kids in Creeks" and other watershed curriculum activities
San Jose Unified Educational Foundation	Teacher Training and Student Watershed Field Activities with the Hacienda Involved Parents and Staff at Hacienda Science School
The Natural Heritage Institute	Support for on-going participation in the Fisheries and Aquatic Habitat Collaborative Effort
San Francisco Bay Bird Observatory	Enhanced stream inventory research activities and operating support for participation in the Santa Clara Basin WMI

Fact Sheets

The WMI completed 2 fact sheets, one on the Initiative itself and one on the 3 initial watersheds. These are attached in Appendix B.

IV-C. REGIONAL MONITORING PROGRAM

The Regional Monitoring Program (RMP) is a comprehensive monitoring program assessing sediment and water quality, as well as the toxicity and bioaccumulation of pollutants at numerous locations in San Francisco Bay and the Sacramento/San Joaquin Delta. Monitoring is performed three times per year during the winter, spring, and summer. Two additional stations in the southern end of the Bay are also monitored in cooperation with the Regional Board, the San Francisco Estuary Institute (SFEI), the Plant (Station C-3-0) and Sunnyvale WPCP (Station C-1-3). These supplemental stations are monitored with resources specifically ear-marked by the Cities of San Jose and Sunnyvale.

In addition, the City of San Jose has provided significant resources toward the Estuary Interface Pilot Study and the Atmospheric Deposition Pilot Study. This region-wide monitoring program and its accompanying special research topics are indispensable management tools for the greater Bay/Delta governments. The City will continue its active support and participation in the Regional Monitoring Program throughout 1999.

Initial results for the most recently reported RMP data are presented below:

1. Sediment contaminant concentrations for 1997 were highest in the Southern Sloughs and South Bay, while February sampling in the North Bay demonstrated effects of flood water flows depositing contaminants. Mercury concentrations were highest throughout the Bay in February and less pronounced during the spring and summer sampling.
2. Toxicity to bivalve embryos and amphipods was pronounced and occurred most frequently in the South Bay, where more of the samples were toxic than in previous years. In most of the samples that exhibited toxicity, it appears that a mixture of different contaminants, especially metals, was responsible.

V OUTREACH

The City and Plant provided outreach on flow reduction and pollution prevention. Flow reduction outreach is done in support of the Water Efficiency Program and pollution prevention outreach is done to support the activities of the Watershed Protection program. Highlights of the outreach activities for the last six months are presented below.

V-A. FLOW REDUCTION PUBLIC OUTREACH

V-A1. SOUTH BAY WATER RECYCLING

SBWR is an on-going, multi-year effort to reuse high quality effluent from the Plant. The goal of the program is to provide a reliable "drought-proof" water supply and protect an endangered species habitat at the south end of San Francisco Bay. Phase 1 facilities are designed to distribute up to 15 mgd of recycled water during the peak dry-weather months for irrigation, industrial and other purposes. As reported in the previous report, recycled water deliveries during the first season of operation reached 5 mgd to over 100 customers.

Since January 1999, retrofit construction was completed for more than 50 new customers. In March 1999, the second remote pump station began providing service to customers in the third pressure zone (southeast San Jose). A number of large water users are expected to connect to the system before the end of the 1999 irrigation season, and a third pump station will be commissioned, enabling peak summer flows of up to 9 mgd.

V-A2. ULTRA-LOW FLUSH TOILETS

Multi-Family Dwelling (MFD) Outreach

In December 1998, owners and managers of multi-family dwellings were offered a tiered limited time offer designed to encourage early participation in the Voucher Program. If owners applied for participation in January, they received an additional $25 rebate with each toilet voucher, an additional $20 was given in February and, finally, an additional $15 was offered in March. The program was announced by the delivery of a toilet bank, complete with toilet flushing sound effects, to the offices of the apartment management. A direct mail piece was mailed to complexes with 30 or more units and a full-page color ad appeared in *Apartment Magazine*, a Tri-County Apartment Managers Association publication. This program met its goals early in the period that it was offered.

Outreach to Real Estate Professionals

Partnership with the Real Estate Board continued with the development of a brochure explaining the importance of water conservation and providing saving tips and information on the Rebate Program. This brochure was distributed with escrow packets at various title companies, as well as through other real estate professionals.

Cooperative Outreach Efforts with the Santa Clara Valley Water District

In an effort to sustain the maximum amount of water conservation messages reaching the residents of the tributary area, the Water District and ESD cooperatively planned and reviewed outreach campaigns that began in the spring and will continue throughout the dry weather period. The Water District's late spring/early summer campaign focused on general water conservation, which also emphasized the need for indoor water conservation as it relates to the flow issues. In mid-summer, the ESD campaign will focus on the Water District's limited time offer for toilet rebates and give the Water District several more options to promote their conservation programs. This cooperative approach assures unified messages and an effective use of resources for each party and sustains the length of time that the messages are heard.

Special Events

Before either of the campaigns began, there were numerous outreach events in the spring that afforded opportunities to directly reach audiences about water conservation. These included the following:

- Earth Tech 2000,
- Water Awareness Night at the San Jose Giants,
- 2 Home and Garden Shows,
- City/County Earth Day, and
- 4 Earth Day events at area businesses.

These events gave staff the opportunity to display the new "flush rack" that demonstrates live action toilet flushing in our exhibit space!

Activities in the Next Six Months:

ULFT Rebate Program

As part of the Revised South Bay Action Plan Tier One Contingency, an additional outreach campaign will be launched in mid-July. This campaign is designed to affect the 1999 ADWEF.

The campaign will raise public awareness of the consequences of discharging too much fresh water into the San Francisco Bay, overcome objections and misperceptions about ultra-low flush toilets, and provide a strong call to action in all outreach materials. Multi-lingual outreach efforts will be included in this campaign. An effort will be made to answer Vietnamese and Spanish Water Conservation Hotlines live during peak periods of response.

Prior to the campaign launch, the Plant executed a cost-sharing agreement with the Water District. Included in this agreement was the provision of a limited time offer for the Rebate Program, offering an additional $25 above the regular $75 rebate. Participants needed to retrofit their older model toilets by October 31 to qualify. After this date, toilet rebates will no longer be offered to the general audiences of the tributary area and ULFT retrofit programs in the future will most likely be targeted to MFDs and audiences considered more difficult to reach.

Slow the Flow and Save the Bay Local Business Awareness Campaign

In conjunction with the residential ULFT campaign, efforts will continue on the *Slow the Flow* and *Save the Bay Local Business Awareness Campaign* during the 1999 June through October period. As mentioned in the previous update, the campaign was co-sponsored by the Silicon Valley Manufacturing Group, the Silicon Valley Chamber of Commerce, the Water District, and the tributary agencies of the Plant. The campaign's purpose is to encourage employees to purchase ULFTs for their homes. Companies participating ranged in size from Hewlett-Packard and Adobe Systems to Aki's Bakery.

V-A3. COMMERCIAL/INDUSTRIAL/INSTITUTIONAL (CII) OUTREACH

Flow reduction outreach to the CII sectors included various speaking engagements and events. Presentations on the importance of water conservation to the South Bay and the availability of the incentive programs were made to the engineering staff of Hadco (an IU), the Surface Technology Association, the Association of Facility Engineers, and a chapter of the San Jose Downtown Association for local merchants. In addition to the technical workshop held in March for the Flow Audit Study participants, program information was also made available at the Building & Office Managers Association (BOMA) trade show.

V-B. POLLUTANT REDUCTION OUTREACH

The City is continuing to focus on establishing clear goals, assessing outreach effectiveness, and coordinating with other local and regional outreach programs.

Goals

During this report period, the City established programmatic goals and objectives for each pollution prevention outreach audiences. These goals and objectives are shown in appendix G, in the sections that discuss those audiences.

Assessing Outreach

Progress was also made toward assessing outreach effectiveness. Contractors were selected, and work to assess San Jose's audiences and delivery mechanisms using standard marketing survey methods continues. Current projects include:

- Conduct a survey to further characterize the regulated industrial audience;
- Work to evaluate ESD's website to determine who visits, what they came looking for, and the effectiveness of the outreach materials posted there; and
- Offer training to enable staff to design outreach metrics that are consistent with a performance objectives approach.

V-B1. REGIONAL OUTREACH

The City continued to place emphasis on coordination with other local and regional outreach programs. The goals for this involvement are to assist in developing and implementing consistent, effective regional outreach and education programs, and to coordinate the pretreatment and stormwater pollution prevention outreach message delivery with regional activities that support and deliver similar messages.

Staff continued their active representation on outreach committees of the Bay Area Dischargers Association (BADA), the Bay Area Pollution Prevention Group (BAPPG), BAPPG's Public Education and Technology Transfer Committee, and the Santa Clara Basin Watershed Management Initiative (WMI). During this reporting period, staff participated in the following regional activities and projects:

- The joint BASMAA/BADA Media Relations project;

- Finalization and distribution of the WMI's first outreach piece: A Fact Sheet describing the Santa Clara Basin, WMI stakeholders, the goals of the project, and some issues facing WMI planners;
- Development and translation of regional Spanish radio ads for BAPPG in conjunction with radio station KSOL;
- Comment on the development of a regional policy for surface cleaner discharges; and
- Co-participant in the BAPPG pesticide sampling project.

The City also provided volunteer services and funds to assist with BAPPG projects, and developed and/or translated several pieces for Spanish and Vietnamese speaking audiences. These pieces were shared with BAPPG members and attendees.

During the next six months, staff will be involved in the following:

- Facilitating the annual prioritization of BAPPG's issues and pollutants of concern;
- Selection of BAPPG and Santa Clara Valley Urban Runoff Pollution Program (SCVURPPP) projects for FY 99/2000;
- Budget coordination between BAPPG and BADA; and
- Preparation of a WMI/WMO outreach strategy to coordinate the public education efforts of the SCVURPPP and the WMI.

V-B2 GENERAL OUTREACH

General audiences include all residents, but could include businesses that are not part of a targeted audience. Thus, general messages such as "reduce your water use" could apply to both residents and business.

Highlights and Changes

In 1998, the City conducted a baseline survey of residents. Changes in residents' behavior and awareness over a 5-year period will be documented by subsequent surveys. The City plans to conduct the first of two follow-up surveys in FY 2000/2001.

Speaking Engagements

There were no requests for presentations to general residential audiences during the reporting period. Previous CBS Reports included an appendix of materials distributed through speaking engagements. However, since no speaking engagements were requested, the above mentioned appendix is not included with this Report.

V-B3. TARGETED OUTREACH

The City delivers its targeted water pollution prevention messages using speaking engagements, an Internet website, specific BMPs, and events (when applicable).

Foreign Language Audiences

In many parts of the Bay Area, the Spanish speaking portion of the community is approaching 30%. In San Jose, it exceeds 30%. If you combine the English speaking and Spanish speaking segments of San Jose's population, these two audiences alone represent more than eighty percent of San Jose's population. If you combine San Jose's Spanish, Vietnamese, Chinese, Korean and Filipino speaking audience segments, the number approaches 45% of San Jose's population. Clearly, the need for pollution prevention outreach to population segments that speak languages other than English must be considered.

Spanish Speaking Audience

During this reporting period, the City focussed on outreach to the Spanish speaking community. Staff translated two Santa Clara Valley Urban Runoff Pollution Prevention Program brochures for the automotive industry into Spanish, and prepared a poster highlighting Best Management Practices for automotive shops in English and Spanish. All materials that the City developed were made available to other Bay Area POTWs through the BAPPG.

In co-operation with BAPPG, City staff is in the process of translating text[7] and preparing a Fact Sheet for Spanish speakers on ant control. Significant time and effort was devoted to developing text and translations to support BAPPG's annual KSOL radio advertisement campaign and an on-air contest for Spanish speakers.

In July 1999, the City will be evaluating KSOL's annual family event as a mechanism for delivering water pollution prevention messages to Spanish speakers.

Vietnamese Speaking Audience

During this reporting period, City staff translated two Santa Clara Valley Urban Runoff Pollution Prevention Program brochures for the automotive industry into Vietnamese. Staff also prepared a poster highlighting BMPs for automotive shops in English and Vietnamese. All materials that the City

[7] Special thanks to the "Our Water Our World" partnership for the use of English text prepared by that group.

developed were made available to other Bay Area POTWs through the BAPPG.

Finally, near the end of the last reporting period, the City placed a full-page advertisement on the rear cover a local Vietnamese monthly magazine. The ad focussed on the importance of individual actions in preventing water pollution.

School and Youth Outreach

School Programs for the reporting period stressed water conservation, storm drain pollution prevention, and the Bay protection afforded by the Plant.

City Park Rangers gave water awareness presentations to 147 classes, grades 4-7, representing more than 4500 San Jose students. City staff also made presentations at the following locations:

1. High school science classes encompassing about 722 students;
2. A middle school science fair;
3. Two elementary school assemblies; and
4. Two elementary class presentations.

Classroom presentations more than tripled during the second half of the 1998-99 school year, bringing the totals for this year to 218 presentations given to more than 7000 students. This represents more than a fourfold increase in outreach to students compared to the same period last year.

Over the past six months, the City distributed 54 *It's Wet, It's Wild, It's Water* teacher's packets. Each packet includes lesson plans and a video covering water conservation and household pollution prevention. Total distribution to date is 975 packets.

One SBWR teacher's workshop was held, demonstrating the use of the SBWR's middle school curriculum to 25 teachers.

V-B4. COMMERCIAL AND INDUSTRIAL OUTREACH

The City delivers its outreach messages to commercial and industrial audiences using an IU Academy, an IU newsletter, events, its web site, tours, and speaking engagements upon request. Inspectors also deliver outreach materials and messages during inspections.

The Commercial and Industrial audience is further divided into regulated and non-regulated groups. "Non-regulated" refers to businesses not

regulated by the Pretreatment Program. The regulated group can include institutions such as hospitals.

Industrial User (IU) Academy

During the reporting period, staff presented the 2-day class entitled, "Pretreatment Program for Permitted Industrial Users," twice in the month of May 1999. Altogether, twenty-three participants from eighteen companies attended the two classes. Another two-day IU Academy class is planned in the next six months.

Industrial User (IU) Newsletter

During the reporting period, two issues of the *Tributary Tribune* (an IU newsletter) were mailed to the Pretreatment Program contacts at 400 permitted companies, and to 150 other interested parties.

The winter issue discussed highlights from the 1998 Clean Bay Strategy Report (South Bay Watershed Activities), the City's Watershed Grant Program, and the Nickel Acute-to Chronic Ratio Study conducted in South San Francisco Bay. The spring issue discussed the Storm Water Enforcement Act, Stormwater Infiltration Devices and Watershed Management in the Santa Clara Basin.

Copies of IU Newsletters can be found in Appendix C, and are posted on the ESD web site.

ESD Web Site

The ESD web site is located at the following address:

www.ci.sj.san-jose.ca.us/esd/

http://www.slowtheflow.com

In addition to information on our key programs and frequently requested forms and contact information, there are pages dedicated to the Watershed Management Initiative (WMI), commercial facilities, and residential water pollution issues

The last ESD site traffic analysis reveals that there were 6015 user sessions last month, and 194 user sessions per day. Nearly fifty-two percent of the user sessions at the web site were classified as from a company (i.e. industrial or commercial inquiry). Traffic is expected to continue rising as advertisement of the site by means of ESD publications and by word of mouth continues.

Currently, water pollution prevention information on ESD and the Watershed Protection Division web sites is organized by type of environmental service. This method of organization presumes users are

familiar with those services. For users that are not familiar with our services, staff is developing a new approach that will provide access to our messages by audience. Users need only be able to identify themselves as a resident, commercial business, industrial user, etc. The pilot for this method of access to our information will focus on water pollution prevention for residents.

Concurrently, a pilot survey tool is being put together that will ask visitors if they found what they were looking for, and whether they plan to use the information they gathered at the site. After a period of time, a follow-up e-mail will ask those same visitors what behaviors they have changed, stopped, or started, as a result of the information they gathered at our web site.

The site continues to grow almost daily. New materials posted on the ESD web site during this report period include "Resources for Educators", and materials for "Ultra Low Flush Toilet Rebates" for apartment managers and owners. Numerous forms and other regulation-related materials were also uploaded.

Specialized BMPs and materials

Although regulated and non-regulated commercial facilities are separate audiences, specific outreach materials may be used for both of these groups.

Specialized BMPs and materials developed during the reporting period are listed below:

1. *Body Work* and *Washing Cars* were translated into both Spanish and Vietnamese based on a recommendation from inspection staff. These brochures are from the Bay Area Storm Water Management Agencies Association (BASMAA) series "Guidelines for Vehicle Service facilities".
2. *Sawcut Slurry* is a San-Jose specific version of an existing BMP. The brochure identifies three simple steps for keeping slurry out of storm drains and can be used for contractors and entities employing those contractors.
3. *Dewatering from Construction Sites and In-Ground Utilities Maintenance Facilities* is an eight-page booklet co-authored by San Jose and Palo Alto. It discusses methods for keeping sediments and contaminated groundwater out of the storm and sanitary sewer systems.
4. *Do it Right: Auto Repair* is a colorful poster providing simple tips for maintaining a clean shop in order to prevent pollution. This poster in

English, Spanish and Vietnamese was developed to help inspectors educate shop managers. It is intended for display in shops for shop staff and managers to utilize, as a reference.

The City, in conjunction with the Santa Clara Valley Urban Runoff Pollution Prevention Program, is working to revise the existing eight part series of Construction Industry BMPs. When revisions are complete, four pieces in the series will be translated for use in the Spanish and Vietnamese speaking communities. This should be completed during the next six months.

During the reporting period, the Pretreatment Program distributed calendar stickers to remind permitted industrial users of important dates. The stickers remind IUs of SMR sampling, when to submit SMR reports, and special compliance schedule dates.

Plant Tours

Tours have been used by different divisions of ESD to highlight the importance of pollution prevention, discuss the need for residential and commercial water conservation, and instruct students on the process of wastewater treatment. As a mechanism to link the result of an action (i.e. dumping hazardous materials or even just too much water down the drain) to a place (i.e. the Plant and the Bay), tours have become an effective method to reach various audiences with this important message.

During the last six months, Plant tours were given to 51 groups, representing about 1270 people, an increase in the total number of people touring the Plant of more than 30% over the last two reporting periods combined.

During this reporting period, the City funded a grant to the Don Edwards San Francisco Bay National Wildlife Refuge Environmental Education Center at Alviso. Two services for which the grant provides are combined tours of the Plant and the wetlands it protects, and delivery of pollutant and flow-reductions and messages to tour goers. The tours provide an overview of the Plant, its functions and its importance to San Jose and the rest of Silicon Valley, and encourage individual responsibility for pollution prevention.

A new video was produced this year that highlights the Plant, and its processes. The video is an important “first-step” to prepare classes interested in coming to the Plant, as well as providing an effective outreach tool to those unable to visit the Plant.

APPENDIX A

Clean Bay Strategy Timeline

APPENDIX B

List of Watershed Management Initiative Signatories

Fact Sheets

Subgroups of the Santa Clara Basin Watershed Management Initiative

APPENDIX C

Outreach Program