San José-Santa Clara Regional Wastewater Facility

2015

Pollution Prevention (P2) Annual Report

Reporting Period:

January 1 – December 31, 2015

San José-Santa Clara Regional Wastewater Facility
2015 Pollution Prevention Annual Report

San José-Santa Clara Regional Wastewater Facility Annual Reports are posted on the City of San Jose website at: http://www.sanjoseca.gov/regulatoryreports

This report summarizes the past year of Pollution Prevention (P2) activities within the San José – Santa Clara Regional Wastewater Facility collection area. A description of the facility, its service area, and the process for selecting pollutants of concern is provided. Subsequent sections summarize activities, accomplisments, and outreach efforts over the past year that were aimed at minimizing those pollutants.

Two big changes to the P2 program occurred this year. One has been start-up of a permanent County Hazardous Household Waste (HHW) collection facility in San Jose in September 2014 with long-term cooperative agreement signed in 2015 between the County HHW program and participating Cities. The other was City of San Jose's expansion of environmental outreach efforts via contracted services provided by US Fish and Wildlife Service at their Don Edward Wildlife Refuge Education Center beginning in June 2015. It is expected that these two new venues of service will consolidate, focus, and expand two important areas of P2 efforts: hazardous waste collection and outreach.

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On the cover: Environmental Services Specialist, Sandra Freitas assists a San Jose resident at a Neighborhood Cleanup (NCU) Event.

Contents

Two views of the SJ-SC RWF Outfall Channel.

TOP: looking upstream toward the wastewater facility.

Right: looking down at striped bass in treated effluent as it flows to the Bay.

If we see pollutants here, we all have a serious problem.

REGULATORY REQUIREMENT

The Annual Pollutant Minimization Report (also known as the Pollution Prevention, or "P2" Report) for the San José-Santa Clara Regional Wastwater Facility (also referred to as "the Facility" or "SJ-SC RWF") is prepared in accordance with NPDES Permit Number CA-0037842, Water Board Number R2-2014-0034.

Permit provision VI. C. 3. b. establishes the following requirements for an annual report that shall be submitted by February 28th each year:

i. **Brief description of treatment plant**, including service area and treatment process.

ii. **Discussion of current pollutants of concern** and reasons for choosing the pollutants.

iii. **Identification of sources for pollutants of concern** including methods for identifying and estimating sources to include sources not within discharger's control, such as pollutants in potable water supply and air deposition.

iv. **Identification of tasks to reduce the sources of pollutants of concern.** The discussion shall prioritize tasks and provide implementation timelines. Participation in group, regional, or national tasks that address pollutants of concern is encouraged.

v. **Outreach to employees.** Discharger shall inform employees about pollutants of concern, potential sources, & how they might help reduce discharge to the facility.

vi. **Continuation of Public Outreach Program.** Discharger shall prepare a pollution prevention public outreach program for its service area. Outreach may include participation in community events, school outreach, plant tours, news articles, newsletters, radio or television stories, advertisements, utility bill inserts, or web sites.

vii. **Discussion of criteria used to measure Pollutant Minimization Program task effectiveness.** Discharger shall establish criteria to evaluate the effectiveness of the Pollution Minimization Program. Discussion shall identify criteria used to measure effectiveness of tasks in items iii. iv. v. and vi above.

viii. **Documentation of efforts and progress.** Discussion of all Pollutant Minimization Program activities during the year.

ix. **Evaluation of Pollutant Minimization Program & task effectiveness** based on criteria developed in vii above.

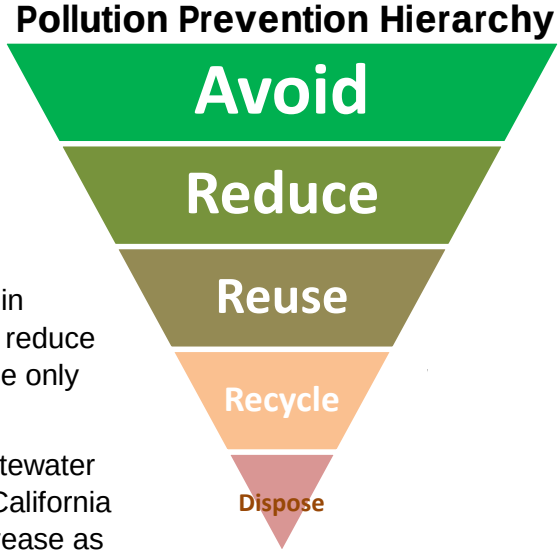
x. **Identification of specific tasks and timelines for future efforts.** Discharger shall explain how it intends to continue or change tasks to more effectively reduce the amount of pollutants flowing to the facility and into effluent.

This report summarizes pollution prevention activities during the period from January 1, 2015 to December 31, 2015.

INTRODUCTION

What is P2?

The definition of Pollution Prevention (P2) is to reduce or eliminate waste at the source instead of managing and paying to dispose of the waste after it has been generated. The basic strategy is common sense application of the "P2 Hierarchy:" Avoid, Reduce, Reuse, Recycle, before you dispose.



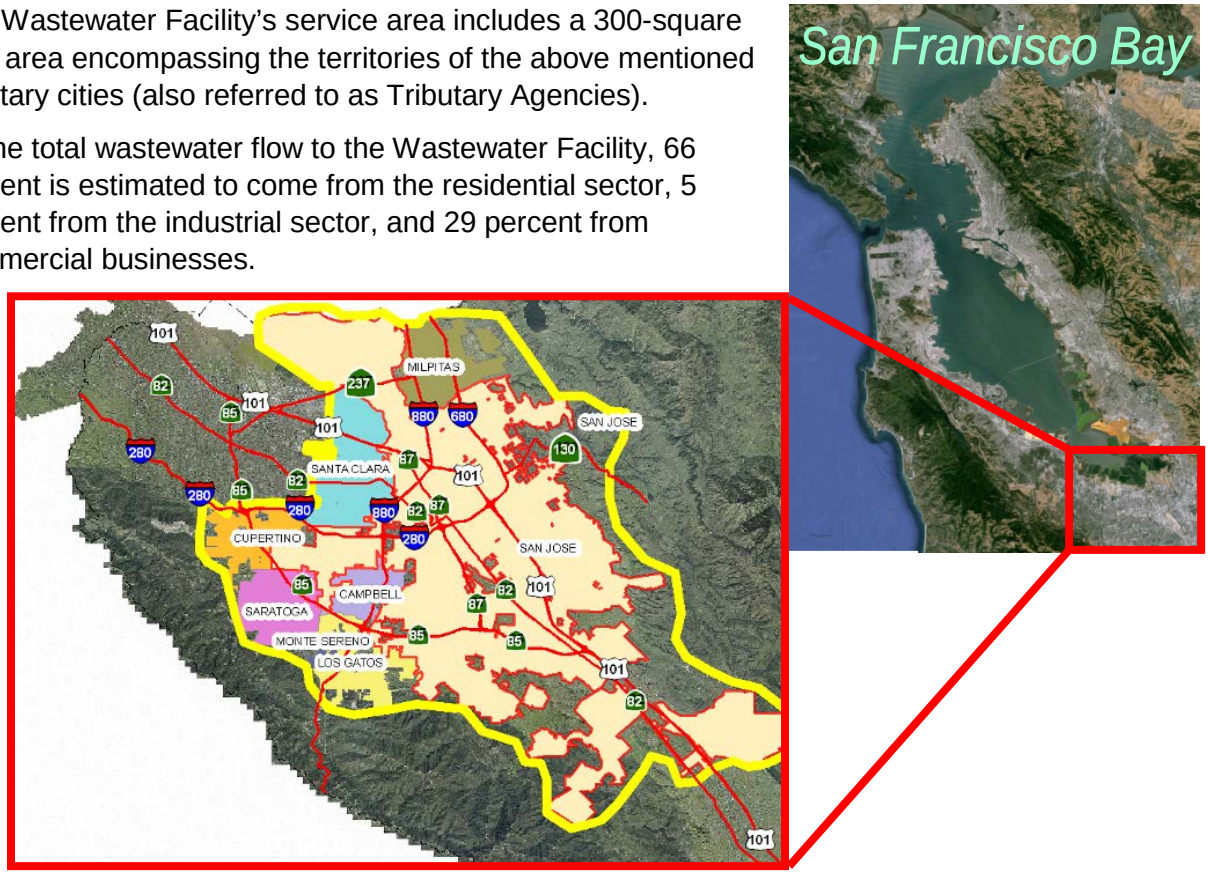
It is far cheaper and easier to control pollution by not generating it in the first place. Avoid products that result in waste or pollution. If use of a product cannot be avoided, reduce use and reuse as much as possible. Recycle and dispose only as necessary.

The state-of-the-art San Jose-Santa Clara Regional Wastewater Facility discharges the cleanest wastewater in Northern California but, costs and effectiveness of wastewater treatment increase as more pollutants and trash are added to the sanitary sewer system.

SERVICE AREA DESCRIPTION

The Wastewater Facility's service area includes a 300-square mile area encompassing the territories of the above mentioned tributary cities (also referred to as Tributary Agencies).

Of the total wastewater flow to the Wastewater Facility, 66 percent is estimated to come from the residential sector, 5 percent from the industrial sector, and 29 percent from commercial businesses.



WASTEWATER FACILITY OVERVIEW

The San José-Santa Clara Regional Wastewater Facility is located at 700 Los Esteros Road, in San Jose. At this location roughly 100 million gallons per day of sewage flows in and receives 8 to 10 hours of advanced treatment. Some of the treated wastewater is recycled. The majority flows out into Artesian Slough and Lower Coyote Creek. Recent studies of fish, phytoplankton, and invertebrates indicate that the waters immediately downstream of the SJ-SC RWF support the most dense diverse populations of fish and estuarine invertebrates (See SJ-SC RWF Annual Self Monitoring Report: http://www.sanjoseca.gov/regulatoryreports, which emphasizes both responsibility and credit for the facility's past and ongoing ability to treat wastewater to the highest level of purity.

The facility began service to the cities of San Jose and Santa Clara in 1956. Through the 1960s and 1970s additional cities and county sanitation districts tied into the SJ-SC RWF and population grew. The level of wastewater treatment also improved as the facility expanded. The original facility provided no more than screening, grit removal, and primary sedimentation. In 1964, secondary Return Activated Sludge aeration basins were added to remove a substantial amount of organic material. A disinfection system became operational in March 1971. Nitrification basins and a filtration facility went into service in 1979 to remove ammonia and particulate matter. Starting in 1997, secondary and nitrification aeration basins were reconfigured to perform Biological Nutrient Removal (BNR) to reduce the discharged loads of nitrogen, phosphorus, and copper.

Today, the facility stands as the largest and most advanced wastewater treatment plant in the San Francisco Bay area. It receives wastewater from roughly 1.4 million residents and more than 17,000 commercial and industrial facilities, including 244 permitted industrial users (IUs) in the following cities and districts:

- San José,
- Santa Clara,
- Milpitas,
- Cupertino Sanitary District,
- County Sanitation Districts 2-3,
- Burbank Sanitary District, and
- West Valley Sanitation District (serving Campbell, Los Gatos, Monte Sereno, and Saratoga).

Pollutants of Concern

Pollutants of Concern and Rationale
A pollutant of concern is any toxic or undesirable substance that passes through the SJ-SC RWF or otherwise imposes an undesirable operational cost on the facility.

Tier 1: Any discharged substance that exceeds an NPDES permit limit would automatically be a pollutant of concern. Fortunately, the SC-SJ RWF has not discharged any pollutant from treated wastewater at concentration that poses a threat of permit violation for at least a decade.

Tier 2: A secondary level of concern is for substances, even though treated and discharged at concentrations that meet permit limits, still exceed, or threaten to exceed, water quality objectives in the Bay. Pollutants in this category generally include those for which a Total Maximum Daily Load (TMDL) has been published. Water quality objectives are established in the San Francisco Bay Regional Basin Plan for U.S. EPA listed priority pollutants (e.g. mercury, copper, cyanide, some pesticides, and PCBs).

Tier 3: A third tier of pollutants are those that add cost, difficulty, or could potentially upset facility or collection system operations. These include fats, oils, and grease (FOG) that clogs pipes and fills bar screens.

Tier 4: The last category is for "Emerging Contaminants. These are pollutants not listed by Basin Plan or as an EPA priority pollutant, but are known to be present in wastewater. These include pesticides, pharmaceuticals, and plastics that can be detected at concentrations not yet identified as causing harm to aquatic organisms, but for which research and control strategies appear to be prudent.

Identification of Pollutant Sources

Sector Load Studies and Trunkline Monitoring. Sector Load Studies are periodically performed to identify or confirm characteristics of wastewater arriving to the facility from industrial, commercial and residential sources. The last sector load study was completed and reported in the 2014 P2 Report.

Occasionally, more targeted sampling and analysis of wastewater flowing through major collection system trunklines is performed to narrow the source location of specific pollutants. A Source Control Team, under the SJ-SC RWF Pretreatment Program, also performs surveillance monitoring in the collection system when investigating sources of specific pollutants detected either at facility influent or in the trunklines. This type of sewer source investigation

Inspectors Isaac Tam, John Fosnaugh, and Chris Fivecoat set up an automatic sampler to investigate pollutant sources.

is fairly expensive and labor intensive. In practice, these efforts have usually focused on metals, such as copper, nickel, and mercury. But, any persistent pollutant, detected in facility influent at high enough concentration, could be tracked in this manner.

Influent, Effluent and Sludge Monitoring. EPA priority pollutants are monitored at least semiannually at facility influent, effluent and Biosolids sludge. Detailed results of these sampling events are published in Annual and Semi-annual Industrial User Pretreatment Compliance Reports which are posted on the City of San Jose, Environmental Services Department website at: http://www.sanjoseca.gov/regulatoryreports

Much of this same information is also summarized in the Regional Wastewater Facility Annual Self Monitoring Reports which can also be found at the same web address.

Pollutants and their sources:

Pollutant	Rationale	Source, or potential source
Mercury	TMDL	Dental amalgam waste, thermometers, thermostats, compact fluorescent light bulbs.
PCBs	TMDL	Dielectric fluid in transformers built prior to 1978. Building caulking and some roofing materials from pre-1980s construction.
Copper	Permit Action Plan	Copper plumbing, pool and spa maintenance, vehicle service facilities
Cyanide	Permit Action Plan	Industrial users, and always a very small concentration that is a byproduct of chlorine disinfection
Pesticides	TMDL & Emerging Contaminants	Residential ant and spider control, and potentially professional pesticide operators
Fats, Oils, and Grease	Operational Impact	Kitchen waste from restaurants and residents
Pharmaceuticals	Emerging Contaminants	Residential or hospice disposal in the toilet. Some pharmaceuticals, such as albuterol, oflaxacin, fluoxitine (Prozac)carbamezepine, and some antibiotics are excreted by human users at low concentrations that still pass through the treatment facility, and into the Bay.
Microplastics	Emerging Contaminants	Beads in facial scrubs, toothpastes and other personal care products. Fibers from clothing.

FOG and Sewer Investigations. The SJ-SC RWF maintains a team of 9 inspectors and assistant inspectors who investigate collection system problems. As the name of the team suggests, blockages caused by Fats, Oil, and Grease (FOG) and determining sources are part of their job. This team also performs routine inspections of interceptors and grease traps at food service establishments to ensure the devices are installed and maintained.

Special Studies. The San José-Santa Clara Regional Wastewater Facility serves the largest population of any wastewater treatment plant in the San Francisco Bay Area with an economically diverse service area that includes substantial residential, commercial and industrial sources. For this reason, the facility has historically conducted, or supported, numerous scientific studies to identify potential pollutants and their sources. The SJ-SC RWF currently supports and provides samples to projects coordinated by the San Francisco Estuary Institute and Regional Monitoring Program aimed at identifying pollutant problems that may pass through the wastewater facility and into the Bay.

IDENTIFICATION OF TASKS TO REDUCE SOURCES OF POLLUTANTS

Monitoring. Sample results from influent and effluent monitoring and collection system sampling provide the first indication that a pollutant is present and the extent to which the treatment process is able to adequately treat it. Monitoring can also provide some clues that indicate the source of the pollutant and in-turn the likely tasks to reduce it at the source.

Regional Collaboration. Pollutants of concern to the SJ-SC RWF are fairly common to many wastewater treatment agencies. The SJ-SC RWF is a founding member and one of five principal member of the Bay Area Clean Water Agencies (BACWA). The facility also participates in leadership roles with San Francisco Estuary Institute (SFEI) and the Regional Monitoring Program (RMP). Ideas for reducing pollutants are often generated by collaborating with other facilities through those venues. Specific tasks are ground truthed within our own service area by surveying residents, commercial and industrial businesses, hospitals, government agencies, and retail stores, as appropriate.

BMPs. Very often, industry guidelines, in the form of Best Management Practices (BMPs) have already been generated by industrial trade groups or agencies under EPA. Local collaboration though Bay Area Pollution Prevention Group (BAPPG), now a committee under BACWA, serves as the local clearinghouse that has developed or vetted BMPs best suited for Bay Area needs.

Outreach. Outreach to business leaders and members of the public usually inform tasks that reduce pollutants at the source. No one knows better how stuff ends up in the drain or the toilet than the person disposing it. BMPs and guidelines are usually developed or refined by reviewing and testing them at the source of the pollutant.

CRITERIA TO MEASURE P2 PROGRAM TASK EFFECTIVENESS

Measuring actual effectiveness of P2 efforts can be challenging. For some very low concentration pollutant no single metric may work. Measures are listed below from most effective to least.

Influent and Biosolid Monitoring. The SJ-SC RWF, applying secondary Biological Nutrient Removal (BNR) and gravity filtration processes, arguably produces the cleanest effluent in Northern California. Comparisons of influent and effluent pollutant concentrations are published in facility Annual Self Monitoring Reports and Industrial User Pretreatment reports. The treatment process is so effective that effluent pollutant levels are low and unaffected by minor changes in influent concentrations. Influent and biosolids monitoring focuses investigation on waste streams more likely to identify pollutants in need of pollution prevention measures.

Influent monitoring, performed at the facility's headworks provides the best long term trends to show if a given pollutant is increasing or decreasing. Given the size of the collection area, no single discharger and no result from a single P2 task can be detected. But, over the past two decades, considerable reductions in all metals and tributyltin have been measured in influent, for example, and some of these reductions have been the result of industrial source control and product bans on tributyltin and copper sulfate root control agents.

Most pollutants removed in primary, secondary/BNR, or filtration processes end up in Biosolids sludge, so this is the other logical place for monitoring. The metals concentrations in Biosolids have also dropped in recent decades, particularly for lead, silver, and zinc, as the overall loads to the facility have decreased. However, Biosolids concentrations cannot be compared to influent and effluent results in the short term. The SJ-SC RWF employs a 3-week digestion process and 3 to 5 year dewatering process for Biosolids. Thus, the Biosolids sampled on any given day actually represent a composite wastewater that passed through the plant years before.

Inspections of commercial and industrial facilities. The numbers of inspections and percent of facilities in compliance with local discharge regulations is the next measure of P2 program effectiveness. Inspection compliance provides only an indication, and only for those pollutants discharged by the inspected business or industry.

Households utilizing Household Hazardous Waste (HHW) services and quantity of material collected as (HHW). When pounds or gallons of material of hazardous substances, such as mercury in thermometers, unwanted pharmaceuticals, or kitchen grease, is collected, it is presumed that this represents material that may have otherwise been disposed down a drain or toilet. This presumption cannot be verified. On the other hand, HHW collection events highlight and advertise concerns about toilet disposal of these materials.

Numbers of people at outreach events, BMP brochures distributed, radio and television ads. Outreach that communicates P2 messages can be vitally important for the overall pollution prevention effort. The number of people attending outreach events, including outreach to employees, is indicates that people were messaged. However, simply counting the number of messages that were broadcast tells very little about the effectiveness of the program. Distributed and unwanted BMP brochures are rightfully called litter! Effective messaging is often non-specific. The most effective advertising aims at selling a vision or emotion, not a list of do's and don'ts. Literal counts of messaging materials and activities give a sense of the size of the program, but not necessarily the effectiveness.

MERCURY & PCBS

Mercury and Polychlorinated Biphenyls (PCBs) are legacy pollutants for which TMDLs were developed and a Watershed Permit established limits. The Mercury Watershed Permit was implemented in 2008. Regional Board Order No. R2-2011-0012 amended the permit to add PCBs waste discharge requirements. The Mercury and PCBs Watershed Permit establishes mercury and PCBs limits and pollution prevention triggers for the San José-Santa Clara Regional Wastewater Facility.

Mercury

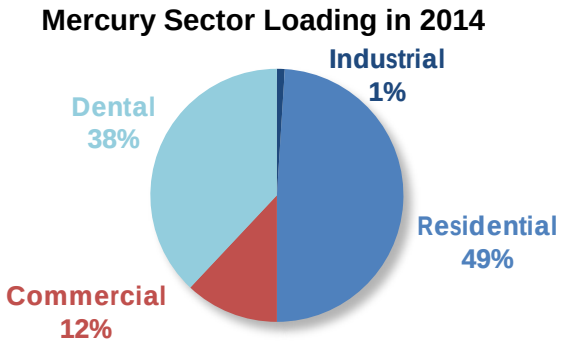
In a perfect world, there would be no mercury in wastewater effluent. Mercury is one of a small group of heavy elements that is only toxic in a biological setting. Despite mercury's usefulness in industrialized society, it serves no useful purpose for any life form. Unfortunately, due to the long history of human use, mercury is widely dispersed in the atmosphere, on the land, even in our teeth! The SJ-SC RWF does a very good job removing this pollutant from wastewater down to part-per-billion concentrations, but there is room for much reduction.

In 2015, concentrations of mercury in wastewater facility effluent were again less than 10% of the mercury concentration limits and triggers set in the Watershed Permit.

Mercury Watershed Permit Limits and Results	Annual Limit (kg/yr)	Monthly Limit (µg/L)	Weekly Limit (µg/L)	Daily Trigger (µg/L)
Average Effluent Limits	0.800	0.025	0.027	
Triggers for Advanced Secondary Plants		0.011		**0.021**
2015 Maximum Results	**0.127**	**0.00175**	**0.00175**	**0.00175**

Mercury Sources. Mercury is a legacy pollutant in the Guadalupe River watershed and in the Bay. In the mid 1800s, liquid mercury (quicksilver) was widely used in gold mining operations. The New Almaden Mine located in the South Bay was once the largest producer of mercury in North America and provided quicksilver for gold mines. However, the main identifiable source of mercury discharged to the sanitary sewer system today is from dental amalgam and dental practices. Lesser potential sources include old-style mercury thermometers and fluorescent light bulbs, assuming these items are broken and discharged to a toilet or drain.

In the past dental procedures were the largest source of mercury to the Wastewater Facility. More recent sampling shows residential sources are now the largest contributor. This is likely due to installation of amalgam separators at all dental practices that remove and replace amalgam restorations. A sector loading study, completed in 2014, determined the percentage of mercury loads discharged to the SJ-SC RWF collection systems as shown in the figure below.



Dental Mercury Amalgam Program. Wastewater from dental practices continues to be monitored through the City's Dental Amalgam permitting and inspection program. Implementation of a dental program to issue Dental Wastewater Discharge Permits began in 2009 and continues in 2015. Dental permits are on a five-year cycle and the program continues to reissue permits to dental practices in compliance with program requirements whose five-year permits were to expire. The Dental Amalgam Program issued 34 new permits in 2015 to dentists in the Tributary area, bringing the total number of permitted dental practices in the program to 828. This represents a 99 percent participation rate of all identified dentists.

Permit holders are inspected for compliance a minimum of once during the five-year permit cycle. Requirements include implementation of dental amalgam Best Management Practices (BMPs), annual report submission, and installation of an amalgam separator. Certifications of amalgam separator Installation and BMP implementation have been received from 98% of dental practices. In 2015, annual report submission compliance increased to 100% due in part to increased enforcement against late reports. Dental Amalgam Program Annual Report Forms, BMPs, and amalgam separator certifications are available for download on the City's website.

Inspections in 2015 verified that amalgam separators were installed at over 99% of practices. The remaining 1% represents newly identified dental facilities. Initial inspections of dental practices in tributary cities and follow up inspections in San José will continue in 2016. Violations were identified at 311 dental practices in 2015. The majority of these were late reports or amalgam separator maintenance infractions. All violations were enforced and resolved.

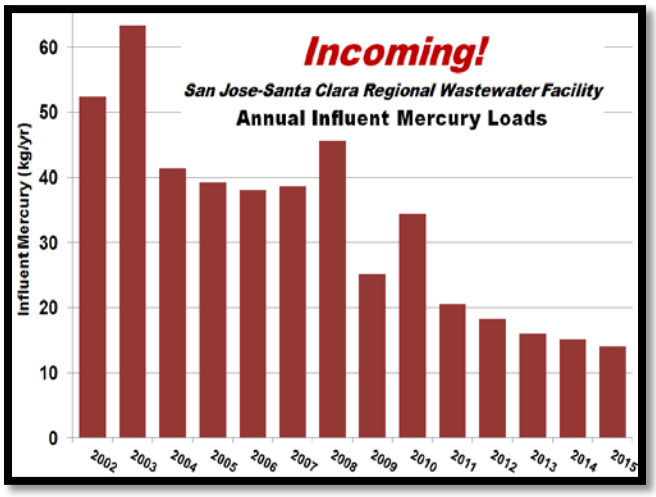
Permanent County Household Hazardous Waste (HHW) facility in San Jose. The new permanent County HHW facility began operations in September 2014. In June 2015, San Jose and several participating cities in the tributary area signed funding and participation agreements that commit to operating the facility to serve area residents and small businesses. The new permanent facility now takes the place of a number of pollution prevention "tabling" events that the Cities and other agencies had been setting up in conjunction with holidays and celebrations.

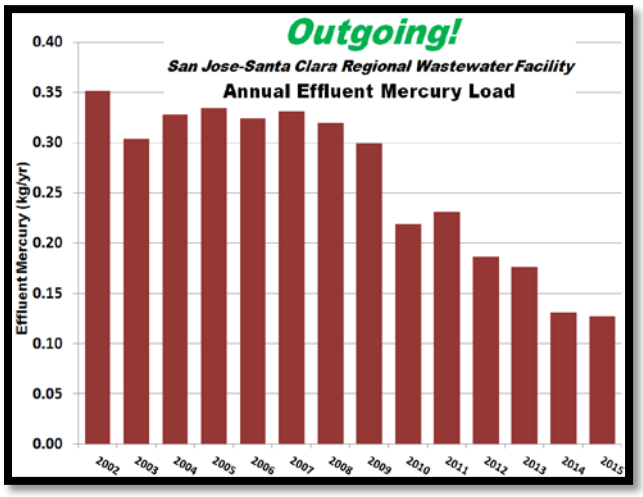
The HHW facility receives all manner of HHW materials by appointment and free of charge for local participating residents most Fridays and Saturdays throughout the year. The HHW collections are not exclusive of mercury, but mercury containing waste items, like fluorescent bulbs, thermostats, and thermometers are an important part of the collected material and outreach efforts associated with this facility. The facility also serves conditionally exempt, small

quantity generators (small businesses). Small businesses served, include local government agencies, Goodwill Industries, & Salvation Army.

Mercury Prevention Plan			
Source	**Message / Program**	**Implementation & Timeline**	**Evaluation**
Commercial: Dental Amalgam Program	Issue Dental Wastewater Discharge Permits to dental facilities.	Continue to track the following: ▪ Number of permits issued. ▪ Percent of practices with installed amalgam separators & following BMPs. ▪ Percent of offices inspected.	By the end of 2015, a total of 828 permits were active. Issued permits to 34 practices. 98% of practices certified for amalgam separators and are following Dental Amalgam BMPs. Completed 20% dental office inspections in 2015.
Residential and Small Business: **Fluorescent tubes and mercury-containing devices**	Support the County of Santa Clara Department of Environmental Health (DEH) Household and Small Business Hazardous Waste program.	Continue support of the County Household and Small Business Hazardous Waste Program. ▪ Contract arrangement with County sets minimum level of service of at least four collection events per month. ▪ Amount of material collected over the year.	County DEH hosted 4 temporary and 115 permanent hazardous waste drop-off events for households and conditionally exempt, small quantity generators. In FY 14-15, the HHW program recycled: 220 pounds of elemental mercury, 144,996 pounds of fluorescent lights, and 156,069 pounds of household batteries.

The Bottom Line: Mercury concentrations in both influent and effluent have been monitored monthly for many years. The facility continues to remove 98 to 99 percent of all mercury from wastewater. More importantly, the total mercury load discharged to the sewer collection system appears to have fallen to almost one third its previous level in less than 15 years! Some of this reduction is likely attributable to the success of local P2 efforts, but in fairness, the majority of the reduction is likely a result of changes in the dental industry: more white fillings = less mercury in teeth.



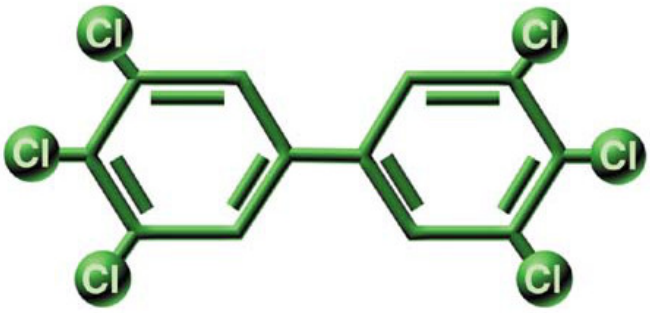


PCBs

Order No. R2-2012-0096, the re-issued Mercury and PCBs Watershed Permit, was adopted by the Regional Board in December 2012. The re-issued permit includes general language regarding evaluation and proposed control measures of identified controllable sources of Polychlorinated Biphenyls (PCBs) or mercury.

Pretreatment PCBs Control Program.
The Pretreatment Program evaluates Industrial Users (IUs) every five years as part of the wastewater discharge permitting process. The permitting process requires IUs to disclose any Total Toxic Organics (TTOs) maintained onsite, including PCBs. The Pretreatment Program samples for TTOs, including PCBs, if TTOs are known or suspected based on federal regulations. If TTOs are known or suspected to be present at an IU facility, the Pretreatment Program requires the IU to either conduct analysis for TTOs, or certify that a plan is in place to manage TTOs to prevent discharge to the sanitary sewer.

PCBs Pollution Prevention Plan – 2015 Evaluation.
No PCBs have been detected at industrial facilities for well over a decade. PCBs are not detected in the SJ-SC RWF influent or effluent using standard detection methods (Method 608).



COPPER & CYANIDE

Both copper and cyanide are pollutants for which Basin Plan Amendments (BPAs) for the Bay and Site Specific Objectives (SSOs) for the SJ-SC RWF have been established. Site Specific Objectives determine the maximum discharged concentrations that will not harm aquatic life in local receiving water.

A 2009 BPA replaced previous copper and nickel action plans with a Bay-wide Copper Management Strategy (CMS). This strategy removed requirements that the Facility monitor copper and nickel in the Lower South Bay (LSB). The BPA also removed nickel as a pollutant of concern. The maximum daily and average monthly allowable concentrations of copper that may be discharged from this facility are: 19 and 11 µg/L, respectively.

In 2008, a Cyanide BPA and implementation strategy for San Francisco Bay was approved. The BPA established a cyanide chronic SSO of 2.9 µg/L (4-day average) for San Francisco Bay and a dilution credit of 3:1 (dilution of 2X) for the SJ-SC Wastewater Facility. The Facility's maximum daily and average monthly cyanide limits to meet the SSO are 13 and 5.7 µg/L, respectively.

Copper Control Program. Wastewater Facility Permit Provision VI.C.5.c. "Copper Action Plan," requires the Facility to implement a copper control program. The following provisions have been incorporated in the Copper Pollution Prevention Plan below:

Copper Action Plan
1: Review potential sources of copper. 2: Implement Copper Control Program … to reduce copper sources identified in Task 1. The plan shall consists, at a minimum, of the following elements: a. Provide education and outreach to the public (e.g., focus on proper pool and spa maintenance and plumbers' roles in reducing corrosion); b. If corrosion is determined to be a significant copper source, work cooperatively with local water purveyors to reduce and control water corrosivity, as appropriate, and … c. Educate plumbers, designers, and maintenance contractors for pools and spas to encourage best management practices that minimize copper discharges.

Fortunately, concentrations and loads of copper in sanitary sewage have fallen dramatically over the past 20 to 30 years. In addition, the SJ-SC RWF ability to remove copper through the treatment process was enhanced in 1979, with the addition of the filtration process that removes particulate copper, and enhanced again in 1998 with conversion of the secondary process to Biological Nutrient Removal (BNR).

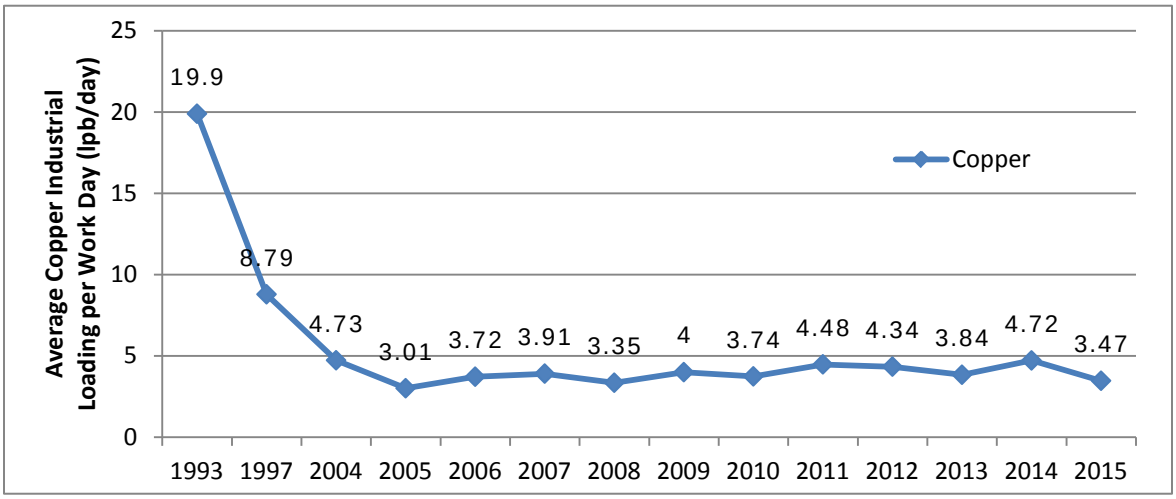
The 1998 facility improvement, conversion to BNR process, points to an interesting aspect of copper. Unlike mercury and PCBs, copper is an essential nutrient at very low concentrations. The nitrifying and denitrifying bacteria that oxidize ammonia and reduce nitrates to elemental nitrogen require tiny amounts of copper to support their cellular electron transport structure. Copper is useful to these bacteria in a similar way that most higher life forms require iron to facilitate cellular respiration. In practical terms, this means that some of the dissolved copper that passes through the facility becomes bound up in the microbial biomass and removed from the wastewater. However, copper concentrations higher than several parts per billion start to

have a toxic effect on aquatic life. For that reason, we continue to implement pollution prevention measures to ensure concentrations stay within a low range.

Copper Sources. The largest contribution of copper comes from the residential sector as a result of corrosion of copper water supply pipes and tap water supplies. Commercial and industrial sectors contribute smaller proportions of the overall copper load. The most recent Sector Loading Study in 2014 again confirmed that roughly 57% of copper in sanitary sewer wastewater was originating from residential sectors of the collection system. Commercial businesses collectively discharge about 33% of the entire copper load, and industry is responsible for only 10%.

Copper Industrial Loading. Once upon a time, industry contributed about a third of the total copper load arriving at the SJ-SC RWF. Then between 1993 and 2004, copper from industry fell to less than a quarter of its previous average daily load. The load has been fairly stable ever since. This is due to many factors including source control and pollution prevention efforts, production efficiencies, fluctuations in the economy, and facility closures.

Despite the drop in copper loads from industry, SJ-SC RWF Source Control Program inspectors continue to inspect and monitor for high concentration copper discharges from metal finishers & printed circuit board manufacturers. Inspectors also distribute the BMP, "Guidelines for Industrial Wastewater Reuse" and "Guidelines for Efficient Water Use" as opportunities arise.



Average Daily Copper Industrial Loading

Copper Residential Loading. Because of success in reducing industrial loads, the residential sector now stands as the largest contributor to the total copper load. It is more difficult to specifically parse out copper loading from residential and commercial sectors because the several hundred thousand residences and roughly 17,000 commercial establishments are spread out over the entire service area. However, total copper loads to the facility have not increased over the past decade.

Ironically, some of the Best Management Practices (BMPs) distributed to businesses and residents to protect stormwater and creeks, actually should increase copper loads to the

wastewater facility. These include BMPs encouraging residents to use commercial car washes and drain pools and spas to a sewer cleanout. In both cases the copper laden discharge is directed from a storm drain to a sanitary sewer connection. This continues to be very good guidance. Copper can be very toxic to fish and other organisms in the creeks. At the same time, the SJ-SC RWF removes 98% of copper from wastewater. Concentrations of copper in facility influent and effluent have remained steady for over a decade.

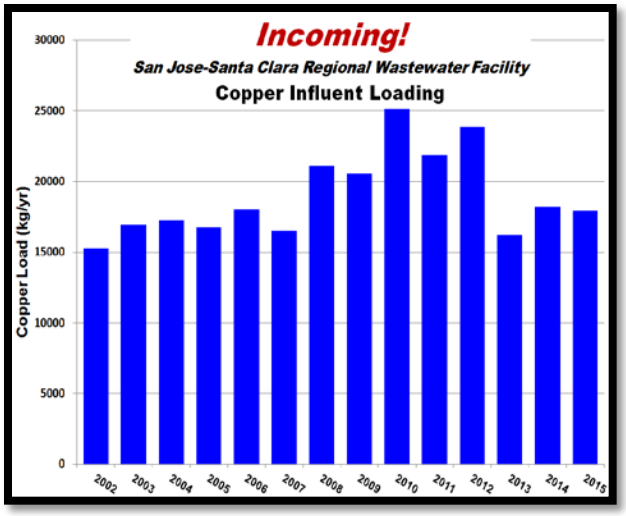
Copper in source water. The majority of the small remaining copper load that persists in wastewater today comes from the slow corrosion of copper pipe in homes and businesses. This remaining load is small and is not posing a threat to receiving waters given the effectiveness of the SJ-SC RWF at removing copper. In the SJ-SC RWF service area, the main water wholesaler is the Santa Clara Valley Water District. The District operated in accordance with EPA's Lead and Copper Rule (LCR) by adding orthophosphate inhibitor to control pipe corrosion. The SJ-SC RWF Source Control team routinely contacts the Water District if overall sanitary sewage copper concentrations appear to be rising unexpectedly.

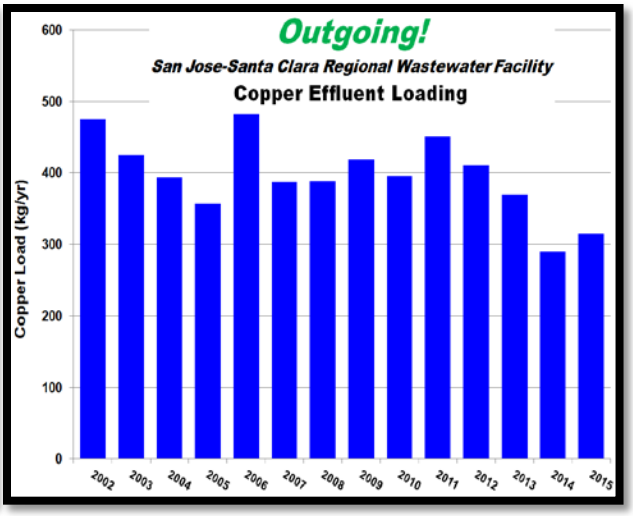
Copper Prevention Plan			
Source	**Message / Program**	**Implementation & Timeline**	**Evaluation**
Copper pipe corrosion	Educate plumbers, designers, and contractors for pools, spas, HVAC systems, and general plumbing to use BMPs to minimize copper pipe corrosion.	Maintain copper pipe factsheet. BAPPG to communicate copper pipe corrosion message to plumbing unions, contractors, building inspectors, and colleges.	BAPPG outreach training to 300 plumbers & apprentices in 2015. Disconnect between BMPs and accepted practice in discovered in 2013: recommended water-based flux raises worker health/safety concerns. BMPs under review.
Metal-bearing wastewater from industrial & commercial operations	Distribute BMPs to industrial metal finishers & printed circuit board manufacturers.	Distribution of Guidelines for Industrial Wastewater Reuse by City website and at Industrial User Academy events.	An Industrial User Academy event was held in 2015. Control guidelines for metals bearing wastes was distributed to 36 participants.
Swimming pools, spas, and fountains	Provide educational outreach to homeowners on pool and spa maintenance and plumbers' roles in reducing corrosion.	Track numbers of brochures distributed each year	Distributed173 brochures at events, in displays, and on My Watershed Watch website. Pool brochure was downloaded 24 times. Inspectors distributed 10 brochures in 2015.
Wastewater Facility effluent	Wastewater Facility influent and effluent copper.	Monitor copper in wastewater facility influent & effluent monthly.	Copper concentration in Facility effluent remained steady at 2.84 ug/l.

Copper BMPs maintained on San Jose web site:

- **Cooling Towers:** http://www.sanjoseca.gov/index.aspx?NID=2286
- **Roof Runoff Factsheet:** https://www.sanjoseca.gov/Archive/ViewFile/Item/1460
- **Draining Pools and Spas brochure:** http://www.sanjoseca.gov/ArchiveCenter/ViewFile/Item/1469
- **Pools:** http://www.sanjoseca.gov/index.aspx?nid=1629
- **Car Washing brochure:** http://www.sanjoseca.gov/ArchiveCenter/ViewFile/Item/1462

The Bottom Line: Like mercury, concentrations of copper in effluent have been dropping for years. The facility removes 98 percent of all copper from wastewater and removal efficiency seems to have improved. However, copper load arriving to the facility in sanitary sewage has not decreased, possibly a result of population increase along with increased economic activity.





Cyanide

Cyanide Control Program

Wastewater Facility Permit Provision VI.C.5.d. "Cyanide Action Plan," requires the Facility to implement a cyanide control program. The following provisions have been incorporated in the Cyanide Pollution Prevention Plan below:

Cyanide Action Plan
1. Review Potential Cyanide Sources.
2. Implement Cyanide Control Program. The Discharger shall continue to implement its program to minimize cyanide discharges to the Facility consisting, at a minimum, of the following elements:
a. Inspect each potential contributor to assess the need to include that contributing source in the control program.
b. Inspect contributing sources included in the control program annually. Inspection elements may be based on USEPA guidance, such as Industrial User Inspection and Sampling Manual for POTWs (EPA 831- B-94-01).
c. Develop and distribute educational materials to contributing sources and potential contributing sources regarding the need to prevent cyanide discharges.
d. Prepare an emergency monitoring and response plan to be implemented if a significant cyanide discharge occurs. … a "significant cyanide discharge" is occurring if the Plant's influent cyanide concentration exceeds 10 µg/L)

Cyanide Sources

The facility disinfection process is the main source of the small concentration of cyanide that is discharged. The cyanide concentration increases from zero to about 0.9 ug/L as a byproduct from the Facility's disinfection process. Many other wastewater treatment plants have also identified very small concentrations of cyanide produced as a disinfection byproduct.

Cyanide is used in industrial electroplating operations and this is the only potentially significant source in the service area.

Cyanide Estimated Loading

Cyanide influent concentration levels remain at or below quantified levels of detection (3 ppb) since November 2005. Detected, but not quantified, values average between 0.4 and 1.5 ug/l.

Cyanide Prevention Plan			
Source	**Message / Program**	**Implementation & Timeline**	**Evaluation**
Industrial wastewater discharge	Inspect each potential contributor at least semiannually.	Review business licenses, internet listings, and referrals to update list of potential cyanide contributors annually.	Inspected 98 facilities that potentially use cyanide at least semiannually.
	Surveillance monitoring of IUs with cyanide processes.	Surveillance and monitoring of industrial discharges and facility influent to detect cyanide.	Two industrial discharge violations identified, enforcement issued, and compliance issues resolved.
	Distribute educational materials to potential sources.	Cyanide fact sheet is posted on City website and distributed by inspectors as needed.	Fact sheet was distributed at the April 2015 IU Academy.
Wastewater Facility effluent	Monitor cyanide in wastewater facility effluent monthly.	Facility effluent below discharge permit limits: 5.7 ug/l AMEL, 14 ug/l MDEL.	During 2015, effluent concentrations were all below reporting limit of 3 ppb.

Watershed Protection

Hands-On Learning Enhances Annual Industrial User Academy

By Matt Lambert

We must all work together—regulators and industry alike—to protect our infrastructure, workers, public health, and environment. That was the message on April 15 when Watershed Protection staff hosted the 15th Annual Industrial User Academy at the Regional Wastewater Facility.

This Academy boasted the highest attendance to date, with 36 attendees representing 30 local businesses, gathered to discuss the Pretreatment Program and other issues. "This year's Academy was such a success!" said **Alleyne Long**, senior environmental inspector, who helped coordinate the event. Nearly all participants who took surveys at the end of the day rated their knowledge of the program as average or better, up from 64 percent at the beginning of the day. This increased knowledge is likely to result in improved compliance for these companies long after the event.

Demonstrating team skills, staff gave presentations and led breakout groups on a wide range of topics, including why the pretreatment program exists, understanding discharge permits, sampling program overview, how to avoid violations, and stormwater regulations. One attendee reported that these sessions served to "fill some gaps in my understanding," while another commented that attending the Academy "reinforced and clarified a lot of things" about the pretreatment program. ✷

Attendees participate in a hands-on group activity at the Industrial User Academy.

PESTICIDES

All Wastewater Facility effluent sample results for monitored pesticides were below detection limits using standard analytical methods. The Facility occasionally monitors effluent applying very low detection, non-standard, methods. With the notable exceptions of fipronil (used for flea control) and imidacloprid (used for fleas, termites, and insects generally), the SJ-SC RWF reliably removes small concentrations of pesticides that arrive in sanitary sewage.

Pesticide Sources. Pesticides can enter the Wastewater Facility influent due to indoor use, disposal of unused products via the sanitary system, and from clean up of application equipment. Most pesticide applications, however, occur outdoors. Therefore, contributions of pesticides to the Bay stem primarily from urban stormwater runoff and not from sanitary sewer sources.

The majority of pesticide pollution prevention efforts are implemented regionally and locally as required by the Municipal Regional Stormwater NPDES Permit (Stormwater Permit). An accounting of pesticide pollution prevention activities is included in Annual Stormwater Reports for all dischargers subject to the Stormwater Permit. Reports are available at: www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/stormwater

Pesticide Outreach. A majority of the outreach materials that inform residents, businesses, and municipal employees about pesticide safety and pesticide reduction were developed and distributed through City, County, and Bay-wide stormwater pollution prevention programs, like Bay Area Stormwater Management Agencies Association (BASMAA) and Santa Clara Valley Urban Runoff Pollution Prevention Program(SCVURPPP). SCVURPPP leads the County-wide pesticide outreach effort through the *Watershed Watch* and BASMAA's *Our Water Our World (OWOW)* campaigns. The Watershed Watch outreach effort includes print and radio ads in community newspapers and South Bay radio stations. Recent ad titles have included "Watch Out for Toxic Pesticides." In 2015, the Watershed Watch advertising campaign included 1,073 total spots on Integrated Pest Management (IPM) topics.

Pesticides Prevention Plan			
Source	**Message / Program**	**Implementation & Timeline**	**Evaluation**
Commercial			
Pesticides applied by businesses /commercial operations	Distribute to business audiences "Hiring a Company that Can Prevent Pest Problems" residential fact sheet.	Distribute fact sheet at events as appropriate.	Factsheet was available on OWOW & SCVURPPP Watershed Watch web sites. It is also available at 35 hardware stores & nurseries in Santa Clara Valley.
Residential			
Home use and disposal	Advertise means of safe pesticide disposal on the City's website.	Advertise HHW availability for disposal of waste pesticides. ▪ % of household reached and adequately served. ▪ Amount of pesticides collected.	Santa Clara County HHW Program served 3.2% of households in San José and 3.9% of households countywide with no wait and no refusals. A total of 286,900 pounds of poisons were collected.
Municipal			
Pesticides applied on City property	Training of all City employees; contractors invited to attend training. Follow City IPM Policy, SOPs, and BMPs. Use less-toxic pest controls.	Hold regular trainings on relevant IPM topics for all City employees that apply pesticides. Target: 100% of applicable employees receive training during a three year cycle. Continue and complete IPM Pilot in approximately 65 San José parks and municipal facilities. Staff will be engaged in training opportunities and lessons learned from the pilot.	104 San José muni staff trained on City IPM Policy, SOPs, and BMPs during Annual Worker Safety Training. 55 municipal staff received City Chemical Advisory Board training. Parks Maintenance District 3 Pilot Program continued study of reduction in pesticide use in 65 City neighborhood parks and municipal facilities Staff met regularly to discuss lessons learned. San José's Pest Management Committee met three times in 2015 to discuss updates to BMPs and SOPs.

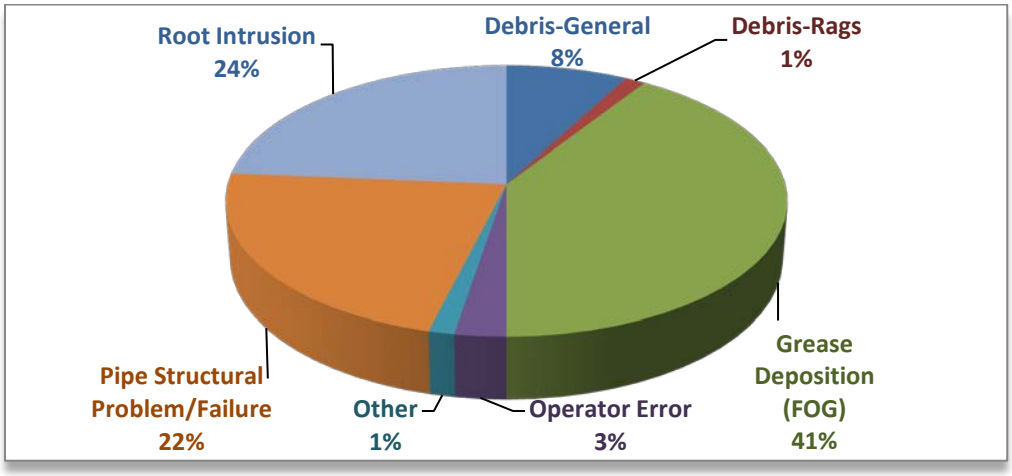
FOG

Fats, Oils, and Grease (FOG) are produced from food manufacturing as well as residential, commercial, and institutional food preparation. FOG clings to sewer pipes and causes clogs and sewer backups.

FOG Sources. Commercial and residential sectors are the primary sources of FOG entering the sanitary sewer collection system. Very small contributions of FOG are estimated to come from the industrial sector.

There are a total of 6181 Food Service Establishments (FSEs) in the SJ-SC RWF service area. The FSE Inspection Program prioritizes inspections based upon whether a site is grease producing, has adequate pretreatment, if the area is vulnerable to a sewer overflow, in addition to the site's own FOG violation history and last inspection date. This approach increases inspection frequencies at locations most likely to cause or contribute to overflows in San José.

Sanitary Sewer Overflows. The City of San José Department of Transportation (DOT) sewer crews maintain the collection system and clear sewer blockages. Since December 2004, the City has reported all overflows into a statewide electronic database in accordance with Water Board directives. Reports include location, time, volume, and cause of overflows, as well as any volume, that was not recovered during the cleanup. There were 76 sanitary sewer overflows reported during 2015 (down from 101 in 2014 and 126 in 2013) of which City sewer crews identified grease as a contributing cause for 31 (41%). If an overflow or significant blockage occurs in a residential area, and grease is determined to be the primary cause, City Sewer crews distribute door hangers to educate residents about the impacts of grease in the sewer and informing them of alternative disposal methods.



Causes for Overflows in the San José Collection System in 2015

Sewer System Management Plan. The FOG section of the City's SSMP describes seven elements of the City's FOG program:

a) An implementation plan and schedule for a public education outreach program that promotes proper disposal of FOG;
b) A plan and schedule for disposal of FOG generated within the sanitary sewer system service area. This may include a list of acceptable disposal facilities or additional facilities needed to adequately dispose of FOG generated within a sanitary sewer system service area;
c) The legal authority to prohibit discharges to the system and identify measures to prevent SSOs and blockages caused by FOG;
d) Requirements to install grease removal devices (such as traps or interceptors) design standards for the grease removal devices, maintenance requirements, BMP requirements, record keeping and reporting requirements;
e) Authority to inspect grease producing facilities, enforcement authorities, and whether the City has sufficient staff to inspect and enforce the FOG ordinance;
f) An identification of sewer system sections subject to FOG blockages and establish a cleaning maintenance schedule for each section; and
g) Development and implementation of source control measures, for all sources of FOG discharged to the sewer system, for each sewer system section identified in (f) above.

Food Service Establishment (FSE) Inspection Program. Plan checks are required for all FSEs being built or significantly remodeled in the wastewater tributary area and are performed as part of the building permit process. Plan checks require installation of appropriate type and size of grease control devices based on factors such as size of the restaurant, type of food served, and kitchen equipment. Depending on need, requirements range from a 40-pound grease trap to a several-thousand gallon grease interceptor. Applicants must certify that grease traps will be cleaned at least once per month and grease interceptors will be cleaned a minimum of once per quarter. In 2015, the City performed 242 FSE plan checks for facilities in the Wastewater Facility's Tributary Area, down from 360 in 2014. During 2016, sizing criteria for grease interceptors will be modified to incorporate current Uniform Plumbing Code criteria and to allow additional flexibility for commercial dishwashers. The City is planning to coordinate the changes with a consultant to ensure sizing criteria incorporate standard industry practices.

FSEs in San José are inspected for compliance with BMPs related to grease management and grease removal device maintenance. During FY 14-15, 653 FSEs were inspected in San José and 851 FSEs were inspected in Tributary jurisdictions of Cities of Cupertino, Milpitas, Santa Clara, Saratoga, Monte Sereno, Campbell, the Town of Los Gatos, and in unincorporated portions of Santa Clara County served by Burbank Sanitary District and County Sanitation District No. 2 - 3. FSEs in San José with Grease Control Devices (GCD) installed onsite also receive separate GCD inspections. In FY 14-15, 1,513 of the 2,287 GCDs were inspected.

A major component of the FSE Inspection Program is educating food service owners, managers, and workers on ordinance requirements and grease controlling BMPs. FOG-related educational materials have been developed to assist with education efforts. During FY 14-15, more than 2,899 educational pieces were distributed during FSE inspections to help FSE operators achieve and maintain compliance.

Enforcement actions are taken against any FSE that does not clean their grease control device at the minimum frequency and/or fails to keep records documenting the cleaning. Facilities found to have violations are re-inspected and enforcements are escalated until all violations are corrected. In FY 14-15, 717 of the 1,504 FSEs inspected had one or more violation (47%, down

from 52% in FY 13-14 but up from 33% in FY 12-13). A total of 893 discrete violations were documented (down from 939 in FY 13-14), and 223 Official Warning Notices, 19 Compliance Meetings (up from five in FY 13-14), and 24 Administrative Citations (up from 10 in FY 13-14) were issued.

Grease Investigations: Inspection staff from the FSE Inspection Program responds to reports of grease blockages in the sanitary sewer in San José and from collection system agencies throughout the Tributary area. These grease investigations involve inspecting FSEs near affected sewer lines for compliance with code requirements for grease control device installation and maintenance. Corrective actions are taken as needed to bring facilities into compliance and to minimize grease discharges to the collection system. During FY 14-15, the City performed 19 grease investigations involving 54 facilities, with 148 inspections conducted in connection with these investigations. 51 violations were documented, 14 Official Warning Notices were issued, and two Administrative Citations were issued. Education is also an important component of grease investigations. During FY 14-15, 161 FOG-related educational materials were distributed in connection with grease investigations.

FOG Art. Project manager Mary Rubin from the San Jose Office of Cultural Affairs contracted with local artists, Claire Napawan and Brett Snyder to developed pilot artwork about proper management of FOG in residential areas. The FOG art project is described on the City web page: https://www.sanjoseca.gov/index.aspx?NID=1656

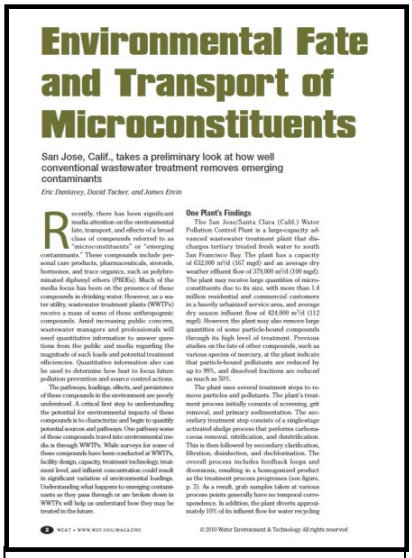
Three components to FOG Art: Bold graphics on City maintenance trucks, colorful markings on manhole covers, and educational door hangars.

FOG			
Source	**Message / Program**	**Implementation & Timeline**	**Evaluation**
Commercial food preparation	*Implement FOG Food Service Facility inspections as required in SSMP.*	Target: Inspect 1,200 food facilities per year, and distribute educational materials as part of inspection. Percent of facilities with recorded violations.	In FY 14-15, 1513 food service facilities were inspected: 653 in San José & 851 in Tributary areas. 47% of facilities had violations with a total of 893 discrete violations. 223 warning notices and 24 administrative citations were issued, and 19 compliance meetings held.
	Distribute grease management information to inspected restaurants and FOG generators.	Educate food service owners/operators on FOG BMPs during inspections. Number of materials distributed.	2,899 FOG BMPs distributed to inspected facilities in FY 14-15. Updated City website with FOG related information. 161 ed. materials distributed.
	Investigate grease related overflows, blockages, and spills.	Inspect restaurants in response to reports of grease blockages or build-up of grease in sewer lines. Investigation results. Percent of blockages attributed to FOG.	Investigated 19 grease complaints, involving 54 facilities. 48 inspections conducted. 14 OWNs were issued, and 2 Administrative Citations issued. For 2015, there were 76 overflows. 31 were attributed to grease.
	Plan checks for new and remodel food service facilities to size grease removal devices.	Plan check sizing criteria may be updated based on staff recommendations with input from consultant.	242 plan checks were conducted for City and Tributary area food service facilities.
Residential			
Residential food preparation	Educate residents about preventing grease blockages through BAPPG Spanish radio ad campaign.	Participate in grease message delivery through BACWA and BAPPG. Track number of Bay Area residents reached.	Delivered pollution prevention messages in the 9-county San Francisco Bay Area through 60 weekly radio spots, 180 PSAs.
	Notify residents via door hangers when grease-related overflows occur in residential areas.	Door hangers and other BMP material distributed as overflow incidents occur. Number of educational materials distributed.	DOT distributed 161 door hangers and BMPs in areas where grease blockages occurred.
FOG Art		Implement FOG pilot art education campaign through 2016	FOG art now installed on maintenance trucks, manholes, and door hangers.

EMERGING CONTAMINANTS

In 2015, the City continued to engage in activities to increase public awareness regarding impact of emerging contaminants such as pharmaceuticals and other chemicals found in personal care products, cleaning products, and medications. In addition, the City participated in studies aimed at detecting and quantifying specific emerging contaminants in influent and effluent through the Regional Monitoring Program (RMP). These contaminants of emerging concern (CECs) have been identified as higher priority through the RMP's CEC prioritization process and framework.

Previous Studies of Emerging Contaminants at the Regional Wastewater Facility. A fate and transport study conducted in 2008 at the Regional Wastewater Facility (RWF) measured pharmaceuticals, personal care products, steroids and hormones, residual pesticides, and PBDE flame retardants in influent, effluent and biosolids. This study estimated removal efficiencies by concentration and mass loading and was presented at the 2009 WEFTEC conference, 2009 State of the Estuary Conference, 2010 American Chemical Society Conference, and published in the July 2010 issue of WE&T. Removal efficiencies indicated that most CECs are removed at greater than 90% through the advanced secondary and filtration treatment at the RWF. CECs that were not removed efficiently mainly consisted of pharmaceuticals, including Azithromycin, Carbamazepine, Triclocarban, Fluoxitine, Oflaxacin, Albuterol, Erythromycin-H2O, Lincomycin, and Thiabendazole. The herbicide, Simazine was also not removed via treatment. These results and ongoing monitoring by the RMP helped inform prioritization of future studies of CECs and P2 messaging.



Environmental Fate and Transport of Microconstituents

San Jose, Calif., takes a preliminary look at how well conventional wastewater treatment removes emerging contaminants

Eric Dunlavey, David Tucker, and James Ervin

Recently, there has been significant media attention on the environmental fate, transport, and effects of a broad class of compounds referred to as "microconstituents" or "emerging contaminants." These compounds include personal care products, pharmaceuticals, steroids, hormones, and trace organics, such as polybrominated diphenyl ethers (PBDEs). Much of the media focus has been on the presence of these compounds in drinking water. However, as a water utility, wastewater treatment plants (WWTPs) receive a mass of some of these anthropogenic compounds. Amid increasing public concern, wastewater managers and professionals will need quantitative information to answer questions from the public and media regarding the magnitude of such loads and potential treatment efficiencies. Quantitative information also can be used to determine how best to focus future pollution prevention and source control actions.

The pathways, loadings, effects, and persistence of these compounds in the environment are poorly understood. A critical first step to understanding the potential for environmental impacts of these compounds is to characterize and begin to quantify potential sources and pathways. One pathway some of these compounds travel into environmental media is through WWTPs. While surveys for some of these compounds have been conducted at WWTPs, facility design, capacity, treatment technology, treatment level, and influent concentration could result in significant variation of environmental loadings. Understanding what happens to emerging contaminants as they pass through or are broken down in WWTPs will help us understand how they may be treated in the future.

One Plant's Findings

The San Jose/Santa Clara (Calif.) Water Pollution Control Plant is a large-capacity advanced wastewater treatment plant that discharges tertiary treated fresh water to south San Francisco Bay. The plant has a capacity of 622,000 m³/d (167 mgd) and an average dry weather effluent flow of 379,000 m³/d (100 mgd). The plant may receive large quantities of microconstituents due to its size, with more than 1.4 million residential and commercial customers in a heavily urbanized service area, and average dry season influent flow of 424,000 m³/d (112 mgd). However, the plant may also remove large quantities of some particle-bound compounds through its high level of treatment. Previous studies on the fate of other compounds, such as various species of mercury, at the plant indicate that particle-bound pollutants are reduced by up to 98%, and dissolved fractions are reduced as much as 50%.

The plant uses several treatment steps to remove particles and pollutants. The plant's treatment process initially consists of screening, grit removal, and primary sedimentation. The secondary treatment step consists of a single-stage activated sludge process that performs carbonaceous removal, nitrification, and denitrification. This is then followed by secondary clarification, filtration, disinfection, and dechlorination. The overall process includes feedback loops and diversions, resulting in a homogenized product as the treatment process progresses (see figure, p. 2). As a result, grab samples taken at various process points generally have no temporal correspondence. In addition, the plant diverts approximately 10% of its influent flow for water recycling

July 2010 WE&T Publication on CEC Fate and Transport at the RWF by Dunlavey et al.

Table 3. Removal Efficiency and Mass Balance Estimate for Conservative Constituents

Constituent	RS (ng/L)	RS mass (kg/d)	Solids mass (kg/d)	FE (ng/L)	FE mass (kg/d)	% to solids	% reduced in FE
Simazine	8.5	0.004	0	13	0.005	0%	Increase
Azithromycin	851	0.36	0.07	414	0.16	20%	57%
Carbamezepine	323	0.14	0.011	304	0.12	8.1%	16%
Triclocarban	399	0.17	0.69	145	0.05	409%	68%
Fluoxitine	21.5	0.009	0.032	28	0.01	353%	Increase
Oflaxacin	305	0.13	0.33	109	0.04	254%	68%
Albuterol	14	0.006	0	9	0.003	0%	43%
Erythromycin-H2O	243	0.1	0.002	169	0.06	2.2%	38%
Lincomycin	19.4	0.008	0	15.3	0.006	0%	30%
Thiabendazole	37	0.016	0.006	70	0.026	37%	Increase

RS = influent.
FE = effluent.

Table showing removal rates for CECs showing little to no removal via treatment. Taken from July 2010 WE&T Publication, Dunlavey et al., Environmental Fate and Transport of Microconstituents.

Emerging Contaminant Investigations in 2015

In FY14-15, the SJ-SC RWF collaborated with the RMP to perform investigations of perfluorinated compounds, microplastics, fipronil plus it's degradates, and imidacloprid. Effluent samples were analyzed for these high priority CECs. These compounds were also measured in influent with the exception of microplastics and perfluorochemicals.

Perfluorinated Compounds. Results of an RMP and UC Berkeley study of perfluorochemicals in wastewater effluent were received in April 2015. This study measured these chemicals in effluent of eight facilities in the Bay Area, including the SJ-SC RWF. Perfluorinated compounds and their precursors were detected at low concentrations in RWF effluent. The facility's partial ability to remove these compounds is attributed to the filtration process and low solids concentrations in our effluent.

Eric Dunlavey collecting an effluent sample for perfluorinated compounds.

Microplastics. Results of a RMP Microplastics study were presented at the September 2015 State of the Estuary Conference. Eight Bay Area wastewater treatment plants, including the SJ-SC RWF were sampled. Microplastics were similarly measured at relatively low particle counts per volume of water compared to other Plants discharging to SF Bay. However, due to the high volume of treated effluent discharged, the estimated total number of particles discharged from each wastewater treatment plant tested exceeded 1 million particles per day, and the estimates for the SJ-SC RWF were the highest number of particles per day in the region. It is also interesting to note that although the estimated number of total microplastic particles coming from the RWF were the highest, the RWF was the only treatment plant that had microplastic fibers as 100% of its microplastic particles. Other plants had a mix of microbeads, plastic fragments, film, and foam. These results are very preliminary and based on a single sampling event. Nonetheless, preliminary estimates are sufficient to warrant further attention and study of this emerging issue.

Seive collecting a 2-hr grab sample for measuring microplastics in RWF final effluent.

Pesticides. The pesticides fipronil and imidacloprid were measured in influent and effluent as part of another RMP study in collaboration with Rolf Halden of Arizona State University. Eight Bay Area wastewater treatment facilities were again sampled. Fipronil and its degradates showed very little removal through wastewater treatment at the all facilities, including the SJ-SC RWF. Imidacloprid results were similar to those for fipronil with concentration actually nominally increasing from influent to effluent. This was only a single measurement at each facility and could be attributed

to time lag between influent and effluent due to the time needed for full treatment. However, these results at the RWF and other regional facilities indicate that imidacloprid is also not removed via conventional treatment making it a candidate for P2 messaging and future study.

Emerging Contaminant Investigations planned for 2016

Based on past studies conducted from 2008 – 2015 and increasing efforts from the RMP, the RWF plans to conduct or support a number of investigations focused on increasing our understanding of CECs in 2016. These planned studies include:

- Focused influent and effluent monitoring of pharmaceuticals that were identified in 2008 as having poor removal efficiency
- Participation in a Microplastic Strategy Workshop through the RMP to develop a sound plan and prioritization of efforts to understand sources, possible control measures, and environmental impacts of microplastics,
- Focused influent and effluent monitoring of microplastics as sampling and analytical techniques are refined through BACWA and RMP efforts.
- Additional monitoring of fipronil and imidacloprid with technical support from the RMP.

Emerging Contaminant Plan			
Source	**Message / Program**	**Implementation & Timeline**	**Evaluation**
Expired medications **Other pharmaceuticals**	*Do not flush unwanted medicine down the toilet or sink or put in trash.* Bring in unwanted medicine for proper disposal. Sponsor and support the collection of unwanted and expired pharmaceuticals.	Pursue partnership with retail pharmacy for collection of unwanted medicines. Track pounds of medications collected. Continue to collect pharmaceuticals at neighborhood cleanup events.	Collected 826.3 pounds of unwanted medicines at 23 Neighborhood Cleanup events. Collected approximately 900 pounds of unwanted medicines during the DEA National Prescription Take Bay Days in September 2015. 23 pharmaceutical drop boxes were established in Santa Clara County under SCVWD grant program.
	Support Santa Clara County HHW program. The City continues to provide ongoing residential outreach to promote HHW program.	City representatives chaired standing regional HHW coordination meetings in 2015, and will continue participation in 2016. 2016 outreach will focus on HHW program and promotion of San José's new HHW facility.	2014: The permanent County HHW facility was opened in San Jose. 2015: City of San Jose and other participating cities signed 3-year funding and cooperative agreements with the County to operate the HHW facility.
Investigation	Work with SFEI-RMP to continue emerging contaminant studies.	Plan for four future emerging contaminant studies in or after 2016.	2015: study results for perflurochemicals, microplastics, & pesticides were received.

Safe Medicine Disposal

The City continues to collect unused medications during Neighborhood Cleanups hosted by the City's Code Enforcement Department and collected 826.3 pounds of pharmaceuticals at 22 events. The program will continue in 2016.

The San José Police Department participated in the Drug Enforcement Agency National Prescription Take Back Days in September 2015 and collected approximately 900 pounds of unused medications.

Finally, City began work in June on a three-year grant from the Santa Clara Water District (SCVWD), in partnership with the CPSC and the County Department of Environmental Health's Household Hazardous Waste Program, to install 50 pharmaceutical take back boxes at pharmacies within Santa Clara County. The 23 current county drop-off locations are posted on the Santa Clara County website:
https://www.sccgov.org/sites/rwr/hhw/Documents/Drop%20off%20locations%20for%20meds.pdf

Santa Clara County
Drop-off Locations for Used, Unused, & Expired Medications:

West Valley Patrol Sub-Station, Cupertino: 1601 S. De Anza Blvd, Cupertino, CA 95014 (Cross street- Duckett Way) (408) 868-6600 **Operating hours:** Mon – Fri 8:00 am – 4:30 pm

Valley Health Center at Gilroy Pharmacy: Located in the front lobby near the security desk
7475 Camino Arroyo, Gilroy, CA 95020 (Cross street- 6th Street) **Operating hours:** Mon – Fri 8:00 am- 5:00 pm

Los Altos Police Department: 1 N. San Antonio Rd. Los Altos, CA, 94022 (Cross street-W. Edith Ave)
(650) 947-2770 **Operating hours**: Monday –Friday 8:00 am -5:00 pm

Valley Health Center at Milpitas Pharmacy, Milpitas : Located in the main lobby near the restrooms, 143 N. Main St. Milpitas, CA 95035 (Cross street-Weller Ln) **Operating hours**: Monday –Friday 8:00 am -5:00 pm

Mountain View Police Department: 1000 Villa Street, Mountain View, CA 94041

Palo Alto Police Department: 275 Forest Ave, Palo Alto, CA 94301

South County Sub-Station, San Martin: 80 W. Highland Avenue Bldg K, San Martin, CA 95046 (Cross street- Monterey Rd.) (408) 686-3650

Sunnyvale
Valley Health Center at Sunnyvale Located in the main lobby, across from security desk , 660 South Fair Oaks Avenue, Sunnyvale, CA 94086 (Cross street-Garland Ave) **Operating hours**: Mon- Thurs 8:30 am- 9:00 pm/ Fri 8:30 am- 5:00 pm, Sat 9:00 am- 1:00 pm

Sunnyvale Fire Stations: Sunnyvale residents only
Fire Station 1: 171 N. Matilda Ave, Sunnyvale, CA 94086
Fire Station 2: 795 E. Arques Ave, Sunnyvale, CA 94085
Fire Station 3: 910 Ticonderoga Dr, Sunnyvale, CA 94087
Fire Station 4: 996 S. Wolfe Rd, Sunnyvale, CA 94086
Fire Station 5: 1120 Innovation Ave, Sunnyvale, CA 94089
Fire Station 6: 1282 N. Lawrence Station Rd, Sunnyvale, CA 94089

Central Mental Health (Enborg Lane Pharmacy): Located on right-hand side of the Central Mental Health Bldg, across from receptionist, 2221 Enborg Lane, San Jose, CA 95128 (Cross street- Bascom Ave) **Operating hours**: Monday-Friday 8:00 am – 5:00 pm

Office of the Sheriff: 55 West Younger Avenue, San Jose, CA 95110 (Cross street- N. 1st Street)
(800) 211-2220/ (408) 808-4405 **Operating hours:** Open 24 hours a day, 7 days a week

Valley Health Center at Bascom Pharmacy: Located in the pharmacy, 750 S. Bascom Avenue, Ste # 120, San Jose, CA 95128 (Cross street- Renova Dr.) **Operating hours:** Mon – Fri 9:00 am- 7:00 pm

Valley Health Center at East Valley Pharmacy: Located near the pharmacy pick-up window
1993 McKee Rd. San Jose, CA 95116 (Cross street- Ludlow Way) **Operating hours:** Monday-Friday 8:30 am- 9:30 pm, Sat- Sun 8:30 am-5:00pm

Valley Health Center at Lenzen Pharmacy: Located near the pharmacy, 976 Lenzen Avenue, Ste 1400 San Jose, CA 95126 (Cross street-The Alameda) **Operating hours:** Monday 8:00 am-9:00 pm/ Tues- Friday 8:00 am-5:30 pm

Valley Health Center at Moorpark Pharmacy: Located near the pharmacy
2400 Moorpark Avenue, San Jose, CA 95128 (Cross street- Bascom Ave) **Operating hours**: Monday-Friday 9:00 am – 9:00 pm, Sat – Sun 9:00 am – 9:00 pm

Valley Health Center at Tully Pharmacy: Located in the main lobby, near the security guard desk, 500 Tully Rd. San Jose, CA 95111 (Cross street-Corde Terra Circle) **Operating hours**: Monday- Friday 8:30 am- 9:00 pm/ Sat 8:30 am-5:00 pm

Valley Specialty Center Outpatient Pharmacy: Located in the Valley Specialty Bldg, near the pharmacy, 751 S. Bascom Avenue, San Jose, CA 95128 (Cross Street- Renova Dr.) **Operating hours:** Mon- Sun 9:00 am-10:00 pm

City of Santa Clara Residents Only
City of Santa Clara Police Department: 601 El Camino Real, Santa Clara, CA 95050 (Cross street – Benton St.) (408) 615-4721 or (408) 615-4722

POLLUTION PREVENTION OUTREACH & SERVICES

In addition to implementing activities for specific pollutants of concern, the City participates in various strategies, activities and venues to educate and encourage general pollution prevention behavior.

Permanent County Household Hazardous Waste (HHW) Facility

On 9 June 2015 the City of San Jose signed a cooperative agreement with the County of Santa Clara to fund and manage the Countywide Household Hazardous Waste (HHW) Collection Program for a current term from July 2015 through 30 June 2018. The County established a Countywide AB939 HHW Fee of $2.60 per each ton of any waste disposed to landfill or incinerated within the County to fund HHW operations. This permanent facility has been providing service to residents since September 2014.

Hazardous Materials Technicians sorting waste at the Santa Clara County Household Hazardous Waste facility in San Jose. (LiPo Ching/Bay Area News Group)

Another view of the facility at 1608 Las Plumas, San Jose. (LiPo Ching/Bay Area News Group)

Santa Clara County residents may make appointments at www.HHW.org to drop off hazardous waste on Fridays and Saturdays in San Jose, and monthly in San Martin and Sunnyvale. Residents of Palo Alto, Mountain View, East Palo Alto, Los Altos, Los Altos Hills and Stanford may drop off hazardous waste from 9 to 11 a.m. Saturdays at 2501 Embarcadero Way, Palo Alto. Drop-off is free. Proof of residency is required. Accepted items include: paints, polishes, acids, batteries, poisons, pesticides, solvents, pool chemicals, iodine, perchlorates, propane, helium, small oxygen tanks, smoke detectors and more.

For more information on hazardous waste drop-off sites in Santa Clara County, residents can call 408-299-7300. Appointments for drop-offs are required.

Neighborhood Cleanup (NCU) Events

The City of San Jose hosted 22 Neighborhood Cleanup Events in 2015.

Neighborhood Cleanup events (NCUs) provide San José residents with a way to dispose of unwanted items. NCUs are held rain or shine in different neighborhoods throughout the year and occur every three years per neighborhood. The majority of collected materials are either recycled or reused. The City's Code Enforcement Division mails households a postcard which residents must bring to the NCU for entry. (https://www.sanjoseca.gov/index.aspx?NID=453)

NCUs are essentially a "big garbage day," from sunrise to afternoon. Residents are encouraged to dispose items like furniture, mattresses, tires, carpet, packing material and such. Hazardous materials are not accepted at NCU events; however, these events provide a venue for educating residents about the County-wide HHW program where appointment are made for disposal by calling (408) 299-7300 or visiting www.HHW.org.

Unwanted pharmaceuticals are normally collected at NCU events. A police officer is assigned from 0800 to 1230 hrs. The officer collects and transports all pharmaceuticals to police headquarters where material is booked and destroyed. The booking process records the types and quantities of pharmaceuticals. In 2015, 826.3 pounds of unwanted pharmaceuticals were collected and properly disposed.

22 Neighborhood Cleanup Events in 2015		
Date	Council District	Neighborhoods
Jan 24	2, 10	Walnut Blossom, The Woods, Oak Grove, Hayes, Trade Winds
Feb 7	3	North, South & East Campus, Market-Almaden Naglee Park
Feb 21	2	Gilder & La Colina
Mar 7	6	Fruitdale, Del Mar, Southwest-De Marietta, Palmar, Borello
Mar 21	4	Morrill, Old Piedmont, Berryessa, Knight Bridge, Sweigert
Apr 11	8	Cadwallader, Silverland, Fowler, Chaboya, Mirassou Vineyards
Apr 25	8	Yum Yum Tract, Centerwood, Norwood, Quimby, Hidden Glen
May 16	8	Stonegate East & West, Windmill Springs
May 30	9	Muir, Hammer, Branham-Jarvis-Kirk
Jun 13	9	Doerr/Steindorf, Cambrian Commty Dist #2, Joseph, Dry Creek
Jun 27	1	Cypress-Judro, Lynhaven, Eden, Cadillic East & West, David-Rosemary
Jul 11	5, 7, 8	Tropicana, Dorsa-Miller - Lanai-Cunningham & Overfelt
Jul 25	9, 10	Cypress-Judro, Lynhaven, Eden, Cadillic East & West, David-Rosemary
Aug 8	1	Joaquin Miller & Rainbow
Aug 22	2	Silverleaf, Calif Maison, Sunsprings & Los Paseos
Sep 12	3	Rosemary Gardens, Hyde Park, Jackson-Taylor Horace Mann, Hensley
Sep 26	4	Pinnacle, Upper Sierra, Noble & boulder
Oct 17	4, 5	Summerdale, Baton Rouge, Little Rock, La Pala South, Toyon
Oct 31	10	Mt. Springs, Creekside, Gold Creek, Calif Ridge, Orchard Creek, Ctry View Estates
Nov 14	1	Calabazas North & South, Brookvale, Chantel & Alderbrook
Nov 21	2, 10	Anderson, Miner, Del Robles, Blossom Hill Homes & Colony Green
Dec 5	7, 8	Alvin, Burdette, Edge Whaley, Meadow Fair Leyva, Stallion, Shadowspings

Two views of a Neighborhood Cleanup event in San Jose

Don Edwards San Francisco Bay National Wildlife Refuge Education Center

On 23 June 2015, the San Jose City Council approved a three-year $390,000 contract with the San Francisco Bay Wildlife Society (SFBWS), the fiscal agent for the Don Edwards Refuge. Under this contract, Don Edwards Refuge personnel will provide public education about water quality, pollution prevention, and protection of water dependent ecosystems The agreement expands and continues the Refuge's "Living Wetlands" education and outreach program which provides weekend interpretive events for general public, classroom presentations, and field trip opportunities for 5th -12th grade schools, colleges, and universities. Eight different types of events are provided: education and outreach, public interpretive programs, teacher orientations, field trips, in-class presentations, a week-long summer day camp, joint Facility/Refuge tours, and interpretive displays. All events are free to qualifying participants.

Living Wetlands participants learn about pathways of wastewater and stormwater, native and endangered species, water conservation habits, and recycled water. The purpose is to have participants make more informed and educated choices about water conservation and pollution prevention for the benefit of local watersheds and wetlands. In FY 14-15, 5,971 students and educators participated in 117 educational events and field trips. Residents and visitors can contact the Environmental Education Center (1751 Grand Blvd. Alviso, CA) at 408-262-5513. Upcoming events are announced on the website:
http://www.fws.gov/refuge/Don_Edwards_San_Francisco_Bay/Events.html

Students visit Don Edwards National Wildlife Refuge in Alviso. (Photo credit: San Francisco Bay Wildlife Society)

The Don Edwards Wildlife Refuge Education Center is located next to the SJ-SC RWF outfall. (Photo: San Francisco Bay Wildlife Society)

Youth Education. The City's Watershed Protection youth education program develops and delivers watershed and P2 messages and curricula aligned with state standards to youth and youth educators through teacher workshops and partnership activities with other agencies, organizations, and institutions. From April 1 through May 11, 2015, the Creeks Come to Class curriculum was taught to 37 High School Students from Independence High and one teacher. The students were part of a "Biologists in Classroom" (BIC) pilot project to teach them how to teach the Creeks Come to Class curriculum to grade 3-5 students (the target learners of the lessons). The curriculum was brought to 236 elementary students and 8 elementary teachers in 2015. Messages included: pollution prevention, the difference between sanitary and storm sewers, proper disposal of pharmaceuticals, pesticides, and mercury. The "It's Wet, It's Wild, It's Water!" curriculum was provided to teachers, and students received "Wastewater Pathways" and "How Trash Gets into Creeks" flyers. Posters were provided for teachers to display.

Go Green Initiative. The San José Go Green Schools Program fosters environmental stewardship in a parent and community driven process based on the Go Green Initiative. San José staff connects K-12 public and private schools with green resources and encourages them to Go Green. This could entail starting a school recycling or composting program, launching environmental education, buying green, or evaluating school environmental practices that impact student health. In FY 14-15, the program worked with 29 schools, and provided 1,041 recycling containers to schools.

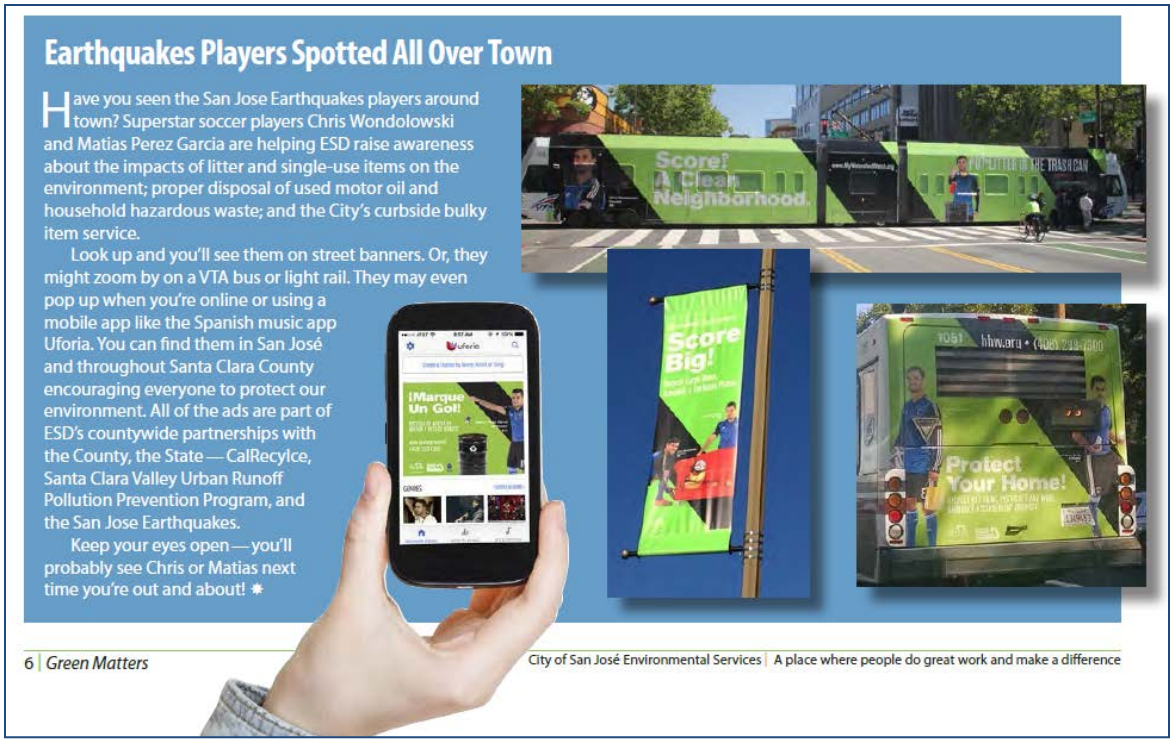
Almaden Quicksilver Mining Museum Partnership. In 2014-15, the City continued a partnership with the Almaden Quicksilver Mining Museum (AQMM) to communicate to visitors the importance of proper disposal of mercury-containing devices and distribute mercury disposal and HHW brochures. The museum is visited annually by approximately 918 3rd & 4th grade students from13 local schools in addition to the general public.

Guadalupe River Parks Conservancy Water Festival. The Water Festival is an educational festival designed to celebrate our local watershed. Classes rotate through a series of activities intended to increase the awareness and importance of water and proper stewardship of water as a "resource". The event was held on September 16, 2015 at the Guadalupe River Park and Gardens. At this event six classes of third grade students were engaged in an activity called "Pollution Soup" that teaches the sources and impacts of wastewater and stormwater pollution. Students received a "Wastewater Pathways" and "How Trash Gets Into Creeks" flyers. Posters were provided for teachers, including the "It's Wet, It's Wild, It's Water!" curriculum.

San Jose Earthquakes Campaign. HHW disposal was promoted through San Jose Earthquakes soccer public outreach campaign. This included: 135 street banners placed near Single-Family and Multi-Family Dwellings (2 months), online media advertisements (1 month on San Jose Mercury News website, Facebook, and Twitter), VTA full back bus advertisements on 37 buses (1 month), stadium messaging at four games (goal line sign, Public Service Announcement, Program advertisement, and LED stadium sign), and an advertisement on the San Jose Earthquakes' website.

Additional outreach was provided various soccer games in 2015. At the August 14th game, fans were provided HHW outreach pre-game at the City booth, a Public Service Announcement was made during the game, an HHW advertisement was in the game's program, and there was an LED stadium sign for fans to see.

General Pollution Prevention Outreach			
Topic/POC	**Activity**	**Description / Status**	**Evaluation**
P2	Living Wetlands	Contract with Don Edwards Refuge Alviso Environmental Education Center to provide outreach services.	This program reached 5971 students and adults in the Wastewater Facility Tributary area in FY14-15.
P2	Water Festival	In September, 2015, a Water Wizards festival for 3rd graders was hosted by Guadalupe River Parks Conservancy.	Roughly 120 students were exposed to pollution prevention messages.
Various	Neighborhood Cleanup (NCU) Events	Communicate and distribute P2 information while collecting HHW.	22 NCU events in 2015. Collected 826.3 pounds of pharmaceuticals.
Various	Facilitate implementation of school environmental programs	The San José Go Green Schools Program connects K-12 public and private schools with green resources and encourages them to initiate environmental practices. Creeks Come to Class curriculum was taught to high school seniors at Independence High School, who in turn taught the lessons to elementary school students and teachers as part of a "Biologists in the Classroom" (BIC) pilot project. The It's Wet, It's Wild, It's Water curriculum is also provided to teachers.	In 2015, the Go Green Schools program worked with 29 schools in San José, providing them with recycling supplies and "It's Wet, It's wild, It's Water!" materials. "Creeks Come to Class" program was taught to 37 high school students who taught wastewater and pollution prevention to 236 elementary school students and 8 teachers.
Household Hazardous Waste	Sports Event advertisement	Household Hazardous Waste outreach provided to San Jose Earthquakes fans in conjunction with soccer games. Continue San Jose Earthquakes Campaign during 2016 soccer season	50 people were provided pre-game HHW outreach Public Service Announcement reached 12,000 fans. HHW disposal was promoted: 135 street banners (2 months), online media advertisements (1 month), 37 full back bus advertisements (1 month).
P2	City of San Jose web page	Tips and advice for residential homeowners posted at: http://sanjoseca.gov/index.aspx?nid=1427	Web site garnered about 1,000 web visits per year.



Earthquakes campaign reminds residents to dispose unwanted items properly.
https://twitter.com/sjearthquakes/status/575083250613415936

City of San Jose web page raising homeowner awareness about P2 issues.
http://sanjoseca.gov/index.aspx?nid=1427

Regional Partnerships
The SJ-SC RWF participates with other organizations to coordinate pollution prevention research, regulatory development and outreach messaging.

Regional Monitoring Program http://www.sfei.org/rmp The RMP is a collaborative effort between the San Francisco Estuary Institute (www.sfei.org), the San Francisco Bay Regional Water Quality Control Board (Water Board), and the regulated discharger community. The Water Board formed the RMP in 1993 to conduct water quality measurements and investigations to better manage environmental programs in the Estuary. The City contributes financially to the RMP, is active on the steering committee, and provides in-kind staff support for specific RMP pollutant studies.

Our Water, Our World http://www.ourwaterourworld.org/ The Regional IPM Partnership, a joint project between BACWA and BASMAA, completed its fourteenth year of regional promotion of less-toxic pest control messages. The partnership encourages less-toxic methods of pest prevention and control by means of a point-of-sale program called Our Water, Our World (OWOW). In FY 14-15, the OWOW promotions continued to run in 35 hardware stores and nurseries in Santa Clara County.

Bay Area Pollution Prevention Group http://bacwa.org/committees/bay-area-pollution-prevention-group/ San José participates in the BAPPG. BAPPG member agencies work together to 1) Improve communication, 2) Coordinate regional pollution prevention projects, 3) Encourage and sponsor research and studies on topics related to pollution prevention, and 4) Develop regionally consistent public education messages and programs. Participation in this group leverages the City's efforts and resources through in-kind services and information and idea sharing, and strengthens our messaging to Bay area businesses and residents. BAPPG coordinates Bay Area-wide outreach activities including FOG radio and media advertisements and presentations at Dental Training Programs regarding mercury waste, to hospice and home care providers about proper pharmaceutical disposal, and to building code officials regarding disposal of demolition waste.

Stormwater Pollution Prevention Pollution Prevention in the context of this report, deals specifically with pollutants that flow through the sanitary sewer collection system and to the San Jose–Santa Clara Regional Wastewater Facility. The Municipal Regional Stormwater Permit also includes requirements associated with public information and outreach. Many of the same pollutants of concern addressed here are also of concern to regional stormwater pollution prevention efforts and are reported separately under the City of San Jose Stormwater Program or Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP). See: http://scvurppp-w2k.com/

Pollution Prevention

Every day millions of gallons of your wastewater flow from your homes to the San José-Santa Clara Regional Wastewater Facility. The Facility has no problem treating human waste, but other types of pollutants, like pesticides, wipes, and pharmaceuticals can cause problems.

Should you P2?

Treated water flows to the Bay!

Yes!