San José-Santa Clara Regional Wastewater Facility

2017

Pollution Prevention (P2) Annual Report

Reporting Period:

January 1 – December 31, 2017

San José-Santa Clara Regional Wastewater Facility

2017 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.

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San Jose IWM: Cecilia Rios, Alana Lowrie
Education & Outreach: Colter Cook, Genie Moore, Sandra Freitas, Carol Boland
Web Services & Ad Campaigns: Kate Ziemba, Carlos Velasquez

On the cover, clockwise from upper left:

1. San Jose Environmental Services Department staff at the outreach table during the San Jose Earthquakes Title Night game, promoting proper and responsible pharmaceutical waste disposal.
2. San Jose, Santa Clara Valley Water District, County, and California Product Stewardship Council medical drop off bin pilot program staff with County Supervisor Ken Yeager and pharmacist at a Wellness Pharmacy pilot bin for a May 2017 program close out photo event. Photo by Brian Byllesby.
3. Living Wetlands Outreach Program Coordinator Colter Cook teaching elementary students about Bay Habitats, Pollution Prevention, and Water Conservation at the Don Edwards Education Center in Alviso.
4. A VTA bus displaying the San Jose Sharks safe medicine disposal campaign ad, Be Cool. Be Green. Don't rush to flush. Meds in the bin, we all win.

Contents

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

REGULATORY REQUIREMENT

The Annual Pollutant Minimization Report (also known as the Pollution Prevention, or "P2" Report) for 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 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.

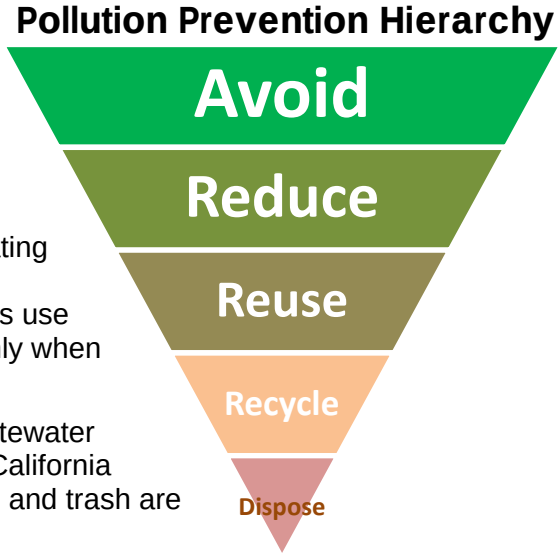
x. **Identification of specific tasks and timelines for future efforts.** Discharger shall explain how it intends to continue or change tasks to more effectively reduce the amount of pollutants flowing to the facility and into effluent.

This report summarizes pollution prevention activities during the period from January 1, 2017 to December 31, 2017.

INTRODUCTION

What is P2?

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



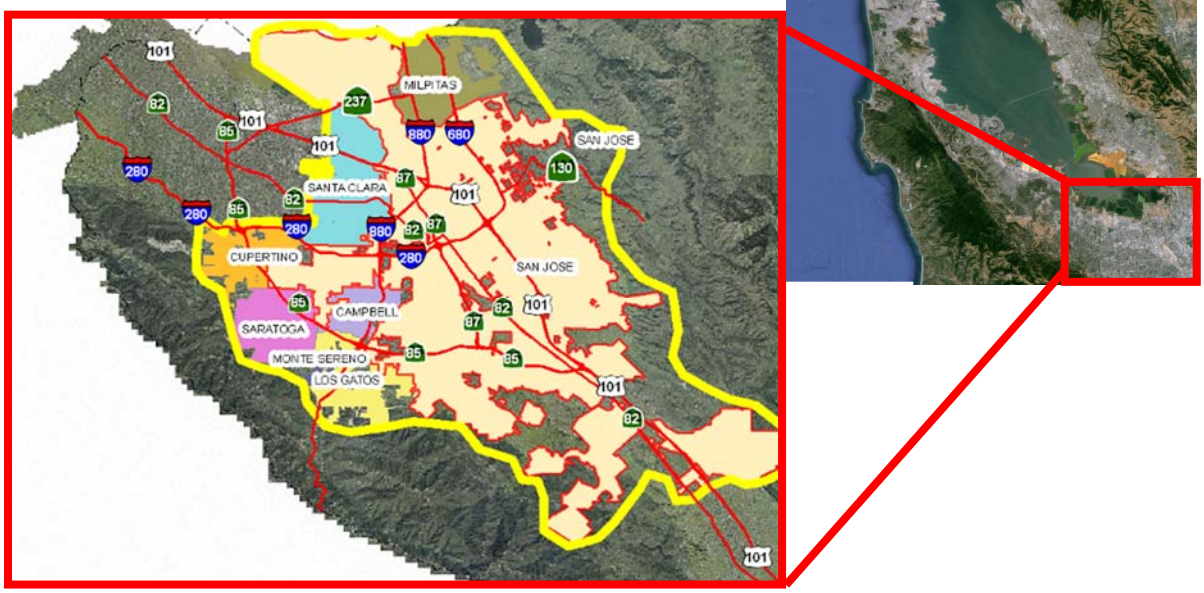
It is cheaper and easier to control pollution by not generating it in the first place. Avoid products that result in waste or pollution. If use of a product cannot be avoided, reduce its use and reuse as much as possible. Recycle and dispose only when necessary.

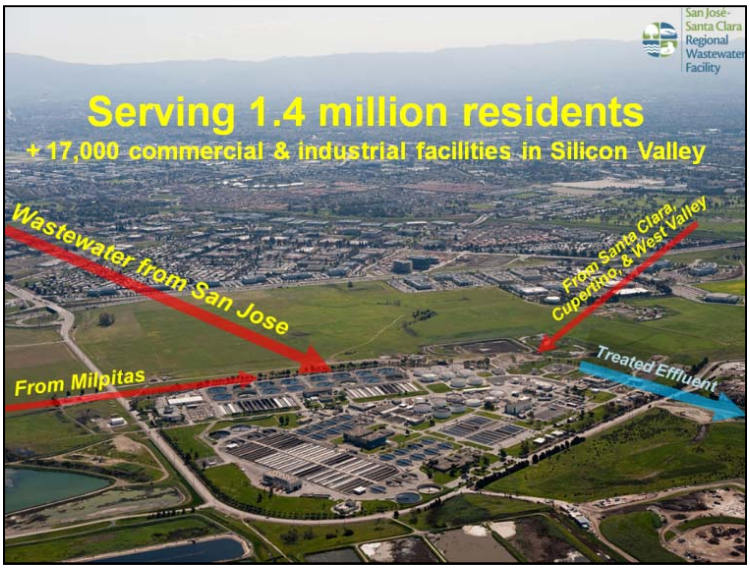
The state-of-the-art San Jose-Santa Clara Regional Wastewater Facility discharges the cleanest wastewater in Northern California but, costs of wastewater treatment increase as pollutants and trash are added to the sanitary sewer system.

SERVICE AREA DESCRIPTION

The Wastewater Facility's service area includes a 300-square mile area encompassing the territories of several tributary cities and county service areas (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.





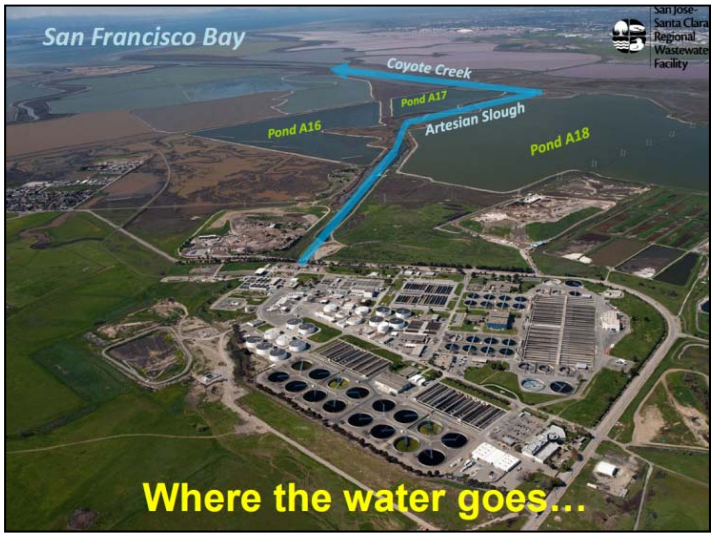
WASTEWATER FACILITY OVERVIEW

The San José-Santa Clara Regional Wastewater Facility is located at 700 Los Esteros Road, in San Jose. Roughly 100 million gallons per day of sewage flows in and receives 8 to 10 hours of advanced treatment. Some treated wastewater is recycled. The majority flows out into Artesian Slough and Lower Coyote Creek. Recent and ongoing 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 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) that reduced 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 222 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).



Reasons for Choosing Pollutants

A pollutant of concern is any toxic or undesirable substance that passes through the SJ-SC RWF or otherwise imposes an undesirable operational costs.

Tier 1: Any discharged substance that exceeds an NPDES permit limit is 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 "Emerging Contaminants: pollutants not listed by Basin Plan or as EPA priority pollutants, but are present in wastewater. These include plastics, pesticides, and pharmaceuticals 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 characterize wastewater arriving to the facility from industrial, commercial and residential sources. The last sector load study was completed in 2014.

When a specific source of pollutants is suspected, a Source Control Team, under the SJ-SC RWF Pretreatment Program, performs collection system surveillance monitoring to investigate sources of specific pollutants detected in facility influent or in trunklines. Sewer source investigations are expensive and labor intensive. In practice, these efforts have usually focused on metals, such as copper, nickel, and mercury. But, any persistent pollutant, detected at high enough concentration, could be tracked in this manner.

Source Control Team deploying a sampler at a sewage pump station.

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 summarized in 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 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. This team performs routine inspections of interceptors and grease traps at food service establishments to ensure the devices are installed and maintained. The team also investigates sewer blockages, whether caused by Fats, Oil, and Grease (FOG) or other material, and recommends corrective actions.

Special Studies. The San José-Santa Clara Regional Wastewater Facility serves the largest population and one of the most economically diverse service areas in the San Francisco Bay Area. 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 research and provides samples to projects coordinated by the San Francisco Estuary Institute and Regional Monitoring Program. The goal is to identify pollutant problems that may pass through the wastewater facility and into the Bay, before they result in ecological problems.

IDENTIFICATION OF TASKS TO REDUCE SOURCES OF POLLUTANTS

Monitoring. Sample results from influent and effluent monitoring and collection system sampling are 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 pollutant source and in-turn 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 - a BACWA committee), 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 them of practices that reduce pollutants at the source. 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 is 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 effective at keeping effluent pollutant levels low and unaffected by minor changes in influent concentrations. Influent monitoring focuses investigation on waste streams more likely to identify pollutants in need of pollution prevention measures.

Influent monitoring, performed at facility headworks provides long-term trends to show if a given pollutant concentration is increasing or decreasing. Over the past two decades, considerable reductions in all metals and tributyltin have been measured in influent, for example. Some of these reductions have been the result of industrial source control and product bans on tributyltin and copper sulfate root control agents.

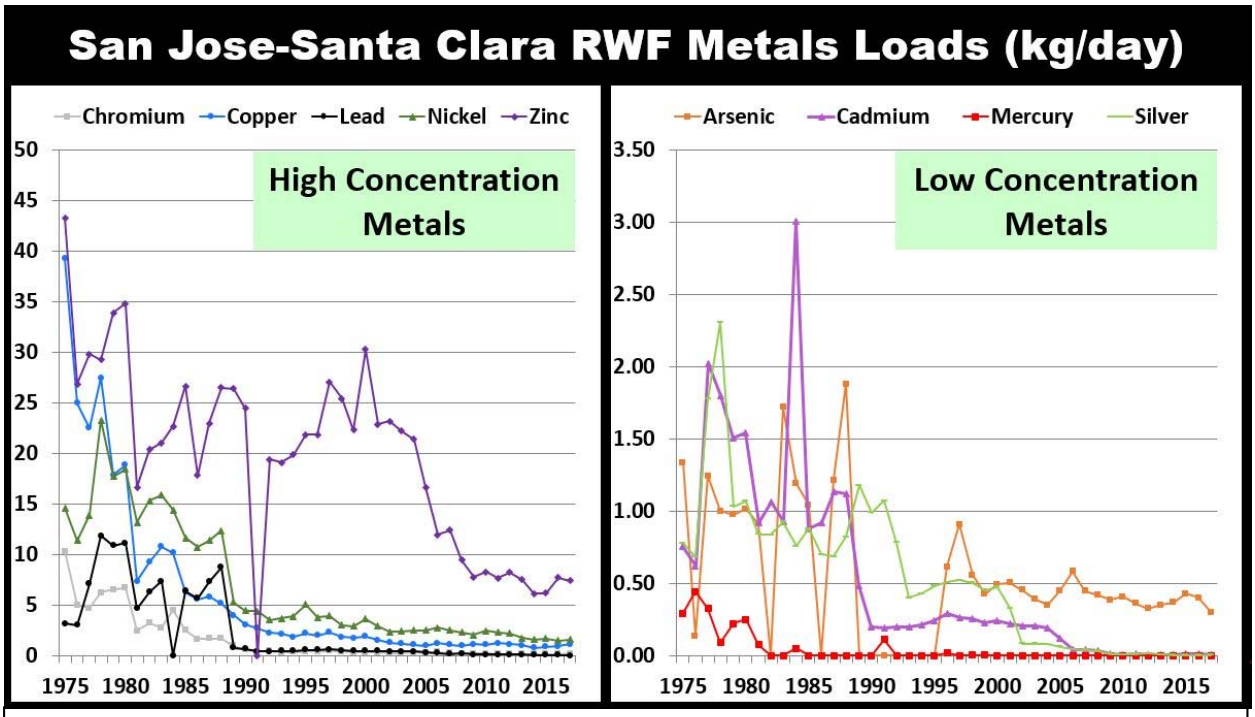
Most pollutants removed in primary, secondary/BNR, or filtration processes end up in Biosolids sludge, so this is the other logical place for monitoring. Metals concentrations in Biosolids have also dropped in recent decades, particularly for lead, silver, and zinc, as overall loads to the facility have decreased. However, Biosolids concentrations cannot be compared to short-term

influent and effluent results. The SJ-SC RWF employs a 3-week digestion process and 3-to-5-year dewatering process for Biosolids. Thus, Biosolids sampled on any given day actually represent materials from 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, indicates that people were messaged. However, simply counting the number of messages that were broadcast gives a sense of program size, but tells very little about the effectiveness of the program. Effective messaging and advertising aims at selling a vision or emotion, but is difficult to measure quantitatively. When possible, the City has begun tracking metrics like number of impressions or visits to web sites so the baseline traffic can be compared to changes in number of visitors following a large outreach effort.



All metals loads have dropped: A source control program in combination with wastewater treatment plant improvements resulted in dramatic reductions in metals loads discharged to the Bay since the 1970s.

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 first adopted in 2008 with PCBs added in 2011. The permit was reissued in 2017 through Regional Board Order No. R2-2017-0041. 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

Mercury is one of a small group of heavy elements that is only toxic in a biological setting. The SJ-SC RWF does a very good job removing this pollutant from wastewater down to part-per-trillion concentrations, but there is still room for reduction.

In 2017, 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**
2017 Maximum Results	0.137	0.00135	0.00135	0.00135

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 that 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. The most recent sector loading study, completed in 2014, determined the percentage of mercury loads discharged to the SJ-SC RWF collection systems as 49% from residential, 38% from dental practices, 12% from other commercial sources, and 1% from industrial sources.

Dental Mercury Amalgam Program. Wastewater compliance by dental practices is monitored through the SJ-SC RWF Dental Amalgam Program. Implementation of dental permitting and amalgam separator inspections began in 2009. Dental permits are reissued on a five-year cycle. There are currently 844 permitted dental practices in the program. This represents 99 percent participation rate by identified practices.

Dental Amalgam Program Permits Issued					
	2013	2014	2015	2016	2017
Total Issued	867	875	828	820	844
New permits	24	27	34	37	48

The Dental Amalgam Program issued 48 new permits to dentists in the Tributary area in 2017. The new Federal Dental Amalgam Rule was published in June 2017 and is being reviewed for consistency with the City's existing Dental Amalgam Program. The new rule went into effect July 14, 2017 for new dental dischargers, and will go into effect July 14, 2020 for existing dentists. The Dental Amalgam Program is working with dentists to help them comply with new requirements.

Permit holders are inspected for compliance at least once per five-year permit cycle. Requirements include installation of an amalgam separator, implementation of dental amalgam Best Management Practices (BMPs), and annual report submission. Certifications of amalgam separator installation and BMP implementation have been received from 93% of dental practices. In 2017, 100% of permitted dental practices submitted their 2016 annual reports, in part, due to increased enforcement against late reports. Dental Amalgam Program Annual Report Forms, BMPs, and amalgam separator certifications are available for download on the City of San Jose website: http://www.sanjoseca.gov/dental

Brian Fontes inspecting a dental amalgam separator.

Inspections in 2017 verified that amalgam separators were installed at over 99% of practices. The remaining 1% represents newly identified dental facilities. The program identified 253 violations by dental practices in 2017. The majority of these were late reports or amalgam separator maintenance infractions. All violations were enforced and resolved.

Permanent San Jose Household Hazardous Waste (HHW) facility. San Jose's permanent HHW facility began operations in September 2014. In June 2015, San Jose and several participating tributary area cities signed funding and participation agreements that commit to operating the facility to serve area residents and small businesses. The permanent facility now provides pollution prevention outreach and collections year-round and in conjunction with holidays and special events.

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. Mercury containing waste items, like fluorescent bulbs, thermostats, and thermometers are an important part of the collected material and outreach efforts performed by this facility. The facility also serves conditionally exempt, small quantity generators (small businesses).

The Bottom Line: The facility continues to remove 98 to 99 percent of mercury from wastewater. More importantly, 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! Most of the reduction is believed to be a result of changes in dental industry.

Mercury Prevention Plan

Program	Implementation & Timeline	Evaluation
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 end of 2017, a total of 844 permits were active. Issued new permits to 48 practices. 93% of practices certified for amalgam separators and are following Dental Amalgam BMPs. Completed 24 dental office inspections in 2017.
County of Santa Clara HHW. Department of Consumer and Environmental Protection Agency, 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 HHW hosted 8 temporary and 164 permanent hazardous waste drop-off events for households and conditionally exempt, small quantity generators. County program also served 392 small business drop-offs including local governments, Goodwill Industries, and Salvation Army. In FY 16-17, HHW program recycled: 150 pounds of elemental mercury, 131,973 pounds of fluorescent lights, and 183,449 pounds of household batteries.

Dental Practice BMPs maintained on San Jose web site:

- Dental Amalgam Program: http://www.sanjoseca.gov/dental

- BAPPG approved amalgam separators: http://www.sanjoseca.gov/ArchiveCenter/ViewFile/Item/1466

Source Control inspectors checking industry for wastewater discharge compliance.

Inspector Jack Dickinson checking the sample point at a metal finishing facility.

Inspector Chris Fivecoat checking pH at an industrial facility sample point.

PCBs

Order No. R2-2017-0041, the re-issued Mercury and PCBs Watershed Permit, was adopted by the Regional Board in December 2017. 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 and annually during compliance inspections. The permitting process requires IUs to disclose any Total Toxic Organics (TTOs) maintained onsite, including PCBs. The Pretreatment Program samples for TTOs semi-annually, including PCBs, if TTOs are known or suspected at an IU. The Pretreatment Program further requires any known or suspected IUs to either conduct analysis for TTOs, or certify that a plan is in place to manage TTOs to prevent discharge to the sanitary sewer.

Inspector Brian Fontes checking a flammable storage locker.

PCBs Pollution Prevention Plan – 2017 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).

Inspector Riley Moffatt checking hazardous waste barrels during an inspection.

COPPER & CYANIDE

Copper and cyanide are pollutants for which Basin Plan Amendments (BPAs) for the Bay have been established.

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.

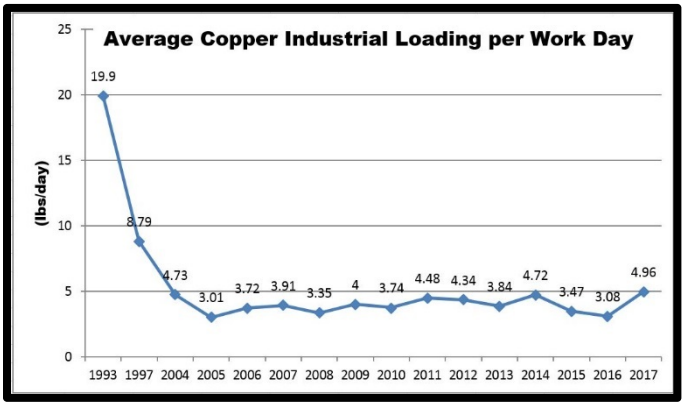
In 2008, a Cyanide BPA and implementation strategy for San Francisco Bay was approved. The BPA established a cyanide chronic SSO of 2.9 µg/L (4-day average) for San Francisco Bay and a dilution credit of 3:1 (dilution of 2X) for the SJ-SC Wastewater Facility. The Facility's maximum daily and average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

Copper Sources. The Sector Loading Study in 2014 confirmed that roughly 57% of copper in wastewater was originating from residential sectors. Commercial businesses collectively discharge about 33% of the entire copper load, and industry is responsible for only 10%.

Copper Industrial Loading. Until the 1990s, industry contributed a third of total copper load arriving at the SJ-SC RWF. Between 1993 and 2004, industrial copper fell to less than a quarter of its previous average daily load. 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. The overall industrial copper loading increased in 2017 to 4.96 lbs/day due to improvements in the economy. However, most of the increase is



due to two large copper violations at one of the largest metal finishers in the SJ-SC RWF Source Control Program.

Copper in source water. Most of the 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 does not pose a threat to receiving waters given the effectiveness of the SJ-SC RWF at copper removal. In the SJ-SC RWF service area, the main water wholesaler is the Santa Clara Valley Water District. The District operates 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.

The Bottom Line: SJ-SC RWF removes copper very well. Copper removal was enhanced in 1979, with addition of the filtration process that removes particulate copper, and enhanced again in 1998, with conversion of secondary process to Biological Nutrient Removal (BNR). Today, the facility removes 98 percent of wastewater copper.

Copper Prevention Plan

Message / Program	Implementation & Timeline	Evaluation
Copper Pipe. Educate plumbers, designers, and contractors for pools, spas, HVAC systems, and general plumbing on 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 15 students at Laney College in 2017. Disconnect between BMPs and accepted practice in discovered in 2013: BMPs remain under review.
Industrial Waste. 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 2017. Control guidelines for metals bearing wastes was distributed to 26 participants.
Pools & Fountains. Provide outreach to homeowners on pool and spa maintenance and plumbers' roles in reducing corrosion.	Track numbers of brochures distributed each year	Inspectors distributed 12 brochures in 2017.
SJ-SC RWF. Wastewater Facility influent and effluent copper.	Monitor copper in wastewater facility influent & effluent monthly.	Copper concentration in Facility effluent rose slightly to 3.16 ug/l.

Copper BMPs maintained on San Jose web site:

- **Cooling Towers:** http://www.sanjoseca.gov/ArchiveCenter/ViewFile/Item/1439
- **Roof Runoff Factsheet:** http://www.sanjoseca.gov/ArchiveCenter/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

Cyanide

Cyanide Control Program. Wastewater Facility Permit Provision VI.C.5.d. "Cyanide Action Plan," requires implementation of a cyanide control program:

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 have typically remained at or below quantified levels of detection (3 ppb) since November 2005. Detected, but not quantified, values average between 0.4 and 2.2 ug/l. In 2017, all cyanide influent concentrations were DNQ except for a quantified 4.8 ug/L value in September 2017.

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 77 facilities that potentially use cyanide at least semiannually.
	Surveillance and monitoring of IUs with cyanide processes.	Surveillance and monitoring of industrial discharges and facility influent to detect cyanide.	Three industrial discharge violations identified and enforcement issued.
	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 2017 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 2017, effluent concentrations were well below reporting limit of 3 ppb.

PESTICIDES

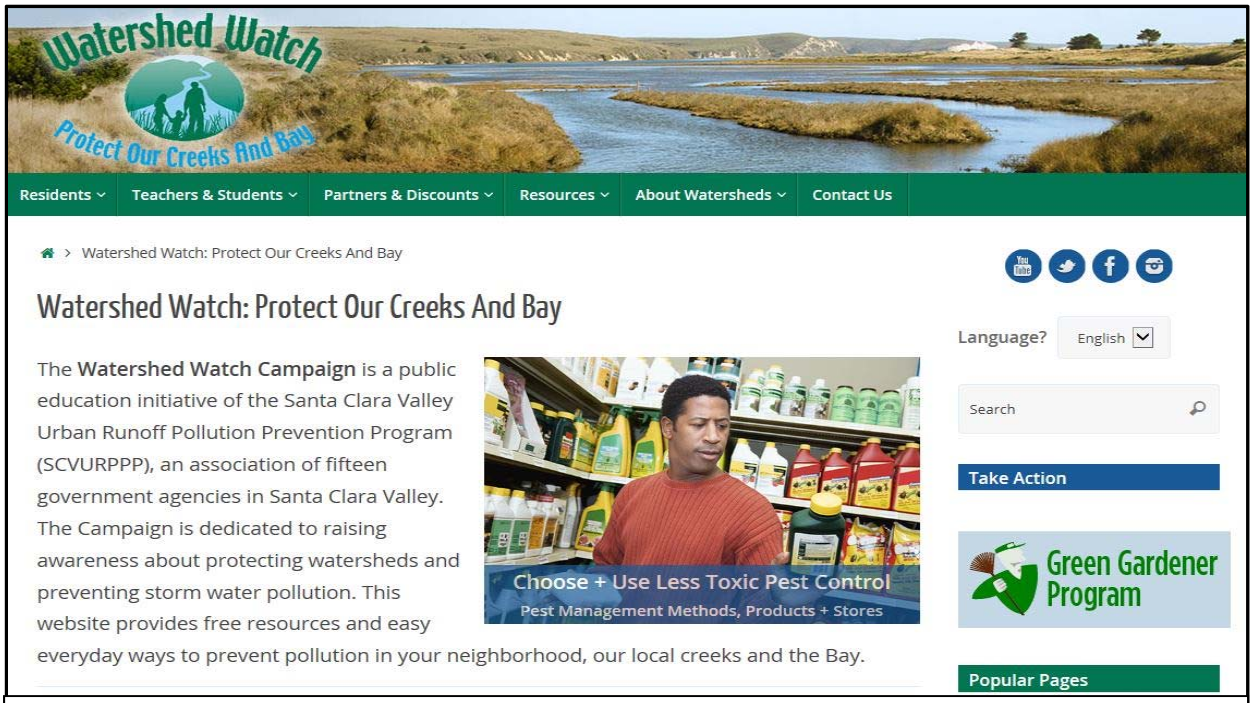
All Wastewater Facility effluent sample results for monitored pesticides were below detection limits using standard analytical methods. The Facility occasionally monitors effluent applying very low detection, non-standard, methods. With the notable exceptions of fipronil (used for flea control) and imidacloprid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

Pesticide Sources. Pesticides can enter Wastewater Facility influent due to indoor disposal of unused products and cleanup of application equipment via sinks and toilets. 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.

Most pesticide pollution prevention efforts are implemented under the Municipal Regional Stormwater NPDES Permit (Stormwater Permit). Annual Stormwater Reports are available at: http://www.scvurppp-w2k.com/ar_wp.shtml

Pesticide Outreach. Outreach materials inform residents, businesses, and municipal employees about pesticide safety and pesticide reduction. These were developed and distributed through City, County, and Bay-wide pollution prevention programs like Bay Area Pollution Prevention Group (BAPPG), 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 *Watershed Watch campaign* and the *Our Water Our World (OWOW)*.

In FY16-17, the Watershed Watch outreach effort included TV and radio ads, and online digital media. The advertising campaign for Integrated Pest Management (IPM) included hiring eco-friendly Pest Control Professionals and Santa Clara Valley Green Gardener. Reports on these efforts are included in the SCVURPPP annual report



Most pesticide outreach for Santa Clara County is coordinated through the Watershed Watch campaign: http://www.mywatershedwatch.org/

Pesticides Prevention Plan		
Message / Program	**Implementation & Timeline**	**Evaluation**
Commercial		
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 34 stores in Santa Clara Valley that participate in the OWOW program.
Residential – Home Use & Disposal		
Advertise means of safe pesticide disposal on the City's website.	Advertise HHW availability for disposal of waste pesticides. ▪ Provide disposal service. ▪ Collect pesticides and poisons.	Santa Clara County HHW Program served 28,679 residents in FY 16-17 with no wait and no refusals. 185,450 pounds of poisonous liquids and 116,320 pounds of poisonous solids were collected.
Municipal- Pesticides Applied on City Property		
Training of 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 additional IPM training of appropriate San Jose Staff for non-chemical strategies to test in approximately 65 San José parks and municipal facilities. Staff will be engaged in training opportunities and lessons learned from pilot testing new alternatives.	122 San José muni staff trained on City IPM Policy, SOPs, and BMPs during Annual Worker Safety Training, representing 100% coverage for applicable employees. Municipal staff received additional Chemical Advisory Board (CAB) training on proactive management and bio-insecticides to control scarab beetle larvae in turf, modes of action of herbicides and pesticides, and chemical and non-chemical alternatives to weed control. Staff removed invasive weeds and plants using cultural and mechanical methods, mulching, permeable grout and other non-chemical strategies including goats and sheep. Utilized barn own nest boxes for small rodent population control in 12 parks and 2 community gardens and piloted use of carbon monoxide smoke as ground squirrel and rodent control method.

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. Fats, oils, and grease (FOG) -laden wastewater is discharged from a variety of residential, commercial, industrial, and institutional sources throughout the San José/Santa Clara Regional Wastewater Facility (RWF) service area. FOG source control efforts have been implemented in the commercial, industrial, and institutional sectors to capture and divert much of the FOG away from the collection system and the RWF. FOG is a pollutant of concern due to its impact on the sanitary sewer collection system.

General Waste Discharge Requirements. In 2006, the State Water Resources Control Board (SWRCB) issued Order No. 2006-003-DWQ: Statewide General Waste Discharge Requirements for Sanitary Sewer Systems (GWDR), applicable to all California collection systems (with more than one mile of sewer), including the City of San José and the collection systems owned and operated by its neighboring tributary agencies. The GWDR prohibited Sanitary Sewer Overflows (SSOs), detailed SSO reporting requirements, and reiterated the requirement to develop and implement a Sewer System Management Plan (SSMP) that included provisions for FOG control. The GWDR does not specify what the FOG control program must include nor how it is to be implemented. In fact, the GWDR may not require a FOG control program at all if it can be adequately demonstrated that FOG is not a problem for an individual collection system. This is not the case in San Jose's collection system. Instead, the GWDR allows flexibility for collection system agencies to build and implement an effective FOG Control Program that addresses the specific needs of their collection system.

Sewer System Management Plan. The FOG section of the City's SSMP describes seven elements of the City's FOG program (as required by the GWDR):

SSMP Required FOG Program Elements
a) *An implementation plan and schedule for a public education outreach program that promotes proper disposal of FOG;*
b) *A plan and schedule for the 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.*

FOG Impacts on the RWF

In late 2016 the City hired the EEC Environmental (EEC) consulting firm to assess the impact of FOG on the RWF. The study found that the greater impact of FOG-laden wastewater discharges is likely in the collection system in terms of sewer line maintenance burden and the frequency of FOG related blockages and SSOs, and less so on the RWF itself. Over the past 13 years, there has been a general downward trend in the volume of FOG at the RWF. A 23% decrease was realized between 2003 and 2006, which tapered off to a 2% decrease between 2006 and 2015. Minimal RWF resources are needed for capturing, collecting, transporting and disposing of the FOG that does make it to the RWF. The primary impact of FOG at the RWF appears to be the cost associated with transport and landfill disposal of the collected FOG waste. Annual FOG waste transport and disposal costs for 2015 totaled an estimated $40,500.

Based on the consultant's investigation and discussions with RWF personnel, if the amount of FOG discharged to the RWF were to significantly increase, it would not stress the RWF's ability to treat FOG, nor impact RWF processes, nor would it cause the RWF to be in danger of being out of compliance with its NPDES-mandated discharge limits. FOG does not appear to be an issue of concern at the RWF now, and likely would not be in the future even if FOG volumes at the RWF were to significantly increase.

Changes to Commercial FOG Control Program

Following an audit by the EPA of San Jose's SSMP in 2010, San José began to investigate new methods to further reduce SSOs. Strategies explored and ultimately implemented included enhanced sanitary sewer maintenance programs, rehabilitation and/or replacement of problematic sewer segments, a multi-year effort to perform video inspections of all sewer lines, greater communication and collaboration between City departments tasked with SSMP implementation, and shifting away from violation-based prioritization of food service establishment (FSE) Inspections.

In FY 12-13 San José revamped its commercial FOG control program to a collection system risk-based approach. This approach prioritized facilities for inspection based on their potential to generate FOG, and the condition of the sewer lines. Sanitary sewer segments with a history of grease-related problems, as well as segments that experienced blockages or overflows, are rated as higher priority, and facilities that discharge into those segments are inspected more frequently. This methodology, in combination with San Jose's enhanced sewer repair, maintenance, and inspection efforts, resulted in significant SSO reductions. These changes were based and reliant on multiple years of sanitary sewer line maintenance and cleaning data, which is used to identify high priority areas in San José for FSE inspection.

San Jose did not change the violation-based prioritization for FSEs in the tributary agencies' service areas. This meant that San José had to manage two separate FOG Control Inspection programs. San José was also challenged in ensuring compliance in the tributary agencies' service areas due to limited enforcement authority (i.e.: inability to issue citations/fines).

The EEC study did not find a significant correlation between the implementation of the Commercial FOG Control program (which began in FY 06-07 in San José, FY 08-09 in most of the tributary areas, and RWF-wide in FY 09-10) and FOG volumes encountered at the RWF. The EEC study also did not find FOG to be an issue of concern at the RWF.

Based on this information, San José proposed that the commercial FOG control inspections and grease control device sizing plan check review no longer be funded by treatment plant operating

funds. The Treatment Plant Advisory Committee (TPAC) approved the proposal in May 2017, and no longer funded FOG Control efforts as of July 1, 2017. San José shifted FOG Control inspections to a different Fund starting in the new fiscal year as well. TPAC directed San José to develop contracts for continued FOG Control inspection and plan check services for the first six months of FY 17-18 to assist the Tributary Agencies in the transition. Santa Clara was the only agency to enter into contract for FOG Control services with San José.

San José staff worked with each Agency's staff to make the transition as smooth as possible. San José provided office and field training, digital copies of all FOG outreach and educational materials, inspection and plan check data going back to the beginning of the FOG Control Inspection program in each agency, and hard copies of past inspections and plan checks.

Continued Assessment of FOG Control Methods

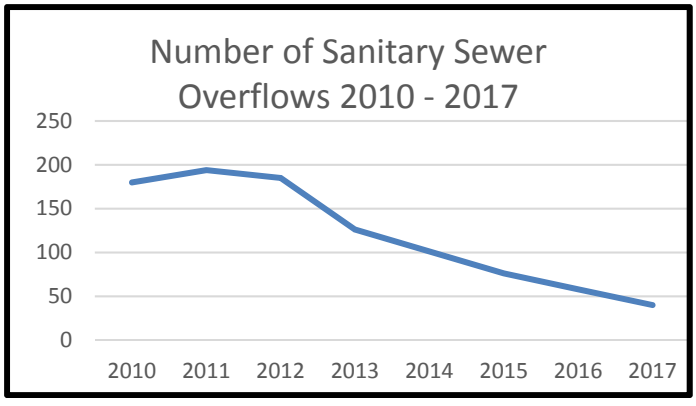
In late 2016 the City hired EEC to also review FOG regulations and assess FOG Control regulatory obligations. EEC's report confirmed that the GWDR is the primary regulation with which the City of San José FOG Control Program must comply. The City is subject to other regulations with ties to FOG control and SSO eliminations, including the RWF NPDES permit and Industrial Pretreatment Program (40 CFR 403). The NPDES permit recognized some overlap in requirements between the NPDES permit and the GWDR and acknowledges that the GWDR more clearly and specifically stipulates requirements for operation and maintenance, and for reporting and mitigating SSOs. Despite the overlap of requirements amongst these regulations, compliance with the GWDR will generally satisfy the requirements duplicated in the NPDES and Pretreatment programs.

In addition to reviewing FOG regulatory requirements, the City tasked EEC to identify and assess FOG control approaches and methods utilized by other jurisdictions within and outside California that go beyond traditional commercial FSE and grease control device inspections. EEC analyzed and provided summary information on five different FOG Control methodologies. The GWDR provides the flexibility for existing policies and practices to be modified by the City as needed to suit changing local conditions. Such changes should have a suitable technically-based justification and must continue to advance the reduction of FOG discharged to the sewer and associated SSOs. The City will use this information, in combination with collection system maintenance data and ongoing FOG Control Program data, and seek ways to refine its FOG control activities to meet regulatory requirements, reduce SSOs, and protect the community and environment.

Sewer System Management Plan Implementation

Sanitary Sewer Overflows

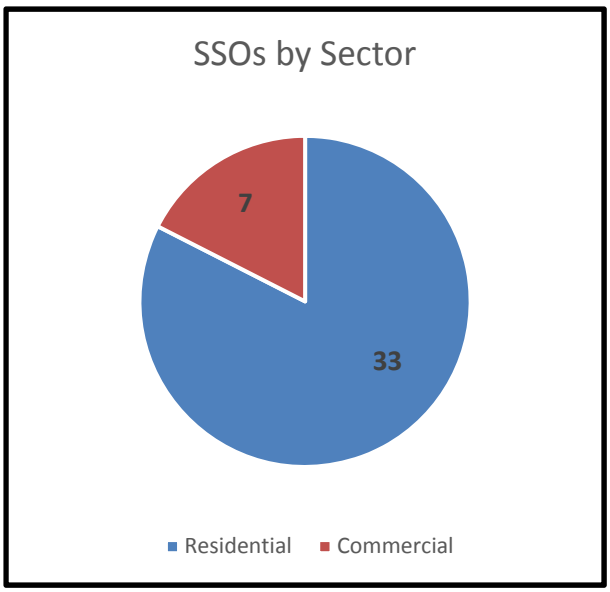
Within the City of San José, the City's Department of Transportation (DOT) sewer crews are responsible for maintaining the collection system and clearing sewer blockages. Some blockages in sewer lines may result in sanitary sewer overflows (overflows). Since December 2004, the City has been reporting all overflows into a

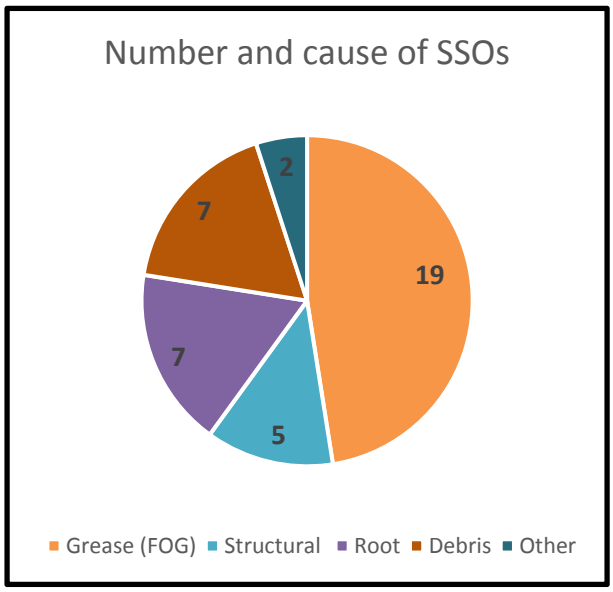


Number of Sanitary Sewer Overflows in San José

publicly accessible statewide electronic database in accordance to applicable Water Board directives. The reports include the location, time, volume, and cause of the overflows, as well as the volume, if any, that was not recovered during the cleanup. There were 40 sanitary sewer overflows reported during 2016, which is the sixth consecutive year of reduced SSOs.

Of the 40 SSOs, 33 were in Residential areas and 7 were in Commercial areas. City sewer crews identified 19 (47%) with grease as the contributing cause. 14 of the 33 Residential SSOs were caused by FOG, and 5 of the 7 Commercial SSOs were FOG-related. When an overflow or significant blockage occurs in a predominantly residential area, and grease is determined to be the primary cause, City Sewer crews distribute door hangers in the area, educating residents about the impacts of grease in the sewer and informing them of alternative disposal methods.





SSOs by Sector, and Causes for SSOs in the San José Collection System in 2017

Grease Control Device (GCD) Sizing and Plan Check Review

Plan checks are required by City and District codes for all FSEs being built or significantly remodeled in the RWF's tributary area and are performed as part of each jurisdiction's building permit process. Per direction from TPAC, San José staff ceased performing GCD sizing plan check reviews for FSEs in the tributary agencies' jurisdiction as of June 30, 2017. The City of Santa Clara contracted with San José to continue provide FOG Control Inspection and Plan Check services through December 31, 2017.

In late 2016 the City hired EEC to develop guidance documentation for sizing grease control devices based on the latest version of the Uniform Plumbing Code. The guidance includes identification of the fixtures and drains that are to connect to grease interceptors at food service establishments as well as assignment of the appropriate number of drainage fixture units (DFUs) for each fixture/drain, which factors into interceptor sizing. The guidance also includes discussion on the circumstances when a hydromechanical grease interceptor (HGI) can be a suitable alternative to a gravity grease interceptor (GGI). The purpose of this documentation was to modernize the criteria used for sizing GCDs while still complying with County Health requirements and providing adequate protection for the collection system. San José staff began

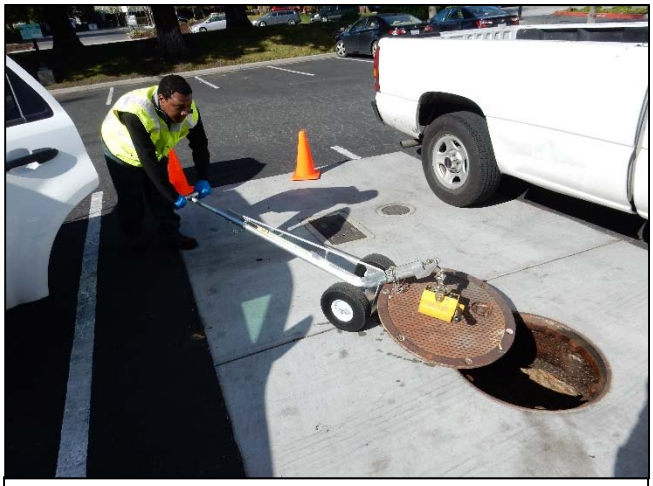
using this new guidance documents for GCD sizing in June 2017, and provided it to the RWF tributary agencies as part of the FOG Control Program transition.

In FY 16-17, the City performed 286 FSE plan checks for facilities in the Wastewater Facility's Tributary Area, 218 for facilities in San José and 68 for facilities in the Tributary Agencies' service area. San José staff ceased doing Plan Checks for FSEs in the Tributary Agencies' service area as of June 30, 2017. The City of Santa Clara contracted with San José to continue providing Plan Check review services through December 31, 2017. During this six-month period, San José staff performed six plan checks for facilities in Santa Clara.

San José transitioned plan check review responsibility to the City's Building Division in July 2017. The Building Division already performed all plumbing and other plan review and permitting duties, so this move streamlined the entire plan review process for FSEs. Transition involved training Building Division staff on GCD sizing criteria (using the guidance developed by EEC), and shadowing Environmental Engineering staff on Plan Check reviews. Building Division staff fully took over Plan Check duties as of August 31, 2017, and performed 31 grease control plan check reviews between August and December 2017.

Commercial FOG Control Inspections

The Commercial FSE Inspection Program in San José prioritizes FSE inspections based upon whether a site is grease producing, has adequate pretreatment, the likelihood of a sanitary sewer overflow (SSO) to occur in that area, and the potential for the site to generate grease. This approach increases inspection frequencies at locations most likely to cause or contribute to blockages and/or SSOs in the San José sanitary sewer collection system. For FSEs in the Tributary Agencies' service area, San José prioritized FSE inspections based upon FOG violation history and last inspection date.



Inspector Mahmoud Jillo lifts the cover off a restaurant grease interceptor during a February 2017 inspection.

FSEs are inspected by San José staff for compliance with applicable Municipal or Agency codes and BMPs related to grease management and grease removal device maintenance. In FY 16-17, 556 FSEs were inspected in San José (down from 780 FSEs in FY 15-16) and 870 FSEs were inspected in the Tributary jurisdictions of the Cities of Cupertino, Milpitas, Santa Clara, Saratoga, Monte Sereno, Campbell, the Town of Los Gatos, and in the unincorporated portions of Santa Clara County served by the Burbank Sanitary District and County Sanitation District No. 2 – 3 (up from 856 FSEs in FY 15-16). FSEs in San José with Grease Control Devices (GCD) installed onsite also receive separate GCD inspections. GCD inspections differ from FSE inspections in that they are wholly focused on the condition and functionality of the GCD. The inspector checks the structural integrity of the GCD, and takes a core sample to assess the FOG and solids loading in the device. In FY 16-17, 2,261 GCDs were inspected (up from 1,878 in FY 15-16).

Santa Clara contracted with San José to continue performing FOG Inspections as they transitioned the program out of San José. In the latter half of 2017 San Jose staff inspected 157 Santa Clara FSEs.

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 and translated into multiple languages to assist with education efforts. In FY 16-17, more than 2,114 educational pieces were distributed during FSE inspections to help FSE operators achieve and maintain compliance.

Food Service Establishment (FSE) Inspection and Plan Check					
	FY 12-13	FY13-14	FY14-15	FY15-16	FY16-17
FSE Inspections San Jose	822	636	653	780	556
FSE Inspections Tributary Areas	959	789	851	856	870
Plan Checks	303	360	242	307	286

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 16-17, 743 of the 1426 FSEs inspected had one or more violation (52%, the same as FY 15-16 and up from 47% in FY 14-15), with 62% of inspected San José facilities in violation and 45% of Tributary Agency facilities in violation. A total of 973 discrete violations were documented (down from 1,088 in FY 15-16 but up from 893 in FY 14-15), 481 at San Jose facilities and 492 at Tributary area facilities. A total of 355 Official Warning Notices (up from 278 in FY 15-16), 16 Compliance Meetings (down from 25 in FY 15-16 and 19 in FY 14-15), 23 Administrative Citations (up from 20 in FY 15-16 but down from 24 in FY 14-15), and 18 Agency Referrals were issued. Agency Referrals are for FSEs in the Tributary that have a violation history that exceeds the limits of San Jose's enforcement authority in the jurisdiction, so the case is referred to the Agency for enforcement.

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. In FY 16-17, the City performed 14 grease investigations (eight in San Jose, six in the Tributary area) involving 37 facilities, with 117 inspections conducted as part of these grease investigations. 44 violations were documented, and seven Official Warning Notices were issued. Education is also an important component of grease investigations, with 124 FOG-related educational materials distributed as part of the grease investigations.

FOG		
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.	Inspected 556 FSEs in San José and 870 FSEs in the Tributary area in FY 16-17. Inspected 2,261 grease control devices in San José in FY 16-17. From July thru December 2017: Inspected 157 Santa Clara FSEs and 4 FSEs that carried over from FY 16-17
Distribute grease management information to inspected restaurants and FOG generators.	Educate food service owners/operators on FOG BMPs during inspections.	2,114 educational pieces distributed during FSE inspections in FY 16-17
Inspect FSEs in response to DOT and tributary agency reports of grease blockages, or unusual build-up of grease in sewer lines	Continue to respond to and investigate grease related overflows, blockages, and spills, as needed.	Investigated 14 grease complaints, involving 37 facilities. 117 inspections conducted. 44 violations documented. 7 OWNs were issued. 124 educational materials distributed during investigations.
Requirement to install grease control devices (such as traps or interceptors) at Commercial, Industrial, and Institutional FSEs	Plan checks for new and remodeled food service facilities to size grease control devices	286 Plan Checks performed in FY 16-17: 218 for San Jose FSEs and 68 for FSEs in the Tributary area. Transitioned San Jose Plan Check Review to the Building Department in August 2017. Building staff performed 31 plan check reviews. Transitioned Santa Clara Plan Check review to Santa Clara as of December 31, 2017. Performed 6 plan check reviews for Santa Clara FSEs between July 1 and December 31, 2017.
Residential		
Educate residents about preventing grease blockages through BAPPG Spanish radio ad campaign.	Participate in grease message delivery: "Don't pour grease down the drain – collect and recycled used cooking oil" through BACWA and BAPPG.	Delivered pollution prevention messages in the 9-county Bay Area through 119 total KBRG radio spots.
Respond to grease related sewer overflow complaints (DOT).	Percent of reported blockages attributed to FOG. Notify residents via door hangers when grease-related overflows occur in residential areas.	40 overflows in 2017 with 33 in residential areas, 7 in Commercial areas. 19 had grease as a contributing factor, 14 in residential areas and 5 in commercial areas. DOT distributed door hangers in neighborhoods where residential grease blockages occurred. A total of 206 doorhangers were distributed in FY 16-17.
FOG Art	Continue FOG art education campaign in 2017.	FOG art door hangers and manhole cover marking continues. Public workshop reception was positive.

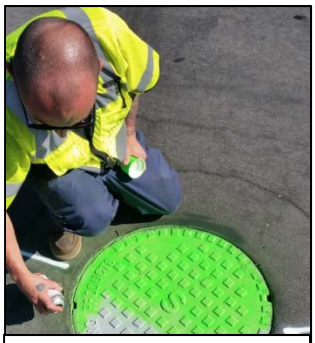
FOG Art: #FOGWASTE

#FOGWASTE is a public art installation and community outreach effort. The multi-year art-driven project targets communities with a three-phase approach that together reinforce the important work of DOT's sewer maintenance staff, the importance of the community in understanding of FOG (Fat Oil and Grease), the sanitary sewer infrastructure, and the potential actions that residents can take to achieve a positive impact on the sewer system, the environment, and their communities. The project elements work together to stimulate community curiosity, encourage participation in best household practices, and promote environmental stewardship:

#FOGWASTE
A public art initiative that aims to increase awareness of our city's sewer system, the people who maintain it, and its direct impact on the health of San José and the San Francisco Bay (Bay). Be on the lookout for these three electric green elements highlighting your infrastructure at work …

- Educational door-hangers.
- Manhole Cover Marking.
- Bold Graphics on City Maintenance Trucks

Doorhanger: Addressing the issue directly at the household, a bold graphic poster is distributed as a door hanger by DOT crews in the vicinity of FOG-related sewer blockages or overflows. The poster features simple and engaging icons to educate about various FOG wastes and common household products not to be put in sinks; the poster also brings awareness to features of the infrastructure system. Printed in the project's signature electric green color, the door hanger connects to the other art elements described below. Multi-lingual text provides explanation and vocabulary for a more informed community.



A member of DOT marks a manhole electric green.

Manhole Marker: Bringing attention to the infrastructure below the streets, manholes of recently serviced sewer lines were painted in the project's signature electric green color, creating awareness of this largely unnoticed infrastructure. Painting of the manholes coincides with the distribution of door hangers creating a connection from the front door to the system under the street. While painted manholes remain, this portion of the project has been discontinued.

Maintenance Truck Graphic: A bold vinyl graphic was applied to sewer maintenance trucks in 2016 and 2017 that were traveling to target neighborhoods. Trucks feature a design that calls out the 24/7 sewer maintenance service provided by the City. The vinyl graphic was rendered in the project's signature electric green color, reinforcing the connection between the truck, door hangers and manhole markers and the workforce that is constantly on the move to manage the system.

http://www.sanjoseca.gov/facilities/facility/details/publicartfogwastecity-wide-564

EMERGING CONTAMINANTS

The City continues 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 participates in studies aimed at detecting and quantifying specific emerging contaminants in influent and effluent through the Regional Monitoring Program (RMP).

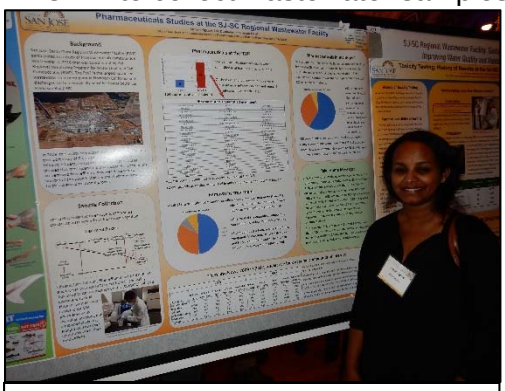
Emerging Contaminant Investigations in 2016 and 2017

In 2017, the SJ-SC RWF, through ongoing collaborations with the Regional Monitoring Program (RMP) performed investigations of emerging contaminants. Recent studies with the RMP focused on microplastics, and pharmaceuticals. Previous microplastics monitoring generated significant public attention, which led to a microplastics workshop in June 2016, hosted by the RMP and attended by various stakeholders, including San Jose. A follow-up investigation of microplastics was conducted in 2017 along with continuation of pharmaceutical fate and transport in the wastewater process that was initiated in 2016.

Microplastics. Results of a RMP Microplastics study that looked at microplastics from eight Bay Area wastewater treatment plants, including the SJ-SC RWF were presented at the September 2015 State of the Estuary Conference and generated much public attention. The study suggested that microplastics were discharged to the Bay at high particle counts, however questions about the quantitative accuracy of the analytical methods led to a follow-up methods workshop in 2016 and systematic re-sampling and analysis in 2017. The SJ-SC RWF was one of the initial sites used to validate the new sampling methodology, which used a continuous 24-hour flow-measured sample rather than the 2-hour sample used in the initial study. Samples will be analyzed by spectrophotometry rather than simple microscopy to accurately determine if a micro-particle is plastic or non-plastic. Results of this follow-up monitoring are expected in 2018.

Diana Lin from SFEI collects a 24-hour composite sample for microplastics analysis.

Pharmaceuticals. The RWF collaborated with the RMP and BACWA to collect wastewater samples for pharmaceutical analysis in 2016 and 2017. This effort was motivated by the need for effluent data on pharmaceuticals from Bay Area POTWs as decided at RMP workgroups and committees. Wastewater agencies utilized AXYS analytical services for the laboratory analysis and RMP staff provided technical and logistical assistance. The RWF collected composite samples from effluent, influent, RO concentrate, filter influent, and filter effluent over three events in 2016 and 2017. Results from this analysis were presented the 2017 State of the Estuary Conference in Oakland, CA and showed that most compounds are removed at 50% efficiency or more. Influent triclosan and triclocarban were 3.5 to 5 times lower than in 2009. These three events provided a valuable follow-up to the CEC fate and transport study the RWF conducted in 2008-2009,



Simret Yigzaw from San Jose ESD next to her poster on pharmaceuticals at the RWF presented at the 2017 State of the Estuary Conference in Oakland, CA

which included a number of pharmaceuticals that showed little to no mass removal via wastewater treatment.

Emerging Contaminant Investigations planned. Based on past studies conducted from 2008 – 2017 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 2018. These planned studies include:

- Additional analysis of pharmaceutical data in influent, effluent, and various process steps collected in 2016 and 2017.
- Participation in ongoing Microplastic Strategy Workshops through the RMP to develop a sound plan and prioritization of efforts to understand sources, possible control measures, and environmental impacts of microplastics,
- Additional monitoring of other CECs as identified and prioritized through the RMP Emerging Contaminant Workgroup.

Safe Medicine Disposal. The City participated in four types of activities that involve safe medicine disposal:

1. The City collects unused medications during Neighborhood Clean Up events (NCUs) hosted by the City's Code Enforcement Department. In 2017, 494 pounds of pharmaceuticals were collected at 23 events.
2. County-wide HHW Program: For FY 16-17, 8319 pounds of medications were collected at this location. City NCU events and participation in the County-wide HHW Program are described in greater detail in the Pollution Prevention Outreach and Services section that follows.
3. Police Departments of San Jose, Santa Clara, Las Gatos, and Milpitas regularly participate in DEA National Prescription Drug Take-Back Day events. Local police departments supervised pharmaceutical take back at 9 locations in Santa Clara County during events held on April 29th and October 28th in 2017: http://www.sjpd.org/inews/viewPressRelease.asp?ID=2521, and http://www.sjpd.org/inews/viewPressRelease.asp?ID=2623
4. In June 2015, the City began participating with the Santa Clara Water District (SCVWD), on a three-year grant, in partnership with the California Product Stewardship Council (CPSC) and the County Department of Environmental Health's Household Hazardous Waste Program with the City contributing funds for 10 bins in City of San Jose. Under the grant a total of 47 pharmaceutical take back boxes were installed at Santa Clara County pharmacies. City, County, Water District, and CPSC leaders held a photo-op event to general digital media to promote the pharmaceutical bins.

San Jose Environmental Services Director, Kerrie Romanow and Wastewater Compliance Supervisor, Eric Dunlavey with CPSC staff Chris Lester and Heidi Sanborn at one of the 47 pharmaceutical drop-off bins in Santa Clara County.
Photo by Bryan Byllesby

As planned, the pilot program transitioned to the pharmaceutical industry supported MED-Project in June 2017.

Information on safe medicine disposal can be found at the Santa Clara County Medical Waste Management Program page:
https://www.sccgov.org/sites/swp/programs/mw/Pages/mwm.aspx

Locations of current drop-off boxes are on the MED-Project website:
https://med-project.org/locations/santa-clara/kiosks

A Don't rush to flush drop off bin from the CPSC, Santa Clara County, Water District, and City of San Jose pilot program.
Photo by Bryan Byllesby

In June 2017, the pharmaceutical drop-off bins pictured on the left transitioned to, and were replaced by the MED-Project bins pictured on the right.

A MED-Project drop off bin, which are planned to be at 57 locations in 2018

Emerging Contaminant Plan		
Message / Program	**Implementation & Timeline**	**Evaluation**
Unwanted Medications *Do not flush unwanted medicine down the toilet or sink or put in trash.* Bring in unwanted medicine for proper disposal. Support the collection of unwanted and expired pharmaceuticals.	Track pounds of medications collected by HHW and City initiatives. Continue to collect pharmaceuticals at industry managed MED-Project bin collection program for the County. MED-Project stated goal is to have 57 bins by Summer 2018.	Collected 494 pounds of unwanted medicines at 22 Neighborhood Cleanup events. Local police departments participated in DEA National Prescription Drug Take-Back Day events on April 29th and October 28th, 2017. Pharmaceuticals were received at 9 service area locations during each event. 47 pharmaceutical drop boxes installed in Santa Clara County under SCVWD grant program (pilot project) in 2017. In June 2017, the pilot project transitioned to the industry-managed MED-Project. MED-Project has taken over all collection locations and added additional sites. MED-Project has not been able to collect weight collected information to date.
Santa Clara County HHW program. The City continues to provide ongoing residential outreach to promote HHW program.	City agreement to support County HHW facility continues through June 2018.	2015: City of San Jose and other participating cities signed 3-year funding and cooperative agreements with the County to operate the HHW facility. FY 16-17: County HHW facility served 28,679 residents and safely managed 2,655,871 pounds of hazardous waste: - 8,319 pounds of unwanted or expired medications collected. - 4,715 pounds of used sharps managed.
Investigation Work with SFEI-RMP to continue emerging contaminant studies.	Plan for future emerging contaminant studies on pharmaceuticals, microplastics, non-targeted analytes, & other prioritized CECs in or after 2018.	2017: Completed pharmaceutical monitoring in influent, effluent, and various process steps initiated in 2016, results presented at 2017 State of the Estuary Conference in Oakland, CA. Worked with RMP to secure more representative samples of microplastics in wastewater effluent.

POLLUTION PREVENTION OUTREACH & SERVICES

The City participates in various strategies and activities to educate and encourage general pollution prevention behavior.

Permanent San Jose Household HHW Facility.
This permanent facility has been providing service to residents since 2014. On 9 June 2015, the City of San Jose signed another cooperative agreement with the County of Santa Clara to continue to fund and manage the Countywide HHW 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.

Household Hazardous Waste Program
FOR SANTA CLARA COUNTY
SERVING RESIDENTS AND SMALL BUSINESSES

Santa Clara County residents may make appointments at www.HHW.org or call 408-299-7300 to drop off hazardous waste on Thursdays, Fridays, and Saturdays at 1608 Las Plumas Ave, San Jose, and monthly in San Martin and Sunnyvale. Residents may also drop off most hazardous wastes at approved retail take-back facilities, a list of which is on the County's HHW website. The City of Palo Alto has its own hazardous waste collection program 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.

Photo courtesy of Silicon Valley Toxics Coalition
http://svtc.org/blog/e-waste/hazardous_waste/

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

Neighborhood Cleanup (NCU) Events. City of San Jose hosted 22 NCUs in 2017. NCUs are "big garbage days," from sunrise to afternoon, rain or shine. The main purpose of this program is to curb illegal dumping. Residents are encouraged to dispose items like furniture, mattresses, tires, carpet, packing material and other items. The events have rotated on a three-year cycle throughout San Jose neighborhoods. Most collected materials are either recycled or reused. The larger NCUs are being replaced in 2018 by Beautification Cleanups scheduled by and for individual San Jose Districts. December 2017 marked the last month of the standard NCU event with each District now choosing how to allocate an individual $18,000 annual beautification budget (large item cleanup, graffiti removal, public plantings, etc.).

Code Enforcement Inspector & NCU Coordinator, Vince Tovar, drops a bag of unwanted medicine in the collection box under supervision of a San Jose police officer

Neighborhood Clean up Events in 2017

Month	Events Hosted	Households Serviced	Yards of Refuse Removed	Yards Recycled
Jan	1	4592	1530	1270
Feb	1	2979	1370	1191
Mar	2	6633	2980	2472
Apr	2	5555	3400	2821
May	2	10656	3220	2647
Jun	2	9602	3710	3078
Jul	2	7498	3300	2810
Aug	3	16786	5650	4688
Sep	2	6455	2660	2188
Oct	2	11643	4140	3435
Nov	2	7590	2620	2173
Dec	1	3044	1470	1220
Total	**22**	**93,033**	**36,050**	**29,993**

Hazardous materials are not accepted at NCU events; however, residents are educated about the County-wide HHW program where appointment are made for disposal by calling (408) 299-7300 or visiting www.HHW.org. Code Enforcement staff hand out a postcard with information on the County-wide HHW Program so that they can dispose of material properly.

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. In 2017, 494 pounds of pharmaceuticals were collected and properly disposed.

Items collected at NCUs in 2017	
Tires recycled	2,283
Refrigerators recycled	224
Mattresses removed	2,209
Computer monitors	312
TV's recycled	760
Pharmaceuticals (pounds)	494

Neighborhood Cleanup Events are advertised well in advance and staffed by roughly 50 to 60 personnel from City departments of Planning Building and Code Enforcement (PBCE) and Parks Recreation and Neighborhood Services (PRNS). City staff serve as Bin Monitors and traffic coordinators. Event coordinators staff a main tent. Unwanted medicines are collected at this location under supervision of a San Jose Police Officer.

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 non-profit outreach and education agent for the Don Edwards Refuge. Under this contract, Don Edwards Refuge personnel 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.

Student from Blackford Elementary school looks for cool birds on a former salt pond.

Living Wetlands participants learn about pathways of wastewater and stormwater, native and endangered species, water conservation habits, recycled water, and general pollution prevention. The purpose is to have participants make more informed and educated choices about pollution prevention and water conservation for the benefit of local watersheds and wetlands.

USFWS Ennis Chauhan explains watersheds, sanitary sewers, and storm sewers to students at Children's Discovery Museum.

Highlights from the FY 16-17 program included:

- A new pilot program for weekend interpretive events was developed and implemented for outfall tours on the refuge side of the SJ-SC RWF outfall channel
- Nine new schools from throughout the Facility service area participated in the Living Wetlands program as a result of Living Wetlands staff focused outreach and marketing efforts.
- A Mother's Day Celebration Special Event held at the Environmental Education Center in collaboration with the Watershed Watchers Program attracted 113 participants.

Alviso Boys and Girls Club visits the floating dock along Artesian Slough with Program Coordinator, Colter Cook. The SJ-SC RWF effluent enters the slough about 300 feet upstream of this location.

In FY 16-17, 24,255 students and educators participated in 123 educational events and field trips, representing more than a 5-fold increase in participation compared to FY 15-16. 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

Fiscal Year Summary

Living Wetlands Program Participants Summary - Fiscal Year 2016-2017

Program Type	Proposed	Accomplished	Number of Participants
Special Event	4	5	113
Weekend Interpretive	17	16	222
Field Trips	12	12	450
Combined Classroom (in-class and Integrated)	54	78	2,249
Outreach Events	5	9	21,074
Marsh-in Summer Camp	1	1	83
Alviso Boys and Girls Club	2	2	64
Totals	**95**	**123**	**24,255**

Other Education and Outreach.

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. In FY 16-17, the Creeks Come to Class curriculum was taught to roughly 379 grade school students and 13 teachers at Summerdale Elementary School. Messages included: pollution prevention, the difference between sanitary and storm sewers, proper disposal of pharmaceuticals, pesticides, and mercury. Teachers, and students received "Wastewater Pathways" and "How Trash Gets into Creeks" flyers. Posters were provided for teachers to display.

The Biologists in Classrooms (BIC) program trains high school students how to teach the Creeks Come to Class curriculum to elementary school learners. From March 27 to May 3, 2017, 37 high school students from Independence High School learned to teach watershed protection and pollution prevention subjects and subsequently taught them to 270 elementary learners, grades 3 through 5 from St John Vianney School and Summerdale Elementary School.

Christmas in the Park. The San Jose Environmental Services Department shared environmentally friendly messages at Christmas in the Park, one of the South Bay region's signature holiday event located at Cesar Chavez Plaza in downtown San Jose. As an event sponsor, San Jose's messages were showcased using displays, signage, sounds of the season announcements, and online presence throughout the month-long event to more than 500,000 visitors from across the Bay Area. Pollution prevention messaging at Christmas in the Park in 2017 was delivered via Sounds of the Season public announcements. The announcements informed attendees about proper disposal of wipes into the garbage instead of the toilet, and proper disposal of pharmaceuticals at designated collection locations, bins, or at HHW.

Sports campaigns through San Jose Sharks and San Jose Earthquakes partnerships

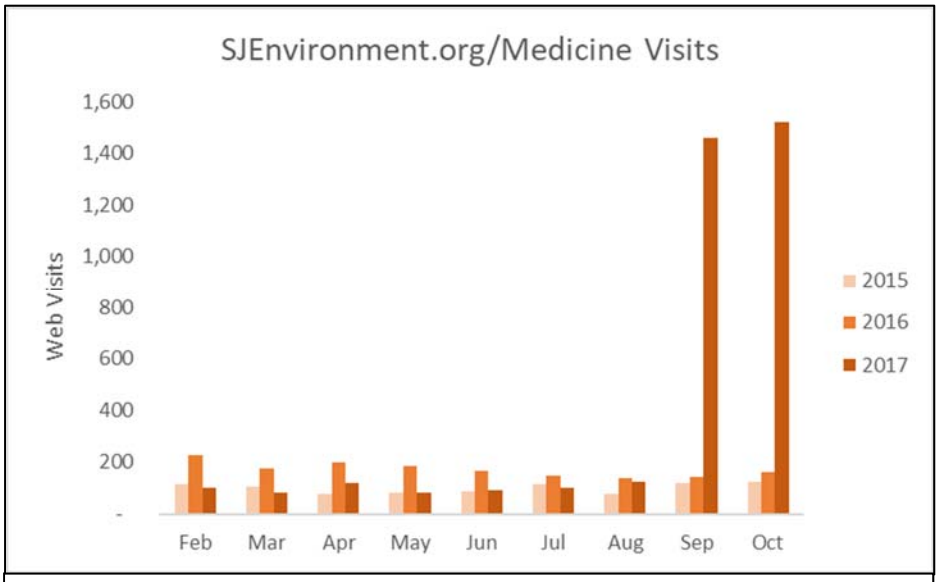
San Jose expanded its sports team outreach with San Jose Earthquakes (soccer) and San Jose Sharks (hockey) in the months of September and October. The P2 ads promoted safe medicine disposal through a new sports campaign: **Be cool. Be green. Don't rush to flush. Meds in the bin, we all win.** The sports campaign leveraged the slogan initiated by CPSC, Santa Clara County, City of San Jose, and Santa Clara Valley Water District from 2015-2017. Ads included LED ads at home games, web and mobile ads via Facebook/Instagram, Univision mobile ads, and Comcast digital static ads. Ads also ran on game-day radio during home and away games in September and October.

An effective P2 outreach campaign in partnership with professional sports teams in 2017 used multi-pronged in-game, web, and radio ads to promote safe medicine disposal

San Jose Earthquakes Campaign. HHW and safe medicine disposal was promoted through in-stadium and out-of-stadium public outreach via a new sports campaign effort: Be cool. Be green. Don't rush to flush. Meds in the bin, we all win. Messaging appeared at three San Jose Earthquakes home soccer events in September, in Matchday Magazine ads, and stadium LED signs, reaching an estimated 54,000 Earthquakes fans. Radio ads ran during three home games and two away games. A title night game on 9 September 2017 featured additional PSAs, LED signage, an outreach table, and a half-time trivia game with a P2 theme.

In-game LED ad during the Earthquakes title-night game on 9 September 2017.

San Jose Sharks Campaign. An estimated 104,000 Sharks hockey fans were exposed to stadium ads during 6 home games in October 2017. HHW and safe medicine disposal ads using the "Don't rush to flush" message were also posted on Sharks team websites, on 32 VTA buses, Sharks mobile ads, and game-day radio ads for home and away games.



A ten-fold increase in visitors to the website SJEnvironment.org/medicine was realized in September and October 2017 as a result of the sports campaign efforts.

Total combined impressions from all sports-campaign P2 efforts on radio, web, mobile, in-game, and in-person were 3,795,141.

Regional Partnerships.

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 RMP in 1993 to conduct water quality measurements and investigations 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 between BACWA and BASMAA was established in 2002 to promote less-toxic pest control. The partnership encourages less-toxic pest prevention and control methods by means of a point-of-sale Our Water, Our World (OWOW) promotional program. In FY 16-17, OWOW promotions ran in 34 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. BAPPG coordinates Bay Area-wide outreach including FOG radio and media advertisements, presentations at dental training events regarding mercury waste, to hospice and home care providers about proper pharmaceutical disposal, and to building code officials regarding disposal of demolition waste.

BAPPG submits a separate annual report that captures the regional collaborative's activities for the year. https://bacwa.org/wp-content/uploads/2018/01/BAPPG-Annual-Report-2017-Final.pdf

Stormwater Pollution Prevention Many pollutants 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/ The Municipal Regional Stormwater Permit also includes requirements associated with public information and outreach.

General Pollution Prevention Outreach

Program	Description / Status	Evaluation
Living Wetlands	Contract with Don Edwards Refuge Alviso Environmental Education Center to provide outreach services to the public and to schools. Current contract expires June 30, 2018.	24,255 students and adults were reached in the Wastewater Facility Tributary area in FY16-17, more than a 5-fold increase compared to the previous year.
Neighborhood Cleanup (NCU) Events	Communicate and distribute P2 information on HHW disposal while collecting non-hazardous waste and pharmaceuticals. NCU Events ended December 2017 and are replaced by City Council District-specific beautification events that can incorporate graffiti removal, new plantings, waste disposal and more.	22 NCU events in 2017. Collected 494 pounds of pharmaceuticals.
Facilitate implementation of school environmental programs	Creeks Come to Class (CCC) curriculum is taught to elementary school students to teach awareness about water and pollution prevention. Biologists in Classrooms (BIC), piloted in 2016, continued in 2017 and incorporated a field trip component. High school students are trained to teach CCC curriculum and teach elementary learners.	"Creeks Come to Class" program was taught to 379 elementary school students and 13 teachers. BIC program was taught to 37 high school "student teachers," who taught 270 elementary school student learners.

Christmas in the Park	A signature month-long holiday event for the South Bay located in downtown San Jose. Environmentally friendly messages were included in displays and pollution prevention messages were broadcast to attendees.	Sounds of the Season announcements broadcast during the month about proper disposal of wipes and medicine reached more than 500,000 visitors in 2017
Sports Event advertisements	New in 2017, a Be Cool. Be Green. Don't rush to flush campaign to promote safe pharmaceutical disposal featured at San Jose Earthquakes and San Jose Sharks games. Don't rush to flush safe pharmaceutical disposal message and Household Hazardous Waste outreach provided to San Jose Earthquakes fans in conjunction with soccer games. San Jose Sharks safe medicine disposal campaign advertised on 32 VTA buses. Continue San Jose Earthquakes and San Jose Sharks outreach campaigns.	**Combined impressions for both sports campaigns in 2017 were 3,795,141.** **San Jose Earthquakes.** ~54,000 fans received an ad in Matchday Magazine, saw LED ads and heard PSAs at three home games. Game-day radio ad, social media ad on Facebook and Instagram, Comcast digital ad, and Univision digital ad ran in September. Title Night game on 9/16/18 featured additional PSAs, outreach table, and halftime trivia game with P2 theme. ~1,500 visitors to the website SJEnvironment.org/medicine in September during the Quakes campaign, representing a 10-fold increase compared to typical months. **San Jose Sharks.** ~104,000 saw stadium ads at 6 home games in October 2017. Fans heard game-day radio PSAs in English during 11 October games. Sharks website and e-newsletter posted an ad. ~1,500 visitors to the website SJEnvironment.org/medicine in October during the Sharks campaign, representing a 10-fold increase compared to non-campaign months.
Other outreach	30-second Ad promoting safe medicine disposal using the "Don't Rush to Flush" campaign slogan ran at the Senter Road DMV location. Online pollution prevention general outreach campaign via email (Notify Me), social media posts, and web content on ESD website: http://sanjoseca.gov/index.aspx?nid=1427 promoting Pollution Prevention week.	DMV ad ran from 1 September through 30 November 2017, four times every hour for a total of 2,190 times during the period resulting in 186,654 impressions. Pollution Prevention week outreach campaign ran from September 1-24, 2017.

ATTACHMENT A – Santa Clara County Annual HHW Memorandum

County of Santa Clara
Consumer and Environmental Protection Agency
Recycling and Waste Reduction Division
Household Hazardous Waste Program
1555 Berger Drive, Bldg 2, Suite 300
San Jose, CA 95112
Tel: (408) 299-7300 Fax: (408) 280-6479
http://www.HHW.org

Memorandum

August 1, 2017

To: Storm Water/Urban Runoff P2 Staff

From: Bill Grimes, Program Manager
Household Hazardous Waste Program
Recycling and Waste Reduction Division
County of Santa Clara

Re: Fiscal Year 2016-2017 HHW Program Update

Participation
The HHW Program served 28,679 residents from July 1, 2016 through June 30, 2017 and safely managed 2,655,871 pounds of hazardous waste. There were a total of 172 collection events: 164 at two permanent facilities and 8 at temporary sites strategically located throughout the County. In addition, the program served 392 small business drop-offs including local governments, Goodwill Industries, and the Salvation Army.

Paint
A total of 1,105,198 pounds of paint and paint related material was collected. Latex paint accounted for 552,029 pounds and oil-based paint related material accounted for 553,169 pounds. There are an additional 39 take-back locations managed by the paint manufacturers at retail stores. Paint collected at these locations do not contribute to the above quantities.

Pesticides
The HHW Program collected 185,450 pounds of poisonous liquids, and 116,320 pounds of poisonous solids.

Household batteries
A total of 183,449 pounds of household batteries were collected and recycled. Of that volume, retail take-back stores accounted for 105,629 pounds. Forty-six (46) stores serve as our network of battery take-back partners. In addition, our battery partners manage their collected rechargeable batteries directly through Call2Recycle, the North American Product Stewardship Organization funded by the producers. Lastly, there are there are over 50 additional Santa Clara County locations that take-back batteries that are not part of our network of partners.

Mercury-containing fluorescent lamps
A total of 131,973 pounds of fluorescent lamps were collected. Of that volume, retail take-back stores accounted for 104,215 pounds. The remaining were collected at HHW events. Thirty-five (35) stores serve as fluorescent lamp take-back partners. Similar to batteries, there are more than a dozen other Santa Clara County locations that accept fluorescent lamps that are not part of our network of partners.

Elemental Mercury
One hundred fifty (150) pounds (includes thermostats, thermometers and other mercury containing products)

Pharmaceuticals and Sharps
A total of 8,319 pounds of unwanted/expired medications were managed.
A total of 4,715 pounds of used sharps were managed.

Public Outreach
Staff participated in 21 community outreach events.